



*Solar World Congress 2025*

**SCIENTIFIC PROGRAMME**



# *Solar World Congress 2025*

## **SCIENTIFIC PROGRAMME**

### **ORAL SESSIONS**



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - MORNING

#### ORAL SESSION 1 - BIFACIAL PV PERFORMANCE

**Room:** José de Alencar 1-3 (Auditorium) | **Chair:** Prof. Dr. Ricardo Rüther (Fotovoltaica/UFSC - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | ENERGY YIELD ENHANCEMENT OF VERTICAL BIFACIAL PHOTOVOLTAIC MODULES THROUGH REFLECTORS<br><i>Michael Anthony García Huamaní, David Elías Nuñez Rishmawi, Jose Ruben Angulo Abanto, Guillermo Edmundo Baldwin Olguin, Jan Amaru Palomino Töfflinger</i><br><i>Pontificia Universidad Católica del Perú</i>                                                                                                                                            |
| 09:15 | PERFORMANCE AND ENERGY GAINS OF BIFACIAL PV TECHNOLOGIES ACROSS DIFFERENT ALBEDO CONDITIONS<br><i>Thamires Alves Silva, Marília Braga, Rafael Antunes Campos, Gustavo Xavier de Andrade Pinto, Anelise Medeiros Pires, Helena Flávia Naspolini, Ricardo Rüther</i><br><i>Fotovoltaica/UFSC Laboratory</i>                                                                                                                                           |
| 09:30 | THE ROLE OF HIGH-ALBEDO GROUND COVER MATERIALS IN IMPROVING BIFACIAL PV PERFORMANCE: A CASE STUDY IN BRAZIL<br><i>Marília Braga<sup>1</sup>, Kevin Luiz Rocha de Azevedo<sup>1</sup>, Gustavo Xavier de Andrade Pinto<sup>1</sup>, Anelise Medeiros Pires<sup>1</sup>, Helena Flávia Naspolini<sup>1</sup>, Camila do Valle<sup>2</sup>, Ricardo Rüther<sup>1</sup></i><br><i><sup>1</sup> Fotovoltaica/UFSC Laboratory; <sup>2</sup> Azul Pack</i> |
| 09:45 | FIELD-BASED ALBEDO CHARACTERIZATION STATION: ASSESSING GROUND REFLECTIVITY FOR ENHANCED MODELING OF BIFACIAL PHOTOVOLTAIC SYSTEMS<br><i>Kevin Luiz Rocha de Azevedo, Marília Braga, Anelise Medeiros Pires, Thamires Alves Silva, Camila do Valle, Helena Flávia Naspolini, Ricardo Rüther</i><br><i>Fotovoltaica/UFSC Laboratory</i>                                                                                                               |
| 10:00 | PERFORMANCE EVALUATION OF VERTICAL EAST-WEST BIFACIAL PV MODULES COMPARED TO TILTED BIFACIAL AND MONOFACIAL MODULES IN COASTAL PERU<br><i>Michael Anthony García Huamaní, Jose Ruben Angulo Abanto, Rafael Jesus Vidal Coral, Dante Alberto Mendoza Aucaruri, Muriel Berthomieu, Jan Amaru Palomino Töfflinger</i><br><i>Pontificia Universidad Católica del Perú</i>                                                                               |
| 10:15 | THE EFFECT OF MOUNTING PARAMETERS ON THE PERFORMANCE OF BIFACIAL SOLAR MODULES<br><i>Gloria Katunge Maithya, Sebastian Waita, Francis Wanjala Nyongesa, Bernard Odhiambo Aduda</i><br><i>University of Nairobi</i>                                                                                                                                                                                                                                  |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - MORNING

#### ORAL SESSION 2 - BIPV: DESIGN STRATEGIES

**Room:** José de Alencar 4 (Room 5) | **Chair:** Prof. Dr. Isis Portolan dos Santos (UFSM - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | AN INTEGRATED OPTIMIZATION DESIGN FRAMEWORK FOR BIPV APPLICATIONS IN OFFICE BUILDINGS<br><u>Yusen Zhao</u> <sup>1</sup> , <u>Rebecca Yang</u> <sup>2</sup><br><sup>1</sup> RMIT University; <sup>2</sup> The University of Melbourne                                                                                                                                                                                                                                                                                                        |
| 09:15 | ASSESSING THE PASSIVE TRACKING POTENTIAL OF PV-INTEGRATED BUILDING FAÇADES IN A LOW-LATITUDE SITE<br><u>Isadora Pauli Custódio</u> , <u>Gustavo Xavier de Andrade Pinto</u> , <u>Sabrina Rodrigues Ebert</u> , <u>Marília Braga</u> , <u>Thamires Alves Silva</u> , <u>Ricardo Rüther</u><br>Fotovoltaica/UFSC Laboratory                                                                                                                                                                                                                   |
| 09:30 | A SIMPLIFIED GRAPHIC APPROACH TO INTEGRATE PV PANELS INTO A BUILDING DESIGN PROCESS<br><u>Thiago Vieira Fonseca</u> <sup>1</sup> , <u>Aldomar Pedrini</u> <sup>2</sup><br><sup>1</sup> IFRN; <sup>2</sup> UFRN                                                                                                                                                                                                                                                                                                                              |
| 09:45 | FIELD PERFORMANCE ASSESSMENT OF BIFACIAL MODULES INTEGRATED INTO BUILDING ENVELOPES IN A LOW-LATITUDE SITE<br><u>Isadora Pauli Custódio</u> <sup>1</sup> , <u>Instituto Federal de Santa Catarina</u> <sup>2</sup> , <u>Instituto Nacional de Pesquisas Espaciais</u> <sup>3</sup> , <u>Sabrina Rodrigues Ebert</u> <sup>1</sup> , <u>Anelise Medeiros Pires</u> <sup>1</sup> , <u>Matheus Hohmann</u> <sup>1</sup> , <u>Ricardo Rüther</u> <sup>1</sup><br><sup>1</sup> Fotovoltaica/UFSC Laboratory; <sup>2</sup> IFSC; <sup>3</sup> INPE |
| 10:00 | DIGITAL TWINS FOR PHOTOVOLTAIC PLANTS PERFORMANCE MONITORING<br><u>Gustavo Fraidenaich</u> , <u>José Eduardo Carlos Castilho</u> , <u>Gabriel Pereira Viterbo</u> , <u>Tárcio André dos Santos Barros</u> , <u>Denis Gustavo Fantinato</u><br>Universidade Estadual de Campinas                                                                                                                                                                                                                                                             |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - MORNING

#### ORAL SESSION 3 - EXTREME WEATHER & OVERIRRADIANCE EVENTS

**Room:** Sala de Reunião 1 (Room 1) | **Chair:** Dr. Fernando Martins (UNIFESP / INPE - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | FORECASTING PV OUTPUT DURING AEOLIAN DUST EVENTS: A CASE STUDY IN THE EAST MEDITERRANEAN<br><u>Pantelis Kiriakidis<sup>1</sup></u> , <u>Alexandros G. Charalambides<sup>2</sup></u> , <u>Andreas Ioannides<sup>3</sup></u> , <u>Theodoros Christoudias<sup>1</sup></u><br><sup>1</sup> The Cyprus Institute; <sup>2</sup> Cyprus Technological University; <sup>3</sup> Johnsun Ltd                                                                                                                                                                                                                                                    |
| 09:15 | ASSESSMENT OF THE PERFORMANCE OF CLIMATE MODELS DOWNSCALING FOR SOLAR RADIATION IN BRAZIL<br><u>Hallan Souza de Jesus<sup>1</sup></u> , <u>Andre Rodrigues Goncalves<sup>2</sup></u> , <u>Rodrigo Santos Costa<sup>2</sup></u> , <u>Francisco José Lopes de Lima<sup>1</sup></u> , <u>Paula Conde Santos Borba<sup>1</sup></u> , <u>Meiriele Alvarenga Cumplido<sup>2</sup></u> , <u>Enio Bueno Pereira<sup>2</sup></u> , <u>Fernando Ramos Martins<sup>1</sup></u><br><sup>1</sup> Federal University of São Paulo-UNIFESP; <sup>2</sup> National Institute for Space Research-INPE                                                   |
| 09:30 | OVERIRRADIANCE: CHARACTERIZATION AND FORECAST IN THE CENTRAL AMAZON<br><u>Vinicius Roggerio da Rocha<sup>1</sup></u> , <u>Rodrigo Santos Costa<sup>1</sup></u> , <u>Gilberto Fisch<sup>1</sup></u> , <u>Antônio Ruano<sup>2</sup></u><br><sup>1</sup> INPE-National Institute for Space Research; <sup>2</sup> Ualg-University of Algarve                                                                                                                                                                                                                                                                                              |
| 09:45 | INSIGHTS INTO THE FREQUENCY AND INTENSITY OF OVERIRRADIANCE EVENTS IN DIVERSE BRAZILIAN CLIMATES<br><u>Samira de Azevedo Santos Emiliavaca</u> , <u>Alan Rodrigues de Sousa</u> , <u>João Vítor Fonseca de Mendonça</u> , <u>André Luiz de Oliveira Lira</u> , <u>Ana Cleide Bezerra Amorim</u> , <u>Gabriela Rocha Alves da Silva</u> , <u>Bruno do Nascimento e Silva</u><br>Instituto SENAI de Inovação em Energias Renováveis-ISI-ER                                                                                                                                                                                               |
| 10:00 | ANALYSIS OF CLOUD COVER RELATED TO OVERIRRADIANCE EVENTS USING ALLSKY CAMERA<br><u>Moisés Elias Nascimento Rufino da Costa<sup>1</sup></u> , <u>Ana Cleide Bezerra Amorim<sup>1</sup></u> , <u>Samira de Azevedo Santos Emiliavaca<sup>1</sup></u> , <u>João Vítor Fonseca de Mendonça<sup>1</sup></u> , <u>Gabriela Rocha Alves da Silva<sup>1</sup></u> , <u>Alan Rodrigues de Sousa<sup>1</sup></u> , <u>Pedro Rodrigues Mutti<sup>2</sup></u> , <u>Artur Manoel Guimarães da Silveira<sup>2</sup></u><br><sup>1</sup> Instituto SENAI de Inovação em Energias Renováveis; <sup>2</sup> Universidade Federal do Rio Grande do Norte |
| 10:15 | CLIMATE CHANGE IMPACTS ON WIND ENERGY GENERATION IN BRAZIL'S NORTHEAST: A COMPARATIVE ANALYSIS OF RIO GRANDE DO NORTE AND CEARÁ<br><u>Guilherme Alcantara Barbosa Cunto<sup>1</sup></u> , <u>Danillo Roberto Pereira<sup>2</sup></u> , <u>Iuri Emmanuel de Paula Ferreira<sup>1</sup></u> , <u>Rafael de Oliveira Tiezzi<sup>1</sup></u><br><sup>1</sup> UFSCAR; <sup>2</sup> UNESP                                                                                                                                                                                                                                                    |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - MORNING

#### ORAL SESSION 4 - ENERGY TRANSITION, SOCIETY AND JUSTICE

**Room:** Sala de Reunião 2 (Room 2) | **Chair:** Prof. Dr. Karla Cedano (Universidad Nacional Autónoma de México - Mexico)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | <p>SOLAR PHOTOVOLTAIC GENERATION IN MANÉ DENDÊ: DEMOCRATIZATION OF SOLAR ENERGY IN POPULAR AREAS</p> <p><u>Amanda Dias Souza Santos</u><sup>1</sup>, <u>Ana Christina Romano Mascarenhas</u><sup>1</sup>, <u>Daniel Sarmento de Freitas</u><sup>1</sup>, <u>Nathane Lima Cintra</u><sup>2</sup></p> <p><sup>1</sup> Neoenergia Coelba; <sup>2</sup> Associação Voluntários para o Serviço Internacional Brasil</p>                                                                                                                                                                                                                                                              |
| 09:15 | <p>COMPENSATIONS AND ENERGY JUSTICE IN THE CONTEXT OF GREEN HYDROGEN: REFLECTIONS FROM THE AUSTRAL SOUTH</p> <p><u>Cristiane Silva de Carvalho</u><sup>1</sup>, <u>Juana Angélica Felipe Fernandes</u><sup>2</sup>, <u>Claudio A. Agostini</u><sup>2</sup>, <u>Rodrigo Palma-Behnke</u><sup>3</sup></p> <p><sup>1</sup> Universidad de Magallanes; <sup>2</sup> Universidad Adolfo Ibáñez; <sup>3</sup> Universidad de Chile</p>                                                                                                                                                                                                                                                |
| 09:30 | <p>GENDER AND CORPORATE PRACTICES IN THE SOLAR PHOTOVOLTAIC SECTOR: A CRITICAL LOOK AT REDE MESOL AWARDEES</p> <p><u>Gabriela Martins Flores</u><sup>1</sup>, <u>Renata Mansuelo Alves Domingos</u><sup>2</sup>, <u>Ingrid de Paula Marques</u><sup>1</sup>, <u>Bárbara Gomes Pereira</u><sup>3</sup>, <u>Aline Cristiane Pan</u><sup>1</sup></p> <p><sup>1</sup> Universidade Federal do Rio Grande do Sul; <sup>2</sup> Universidade Federal de Santa Catarina; <sup>3</sup> Centro Federal de Educação Tecnológica Celso Suckow da Fonseca</p>                                                                                                                               |
| 09:45 | <p>ENERGY TRANSITION AND LAND USE CHANGE: THE EMERGENCE OF PHOTOVOLTAIC INFRASTRUCTURE IN THE AGRICULTURAL SECTOR OF THE O'HIGGINS REGION, CHILE</p> <p><u>Marcia Montedonico</u>, <u>Carla Lanyon</u>, <u>Antonia Jeldes</u>, <u>Francisca Herrera</u></p> <p>University of Chile</p>                                                                                                                                                                                                                                                                                                                                                                                          |
| 10:00 | <p>FREE ENERGY MARKET TRANSITION: A STUDY CASE OF 32 CONSUMPTION UNITS IN BRAZIL</p> <p><u>Anderson Azevedo Fraga</u><sup>1</sup>, <u>Sabrina Antonio Torres</u><sup>1</sup>, <u>Charles Dias de Almeida</u><sup>1</sup>, <u>Henrique Ferrario Traba</u><sup>1</sup>, <u>Lohane Barcelos Palaoro</u><sup>1</sup>, <u>Guilherme Henrique Pereira</u><sup>2</sup>, <u>Marcelo Eduardo Vieira Segatto</u><sup>1</sup></p> <p><sup>1</sup> Federal University of Espirito Santo; <sup>2</sup> Arandu Institute</p>                                                                                                                                                                  |
| 10:15 | <p>TOWARDS A JUST ENERGY TRANSITION: A PRACTICAL GUIDE FOR INTER AND TRANSDISCIPLINARY ENERGY PROJECTS</p> <p><u>Francisca Herrera</u><sup>1</sup>, <u>Carla Lanyon</u><sup>2</sup>, <u>Marcia Montedonico</u><sup>2</sup>, <u>Dasla Pando</u><sup>2</sup>, <u>Danny Espin</u><sup>3</sup>, <u>Viviana Araus</u><sup>2</sup>, <u>Emma Velterop</u><sup>4</sup>, <u>Antonio Marín</u><sup>5</sup>, <u>Rodrigo Palma-Behnke</u><sup>2</sup></p> <p><sup>1</sup> Energy Center, Redpe, University of Chile; <sup>2</sup> Energy Center, University of Chile; <sup>3</sup> Universidad Federico Santa María; <sup>4</sup> Stanford University; <sup>5</sup> University of Chile</p> |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - MORNING

#### ORAL SESSION 5 - HYBRID SYSTEMS AND POWER-TO-X

**Room:** Sala de Reunião 3 (Room 3) | **Chair:** Prof. Dr. Michael Leung (U Hong Kong - Hong Kong)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | OPTIMIZING DIRECT SOLAR-TO-HYDROGEN CONVERSION: MODELING AND CONTROL OF SHJ-PV AND PEM ELECTROLYZER INTEGRATION<br><i>Diamantis Almpantis, Henrik Davidsson, Martin Andersson</i><br><i>Lund University</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 09:15 | PROJECT SULPHURREAL: DEVELOPMENT OF DIGITAL TWIN OF THERMOCHEMICAL CYCLE FOR SOLID SULPHUR PRODUCTION FOR LONG-TERM STORAGE OF SOLAR ENERGY<br><i>João Humberto Serafim Martins<sup>1</sup>, Yasuki Kadohiro<sup>1</sup>, Dimitrios Dimitrakis<sup>1</sup>, Christos Agrafiotis<sup>1</sup>, Nathalie Monnerie<sup>1</sup>, Christian Sattler<sup>1</sup>, Sofia Polymeni<sup>2</sup>, Giannis Aslanis<sup>2</sup>, Vasileios Lolis<sup>2</sup>, Ilias Kalamaras<sup>2</sup>, Konstantinos Votis<sup>2</sup></i><br><i><sup>1</sup> German Aerospace Center (DLR), Cologne - Germany; <sup>2</sup> Centre for Research &amp; Technology, Hellas (Certh), Thessaloniki - Greece</i> |
| 09:30 | DECARBONIZING POWER AND TRANSPORT SECTORS THROUGH RENEWABLE INTEGRATION: BATTERY, HYDROGEN, AND POWER-TO-MOBILITY SOLUTIONS<br><i>Mahamat Adoum Abdoulaye<sup>1</sup>, Sebastian Waita<sup>1</sup>, Julius M. Mwabora<sup>1</sup>, Cyrus Wabuge Wekesa<sup>2,3</sup></i><br><i><sup>1</sup> Department of Physics, University of Nairobi, Kenya; <sup>2</sup> School of Engineering, University of Eldoret, Kenya</i>                                                                                                                                                                                                                                                              |
| 09:45 | TECHNO-ECONOMIC OPTIMIZATION OF PV, BESS, AND HYBRID PV+BESS SYSTEM SIZING IN CHILE UNDER ENERGY ARBITRAGE STRATEGIES<br><i>Jorge Luis Saavedra Pinto</i><br><i>Fraunhofer Chile Research</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 10:00 | INTEGRATION OF PHOTOVOLTAIC SYSTEMS WITH FIRST AND SECOND LIFE BATTERIES - A TECHNICAL-ECONOMICAL CASE STUDY IN BRAZIL<br><i>João Pedro Frederico de Abreu, Vinícius Hirassaki, Helena Flávia Napolini, Ricardo Rüther</i><br><i>Universidade Federal de Santa Catarina</i>                                                                                                                                                                                                                                                                                                                                                                                                        |
| 10:15 | RENEWABLE ELECTRICITY SUPPLY IN AMAZONAS: ENERGY MODELING TO DECARBONIZE ISOLATED SYSTEMS<br><i>Meiriele Alvarenga Cumplido<sup>1</sup>, Andre Rodrigues Goncalves<sup>1</sup>, Fernando Ramos Martins<sup>2</sup>, Paula Conde Santos Borba<sup>2</sup>, Rodrigo Santos Costa<sup>1</sup>, Felipe Husadel Poyer<sup>1</sup>, Ricardo Rüther<sup>3</sup>, Enio Bueno Pereira<sup>1</sup></i><br><i><sup>1</sup> INPE; <sup>2</sup> UNIFESP; <sup>3</sup> UFSC</i>                                                                                                                                                                                                                  |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - MORNING

#### ORAL SESSION 6 - SOLAR HEAT FOR INDUSTRIAL PROCESSES

**Room:** Sala de Reunião 4 (Room 4) | **Chair:** Prof. Dr. Jose Miguel Cardemil (PUC - Chile)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | SOLAR HEAT FOR A HOT DIP GALVANIZING PROCESS USING LINEAR FRESNEL COLLECTORS AND PACKED BED THERMAL ENERGY STORAGE<br><i>Ian Wolde Ponce<sup>1</sup>, Ignacio Calderon Vasquez<sup>1</sup>, Felipe G. Battisti<sup>2</sup>, José M. Cardemil<sup>1</sup></i><br><sup>1</sup> Pontificia Universidad Católica de Chile; <sup>2</sup> UTEM                                                                                                                                                                                                                                                                                                                                                                                                               |
| 09:15 | DESIGN, CONSTRUCTION AND OPERATION OF AN INNOVATIVE LINEAR FRESNEL COLLECTOR<br><i>Loreto Valenzuela<sup>1</sup>, Diego Pulido Iparraguirre<sup>2</sup>, Juan R. López Guerrero<sup>1</sup>, Jesús Valero<sup>1</sup>, Ginés García<sup>1</sup></i><br><sup>1</sup> Ciemat-Plataforma Solar de Almería; <sup>2</sup> Universidad de Antofagasta                                                                                                                                                                                                                                                                                                                                                                                                        |
| 09:30 | COMPARATIVE ANALYSIS OF SOLAR THERMAL AND PV-ASSISTED HEAT PUMP TECHNOLOGIES FOR INDUSTRIAL PROCESS HEAT IN SOUTHERN AFRICA AND CENTRAL EUROPE<br><i>Johannes Koke<sup>1</sup>, Francois Rozon<sup>2</sup></i><br><sup>1</sup> Osnabrueck University of Applied Sciences; <sup>2</sup> Stellenbosch University                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 09:45 | ANALYSIS OF HEAT PIPES FOR CPC SOLAR COLLECTORS TO PROVIDE HEAT FOR INDUSTRIAL PROCESSES<br><i>Renzo Guido Cruz, Juan Manuel Rodríguez Muñoz, Pedro Andrés Galione Klot</i><br><i>Universidad de la Republica</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 10:00 | SOLAR HEAT FOR INDUSTRIAL PROCESSES PROTOTYPE FACILITY IN URUGUAY, USING CPC AND CONCRETE THERMAL ENERGY STORAGE<br><i>Pedro Andrés Galione Klot<sup>1</sup>, Germán Navarrete Cereijo<sup>1</sup>, Renzo Guido Cruz<sup>1</sup>, Juan Manuel Rodríguez Muñoz<sup>1</sup>, Italo Bove<sup>1</sup>, Federico Licandro<sup>1</sup>, Joaquin Abraham Buydid Castro<sup>2</sup>, Sebastián Andrés Lillo Órdenes<sup>2</sup>, Roberto Dellicompagni<sup>3</sup>, Marcos Hongn<sup>3</sup>, Loreto Valenzuela<sup>4</sup>, Emmanuel Romano Riela<sup>2</sup></i><br><sup>1</sup> Universidad de la República; <sup>2</sup> Volfer Ingeniería; <sup>3</sup> Instituto de Investigaciones en Energía no Convencional; <sup>4</sup> Plataforma Solar de Almería |
| 10:15 | OPTIMIZATION OF A SOLAR THERMAL PLANT INTEGRATED TO AN INDUSTRIAL PROCESS USING MACHINE LEARNING AND GENETIC ALGORITHMS<br><i>Ana Valentina Puentes Alarcón, Francisco Fuentes, Ivan Muñoz, Francisco Moraga Ramírez</i><br><i>Fraunhofer Chile</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - AFTERNOON

#### ORAL SESSION 7 - OPERATION OF PV SYSTEMS

**Room:** José de Alencar 4 (Room 5) | **Chair:** Prof. Dr. Gilberto Figueiredo Filho (UFF - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                  |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | SINGLE-PYRANOMETER APPROACH FOR DIFFUSE OPTIMIZATION IN SOLAR TRACKING SYSTEMS<br><i>Joao Gabriel Firta Foes<sup>1</sup>, Rafael Antunes Campos<sup>1</sup>, <u>Lucas Rafael do Nascimento<sup>1</sup></u>, Jonas Wetzel<sup>2</sup>, Rafael Rodrigues de Souza<sup>2</sup>, Ricardo Rüther<sup>1</sup></i><br><sup>1</sup> UFSC; <sup>2</sup> Brametal                          |
| 14:15 | QUANTIFYING SOILING LOSSES WITHOUT SENSORS<br><i>João Pedro Costa Barnabé, Gustavo Fraidenaich, Tércio André dos Santos Barros, Marcelo Vinícius de Paula, Marcel Veloso Campos, João Lucas de Souza Silva, <u>João Frederico Souza de Paula</u></i><br><i>Universidade Estadual de Campinas</i>                                                                                 |
| 14:30 | MODELING AND ANALYSIS OF PV MODULE FAULTS IN GRID-CONNECTED SYSTEMS USING MATLAB/SIMULINK UNDER REAL WEATHER CONDITIONS<br><i>Beatriz Barbosa Franco Ramos, <u>Daniel Henrique Nogueira Dias</u>, Alexandre de Arruda Bitencourt</i><br><i>Universidade Federal Fluminense</i>                                                                                                   |
| 14:45 | ELECTROLUMINESCENCE TEST TO IDENTIFY DEFECT FREQUENCY IN PHOTOVOLTAIC MODULES<br><i><u>Dayane Cynthia Pinto Oliveira</u>, Amanda Gomes Barboza, Camila Fernanda Cardoso Teixeira, Nicholas Medeiros Lopes, João Vítor Fonseca de Mendonça, Alan Rodrigues de Sousa, Samira de Azevedo Santos Emiliavaca</i><br><i>Instituto SENAI de Inovação em Energias Renováveis, ISI-ER</i> |
| 15:00 | A DATA DRIVEN STRING SIZING METHODOLOGY FOR UTILITY-SCALE PHOTOVOLTAIC SYSTEMS<br><i><u>Filipe Godoy Souza<sup>1,3</sup></u>, Marília Braga<sup>2</sup>, Maria Fernanda Nunes Silva<sup>3</sup>, Ricardo Rüther<sup>2</sup></i><br><sup>1</sup> University of Freiburg; <sup>2</sup> Fotovoltaica/UFSC; <sup>3</sup> Kroma Energia                                               |
| 15:15 | ARTIFICIAL INTELLIGENCE-BASED FAULT DETECTION IN PHOTOVOLTAIC POWER PLANTS USING DRONE-ACQUIRED THERMAL IMAGING<br><i>Daniel Henrique Nogueira Dias, Gilberto Figueiredo Pinto Filho, <u>Eduardo Martins da Silva</u>, Vitor Hugo Ferreira, Wanderson da Silva Corrêa</i><br><i>Universidade Federal Fluminense</i>                                                              |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - AFTERNOON

#### ORAL SESSION 8 - FORECASTING & MACHINE LEARNING FOR SOLAR RESOURCE

**Room:** Sala de Reunião 1 (Room 1) | **Chair:** Dr. Arttu Tuomiranta (TotalEnergies - France)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | TRANSFER LEARNING FOR PV GENERATION FORECASTING UNDER DATA SCARCITY: A CASE STUDY IN BRAZIL<br><i>Fernando Vasconde de Arruda<sup>1</sup>, Marcelo Pinho Almeida<sup>1</sup>, <u>Fernando Ramos Martins<sup>2</sup></u></i><br><sup>1</sup> IEE-USP; <sup>2</sup> UNIFESP                                                                                                                                                                                                           |
| 14:15 | SITE ADAPTATION FOR GLOBAL HORIZONTAL IRRADIANCE IN ARGENTINA USING A MULTILAYER PERCEPTRON<br><i><u>German Salazar<sup>1</sup></u>, Christian Gueymard<sup>2</sup>, Ruben Ledesma<sup>1</sup>, Olga de Castro Vilela<sup>3</sup></i><br><sup>1</sup> Inenco-Conicet; <sup>2</sup> Solar Consulting Services; <sup>3</sup> Universidade Federal de Pernambuco                                                                                                                       |
| 14:30 | ENHANCING GLOBAL SOLAR IRRADIANCE FORECASTS IN BRAZIL USING NUMERICAL MODELS AND MACHINE LEARNING<br><i><u>Francisco José Lopes de Lima<sup>1</sup></u>, Andre Rodrigues Goncalves<sup>1</sup>, Rodrigo Santos Costa<sup>1</sup>, Enio Bueno Pereira<sup>1</sup>, Fernando Ramos Martins<sup>2</sup></i><br><sup>1</sup> National Institute for Space Research; <sup>2</sup> Federal University of São Paulo                                                                        |
| 14:45 | SOLAR IRRADIANCE INTRADAY FORECASTING USING LSTM NETWORKS, GROUND MEASUREMENTS AND SATELLITE INFORMATION<br><i><u>Ximena Orsi<sup>1</sup></u>, Paula Iturbide<sup>1</sup>, Rodrigo Alonso Suárez<sup>2</sup>, Dario Licata Caruso<sup>1</sup>, Anahi Lanson<sup>1</sup>, Valeria Sol Stern<sup>1</sup></i><br><sup>1</sup> Gersolar, Grupo de Estudios de la Radiación Solar. Universidad Nacional de Luján; <sup>2</sup> Laboratorio de Energía Solar, Universidad de la República |
| 15:00 | IMPACT OF TRAINING STRATEGIES ON SATELLITE-BASED SOLAR IRRADIANCE FORECAST<br><i><u>Mariana Batista de Sousa</u>, Rodrigo Henrique de Lima Farias, Alexandre Carlos Araújo da Costa, Olga de Castro Vilela</i><br>Federal University of Pernambuco                                                                                                                                                                                                                                  |
| 15:15 | DEEP LEARNING FOR SATELLITE-BASED SOLAR IRRADIANCE FORECASTING<br><i><u>Rodrigo Alonso Suárez<sup>1</sup></u>, Andrés Herrera<sup>2</sup>, Franco Marchesoni Acland<sup>3</sup></i><br><sup>1</sup> Laboratorio de Energía Solar, CENUR Litoral Norte, UDELAR; <sup>2</sup> Laboratorio de Energía Solar, Facultad de Ingeniería, UDELAR; <sup>3</sup> Centre Borelli, Crns, Ens Paris-Saclay, Université Paris-Saclay                                                              |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - AFTERNOON

#### ORAL SESSION 9 - EDUCATION AND TRAINING

**Room:** Sala de Reunião 2 (Room 2) | **Chair:** Prof. Dr. Izete Zanesco (PUC-RS - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | TEACHING RENEWABLE ENERGY CONCEPTS WITH PORTABLE SOLAR PANELS: A HANDS-ON LEARNING PROJECT<br><u>Mariana Amorim Fraga</u><br><i>Universidade Presbiteriana Mackenzie</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 14:15 | ENERGY TRANSITION IN THE CONTEXT OF FAMILY FARMING IN PIAUI: DEVELOPMENT OF AN EDUCATIONAL APPLICATION APPLIED TO ENERGY TRANSITION<br><u>Ana Karoline Silva Martins<sup>1</sup></u> , <u>Albemerc Moura de Moraes<sup>2</sup></u><br><sup>1</sup> <i>Federal University of Piauí-UFPI</i> ; <sup>2</sup> <i>Interdisciplinary Research Group on Solar Energy of Piauí-GIPES/UFPI</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 14:30 | PEDAGOGICAL STRATEGIES FOR RENEWABLE ENERGY EDUCATION IN ELEMENTARY SCHOOLS<br><u>Michele Fossati</u> , <u>Maria Luíza Severo</u> , <u>Mariana Coelho da Costa</u><br><i>Universidade Federal de Santa Catarina</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 14:45 | INTEGRATING SUSTAINABILITY, TECHNICAL SKILLS, AND CULTURAL COMPETENCIES: EDUCATIONAL INSIGHTS FROM A VOLUNTEER-LED OFF-GRID PV PROJECT IN PERU<br><u>Shashi Persaud</u><br><i>Southern Alberta Institute of Technology</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 15:00 | EDUCATION FOR AN EQUITABLE ENERGY FUTURE: LESSONS FROM SOUTHERN BRAZIL<br><u>Aline Cristiane Pan<sup>1</sup></u> , <u>Michele Fossati<sup>2</sup></u> , <u>Ísis Portolan dos Santos<sup>3</sup></u> , <u>Gabriela Pereira da Silva Maciel<sup>1</sup></u> , <u>Angela Carine Moura Figueira<sup>1</sup></u> , <u>Amanda Mendes Ferreira Gomes<sup>2</sup></u> , <u>Renata Mansuelo Alves Domingos<sup>2</sup></u> , <u>Ricardo Rütther<sup>2</sup></u> , <u>Liege Dalpra Flores<sup>2</sup></u> , <u>Juliana Klas<sup>1</sup></u> , <u>Bianca Neves Machado<sup>1</sup></u> , <u>Regional Council Of Engineering And Agronomy<sup>4</sup></u> , <u>Liane Ludwig Loder<sup>1</sup></u> , <u>Valquiria Villas Boas Gomes Missel<sup>1</sup></u> , <u>Juliane Borba Minitto<sup>1</sup></u> , <u>Thais Crestani<sup>5</sup></u> , <u>Alice Stephanie Tapia Sartori<sup>1</sup></u> , <u>Mariana Oliveira Santos Barbosa Mendes<sup>1</sup></u> , <u>Jennifer Carrion<sup>1</sup></u> , <u>Júlia Rechia Voltolini<sup>2</sup></u> , <u>Laura da Silva de Camargo<sup>3</sup></u> , <u>Sinara Silveira Santos<sup>6</sup></u> , <u>Joice Teresinha Airoidi Costa<sup>7</sup></u> , <u>Michelle Bicalho Antunes<sup>8</sup></u> , <u>Lisandra Barreto da Silva<sup>9</sup></u> , <u>Thais de Paiva Corrêa Picanço<sup>10</sup></u> , <u>Thieli Vicenci Wildgrube<sup>3</sup></u> , <u>Gabriela Sehnem Heck<sup>1</sup></u><br><sup>1</sup> <i>URGS</i> ; <sup>2</sup> <i>UFSC</i> ; <sup>3</sup> <i>UFSM</i> ; <sup>4</sup> <i>CREA</i> ; <sup>5</sup> <i>PUC-RS</i> ; <sup>6</sup> <i>Assis Brasil State High School</i> ; <sup>7</sup> <i>Barão de Tramandaí State Institute of Education</i> ; <sup>8</sup> <i>Vicente Farencena Municipal Elementary School</i> ; <sup>9</sup> <i>Fredolino Chimango Municipal Elementary School</i> ; <sup>10</sup> <i>Simão José Hess Basic Education School</i> |
| 15:15 | EDUCATION, GENDER AND THE ENERGY MANAGEMENT ROLE TO THE ENERGY TRANSITION<br><u>Juliana Klas<sup>1</sup></u> , <u>Renata Mansuelo Alves Domingos<sup>2</sup></u> , <u>Michele Fossati<sup>2</sup></u> , <u>Gabriela Sehnem Heck<sup>1</sup></u> , <u>Tiago Rosalen ScharDOSim de Matos<sup>1</sup></u> , <u>Aline Cristiane Pan<sup>3</sup></u><br><sup>1</sup> <i>Federal University of Rio Grande do Sul</i> ; <sup>2</sup> <i>Federal University of Santa Catarina</i> ; <sup>3</sup> <i>UFRGS</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - AFTERNOON

#### ORAL SESSION 10 - BIPV: POTENTIAL AND MARKET OPPORTUNITIES

**Room:** Sala de Reunião 3 (Room 3) | **Chair:** Prof. Dr. Rebecca Yang (University of Melbourne - Australia)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | SOLAR ENERGY FOR SUSTAINABLE FUEL: A SELF-SUSTAINABLE BRAZILIAN LABORATORY FOR GREEN HYDROGEN AND AMMONIA<br><u>Aline Kirsten Vidal de Oliveira</u> <sup>1</sup> , Weronika Smolarek <sup>1</sup> , Jasmin Gräßler <sup>1</sup> , Daniel Odilio dos Santos <sup>2</sup> , Maira Mallmann <sup>2</sup> , Ricardo Rüther <sup>2</sup><br><sup>1</sup> Technische Hochschule Ingolstadt; <sup>2</sup> Universidade Federal de Santa Catarina                                                                                 |
| 14:15 | REAL-TIME ESTIMATION OF URBAN SOLAR ROOFTOP POTENTIAL: A CASE STUDY<br><u>Abdul Wahab</u> <sup>1</sup> , Dunia <sup>1</sup> , Daniel Perez-Astudillo <sup>1</sup> , Inas Hussain Mahir <sup>1</sup><br><sup>1</sup> Qatar Environment and Energy Research Institute                                                                                                                                                                                                                                                       |
| 14:30 | SUSTAINABLE ENERGY TRANSITION IN SUB-SAHARAN AFRICA: MULTI-OBJECTIVE OPTIMIZATION FOR NET-ZERO ENERGY BUILDINGS<br><u>Mahamat Adoum Abdoulaye</u> <sup>1</sup> , Sebastian Waita <sup>1</sup> , Julius M. Mwabora <sup>1</sup> , Cyrus Wabuge Wekesa <sup>2</sup> , Hanki Kim <sup>3</sup><br><sup>1</sup> Department of Physics, University of Nairobi; <sup>2</sup> School of Engineering, University of Eldoret; <sup>3</sup> Distributed Energy Team, Jeju Global Research Center, Korea Institute of Energy Research |
| 14:45 | POTENTIAL OF SOLAR FAÇADES FOR RESIDENTIAL BUILDINGS IN BRAZIL<br><u>Ísis Portolan dos Santos</u> <sup>1</sup> , Bruna Gabriela Huth Teixeira <sup>1</sup> , Luiza Xavier Pairé <sup>1</sup> , Elaise Gabriel <sup>1</sup> , Jenifer Godoy Daltrozo <sup>2</sup><br><sup>1</sup> UFSM; <sup>2</sup> UFRGS                                                                                                                                                                                                                 |
| 15:00 | BARRIERS TO THE IMPLEMENTATION OF DISTRIBUTED PHOTOVOLTAIC GENERATION IN THE NORTHEAST OF ARGENTINA<br><u>Luis Horacio Vera</u> <sup>1</sup> , Lorena Ledesma <sup>1</sup> , Claudia Alejandra Pilar <sup>1</sup> , Manuel Caceres <sup>1</sup> , Andres Danilo Firman <sup>1</sup> , Alexis Raul Gonzalez Mayans <sup>1</sup><br><sup>1</sup> UNNE                                                                                                                                                                       |
| 15:15 | DEGRADATION STUDIES OF PHOTOVOLTAIC MODULES IN VARIOUS SYSTEM DEPLOYMENTS IN MINAS GERAIS, BRASIL<br><u>Denio Alves Cassini</u> <sup>1</sup> , Vinicius Augusto Camatta Santana <sup>1</sup> , Lawrence L. Kazmerski <sup>2</sup> , Antonia Sônia A.C. Diniz <sup>1</sup><br><sup>1</sup> Pontifícia Universidade Católica de Minas Gerais; <sup>2</sup> University of Colorado Boulder                                                                                                                                   |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### TUESDAY - 04/11/2025 - AFTERNOON

#### ORAL SESSION 11 - CSP SYSTEMS AND HYBRIDIZATION

**Room:** Sala de Reunião 4 (Room 4) | **Chair:** Prof. Dr. Rodrigo Escobar (PUC - Chile)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | OPEN-SOURCE MODELING OF THERMAL HYBRIDIZATION IN CSP-BIOMASS COGENERATION: A BRAZILIAN SUGARCANE PLANT CASE STUDY<br><u>Benhur Azambuja Possatto</u> <sup>1</sup> , <u>Walfrido Alonso Pippo</u> <sup>2</sup><br><sup>1</sup> <i>Flextronics Instituto de Tecnologia</i> ; <sup>2</sup> <i>Universidade Federal da Integração Latino-Americana</i>                                                                                           |
| 14:15 | IMPACT OF A PARTIAL SOLAR ECLIPSE ON THE DIRECT NORMAL IRRADIANCE AND FLUX DISTRIBUTION IN A SOLAR TOWER SYSTEM<br><u>Ricardo Filipe Carrão da Conceição</u> <sup>1</sup> , <u>Jose Gonzalez-Aguilar</u> <sup>1</sup> , <u>Manuel Romero</u> <sup>1</sup> , <u>Germilly Reki Morais Barreto</u> <sup>1</sup><br><sup>1</sup> <i>IMDEA Energy</i>                                                                                             |
| 14:30 | COMPARATIVE TECHNO-ECONOMIC ANALYSIS OF MOLTEN SALT VERSUS PARTICLE-BASED HYBRID PV-CSP PLANTS WITH ELECTRIC HEATERS AND SCO <sub>2</sub> POWER BLOCKS<br><u>Salvatore Guccione</u> <sup>1</sup> , <u>Rafael Guedez</u> <sup>1</sup><br><sup>1</sup> <i>KTH Royal Institute of Technology</i>                                                                                                                                                |
| 14:45 | DECARBONIZING INDUSTRIAL HEAT IN CENTRAL ASIA: A CASE STUDY ON PARABOLIC TROUGH COLLECTORS UNDER TASHKENT CONDITIONS<br><u>Azizboy Khaitmukhamedov</u> <sup>1</sup> , <u>Dilshod Jalilov</u> <sup>1</sup> , <u>Oybek Abdulkhaev</u> <sup>1</sup><br><sup>1</sup> <i>Physical-Technical Institute of Uzbekistan Academy of Sciences</i>                                                                                                       |
| 15:00 | SOL-GEL COBALT-FREE SPINEL OXIDE AS A SELECTIVE SOLAR ABSORBER: ACHIEVING HIGH EFFICIENCY WITHOUT CRITICAL RAW MATERIALS<br><u>Federico Turci</u> <sup>1</sup> , <u>Andreas Schüler</u> <sup>1</sup><br><sup>1</sup> <i>EPFL</i>                                                                                                                                                                                                             |
| 15:15 | USING SECOND-LIFE ELECTRIC VEHICLE BATTERIES TO SECURE SUSTAINABLE ENERGY SUPPLY AND FOSTER SOCIO-ECONOMIC DEVELOPMENT IN REMOTE AMAZONIAN COMMUNITIES<br><u>Arne Jeppe</u> <sup>1</sup> , <u>Alessandro Bezerra Trindade</u> <sup>2</sup> , <u>Prof. Dr. Iury Bessa</u> <sup>2</sup> , <u>Prof. Dr. Heike Proff</u> <sup>1</sup><br><sup>1</sup> <i>University of Duisburg-Essen</i> ; <sup>2</sup> <i>Universidade Federal do Amazonas</i> |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - MORNING

#### ORAL SESSION 12 - PERFORMANCE OF PV POWER PLANTS

**Room:** José de Alencar 1-3 (Auditorium) | **Chair:** Prof. Dr. Antonia Sonia Alves Cardoso Diniz (PUC MG - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | APPLICATION OF ANALYTICAL MODELS TO ESTIMATE SOILING LOSSES IN PHOTOVOLTAIC SYSTEMS IN A SEMIARID REGION<br><u>José Janiere Silva de Souza</u> <sup>1</sup> , <u>Paulo Cesar Marques de Carvalho</u> <sup>2</sup><br><sup>1</sup> Instituto Federal do Ceará - Campus Cedro; <sup>2</sup> Universidade Federal do Ceará                                                                                                                                                    |
| 09:15 | PERFORMANCE CHALLENGES OF ON-GRID SOLAR PV POWER PLANTS IN EMERGING MARKETS: A CASE OF BOTSWANA<br><u>Segolame Phegelo</u> <sup>1</sup> , <u>Oboetswe Seraga Motsamai</u> <sup>1</sup> , <u>Kevin Nnanye Nwaigwe</u> <sup>1</sup><br><sup>1</sup> University of Botswana - Clean Energy Research Centre                                                                                                                                                                    |
| 09:30 | PERFORMANCE OF REGRESSION TECHNIQUES IN PREDICTING ALTERNATING CURRENT POWER (ACP) IN SOLAR PLANTS: CASE STUDY AT IFPE PESQUEIRA<br><u>Manoel Henrique de Oliveira Pedrosa Filho</u> <sup>1</sup> , <u>Ricardo Ataíde de Lima</u> <sup>2</sup> , <u>José Oliveira Morais Neto</u> <sup>2</sup><br><sup>1</sup> IFPE; <sup>2</sup> UPE                                                                                                                                      |
| 09:45 | IMPACT OF CALCULATION ASSUMPTIONS ON THE PERFORMANCE RATIO OF PHOTOVOLTAIC POWER PLANTS: INFLUENCE OF DISCARDING THE NIGHT PERIOD AND THE PERIOD OF EXTERNAL LIMITATIONS<br><u>Beatriz Souza Horn</u><br>Polytechnic Institute of Bragança - IPB and Portalegre Polyth Polytechnic University - IPP                                                                                                                                                                        |
| 10:00 | PROPOSAL OF A METHODOLOGY FOR EVALUATING PHOTOVOLTAIC INVERTER PERFORMANCE USING A NOVEL PERFORMANCE RATIO<br><u>Andrei da Cunha Lima</u> <sup>1</sup> , <u>Charles Schardong</u> <sup>1</sup> , <u>Ricardo Bortolini</u> <sup>1</sup> , <u>Frederico Schaf</u> <sup>1</sup> , <u>Cassiano Rech</u> <sup>1</sup> , <u>Lucas Bellinaso</u> <sup>1</sup> , <u>Leandro Michels</u> <sup>1</sup><br><sup>1</sup> Universidade Federal de Santa Maria                           |
| 10:15 | EXPECTATIONS VS. REALITY: A COMPREHENSIVE ANALYSIS OF UNDERPERFORMANCE IN BRAZILIAN UTILITY-SCALE SOLAR PLANTS<br><u>Lucas Rafael do Nascimento</u> <sup>1</sup> , <u>André Luiz Prado Cechinel</u> <sup>1</sup> , <u>João Paulo Alves Veríssimo</u> <sup>1</sup> , <u>Gustavo Xavier de Andrade Pinto</u> <sup>1</sup> , <u>Rafael Antunes Campos</u> <sup>1</sup> , <u>Helena Flávia Napolini</u> <sup>1</sup> , <u>Ricardo Rüther</u> <sup>1</sup><br><sup>1</sup> UFSC |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - MORNING

#### ORAL SESSION 13 - INNOVATIVE PV MODULES AND APPLICATIONS

**Room:** José de Alencar 4 (Room 5) | **Chair:** Prof. Dr. Ian Marius Peters (HI-ERN - Germany)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | OVERCOMING THE DATA GAP OF FLOATING PHOTOVOLTAIC PLANTS: SYNTHETIC DATA GENERATION AND TRANSFER LEARNING TECHNIQUES<br><i>Leticia de Oliveira Santos<sup>1</sup>, Breno Bezerra Freitas<sup>1</sup>, Tarek AlSkaif<sup>2</sup>, Paulo Cesar Marques de Carvalho<sup>1</sup></i><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Wageningen University & Research                                                                                                                    |
| 09:15 | LARGE SCALE WATER BASED ORGANIC PHOTOVOLTAICS<br><i>Júlia Ketzer Majewski<sup>1</sup>, Maiara de Jesus Bassi<sup>1</sup>, Lucimara Stolz Roman<sup>1</sup></i><br><sup>1</sup> Federal University of Paraná                                                                                                                                                                                                                                                                                     |
| 09:30 | MANGANESE DOPED ZINC SULPHIDE NANOPARTICLES FOR ENHANCED ORGANIC SOLAR CELL POWER CONVERSION EFFICIENCY<br><i>Mpilo Dlamini<sup>1</sup>, Genene Tessema Mola<sup>2</sup></i><br><sup>1</sup> North-West University; <sup>2</sup> University of KwaZulu-Natal                                                                                                                                                                                                                                    |
| 09:45 | COMPARATIVE ANALYSES BASED ON FIELD-MEASURED MODULE TEMPERATURES FROM A UTILITY-SCALE FLOATING PHOTOVOLTAIC SYSTEM<br><i>Renzo Amilcar Vargas Peralta<sup>1</sup>, Givaldo dos Reis<sup>1</sup>, Rodrigo P. Maruyama<sup>1</sup>, Alex Renan Arrifano Manito<sup>1</sup>, Marcelo Pinho Almeida<sup>1</sup>, Roberto Zilles<sup>1</sup></i><br><sup>1</sup> Universidade de São Paulo (USP)                                                                                                     |
| 10:00 | ENHANCING IRRIGATION RESERVOIRS THROUGH FLOATING PHOTOVOLTAIC: A SATELLITE MAPPING-BASED MULTIFUNCTIONAL WATER-ENERGY STRATEGY<br><i>Andrés Osvaldo Benito<sup>1</sup>, Esteban Lannutti<sup>2</sup>, Pedro Castro Verdezoto<sup>3</sup></i><br><sup>1</sup> Universidad Tecnológica Nacional, Facultad Regional Mendoza; <sup>2</sup> Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales (IANIGLA); <sup>3</sup> Universidad de Guayaquil, Facultad de Ingeniería Industrial |
| 10:15 | ANALYSIS OF ORGANIC PHOTOVOLTAICS APPLICATION IN TUBELIKE BUS STATIONS OF CURITIBA: DEGRADATION, SEASONAL AND SHADING EFFECTS<br><i>Júlia Ketzer Majewski<sup>1</sup>, Anna Gabriella Tempesta<sup>1</sup>, Lucimara Stolz Roman<sup>1</sup></i><br><sup>1</sup> Federal University of Paraná                                                                                                                                                                                                   |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - MORNING

#### ORAL SESSION 14 - SATELLITE DATA & DATABASE VALIDATION

**Room:** Sala de Reunião 1 (Room 1) | **Chair:** Prof. Dr. Rodrigo Alonso Suárez (Universidad de la República - Uruguay)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | FORECASTING DIFFUSE SOLAR IRRADIATION<br><u>John Boland</u><br>Adelaide University                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 09:15 | EVALUATION OF THE CAMS GRIDDED SOLAR RADIATION MAP IN BRAZIL<br><u>João Marcos Oliveira de Senna Caaetê Chacon</u> <sup>1</sup> , <u>Diego Rodrigues de Miranda</u> <sup>2</sup> , <u>Olga de Castro Vilela</u> <sup>1</sup> , <u>Faiza Azam</u> <sup>2</sup><br><sup>1</sup> Universidade Federal de Pernambuco; <sup>2</sup> DLR Institute of Networked Energy Systems                                                                                                                                                                                                                                                                              |
| 09:30 | QUANTIFYING AEROSOL AND CLOUD EFFECTS ON SOLAR RADIATION VIA ALL-SKY IMAGERY AND 3D CLOUD MODELING<br><u>Andreas Kazantzidis</u> <sup>1</sup> , <u>Stavros-Andreas Logothetis</u> <sup>1</sup> , <u>Panagiotis Tzoumanikas</u> <sup>1</sup> , <u>Orestis Panagopoulos - Kontostavlakis</u> <sup>1</sup><br><sup>1</sup> University of Patras                                                                                                                                                                                                                                                                                                          |
| 09:45 | DEVELOPMENT OF A HYBRID MODEL FOR SOILING ANALYSIS IN PHOTOVOLTAIC SYSTEMS UNDER DIFFERENT CLIMATIC CONDITIONS CONSIDERING RAINFALL AND TURBIDITY DATA<br><u>Gabriel Caminha de Araujo Costa</u> <sup>1</sup> , <u>João Pedro Costa Barnabé</u> <sup>1</sup> , <u>João Frederico Souza de Paula</u> <sup>1</sup> , <u>João Lucas de Souza Silva</u> <sup>1</sup> , <u>Gustavo Fraidenraich</u> <sup>1</sup> , <u>Tárcio André dos Santos Barros</u> <sup>1</sup><br><sup>1</sup> Universidade Estadual de Campinas                                                                                                                                    |
| 10:00 | BRAZILIAN DATABASE FOR SOLAR IRRADIATION ASSESSMENT<br><u>Rodrigo Santos Costa</u> <sup>1</sup> , <u>Andre Rodrigues Goncalves</u> <sup>1</sup> , <u>Antonio Mauricio Zarzur</u> <sup>1</sup> , <u>Ricardo Almeida de Siqueira</u> <sup>1</sup> , <u>Vinicius Roggerio da Rocha</u> <sup>1</sup> , <u>Enio Bueno Pereira</u> <sup>1</sup> , <u>Marcelo Pizzuti Pes</u> <sup>1</sup> , <u>Guilherme Baggio Martins Machado</u> <sup>1</sup> , <u>Madeleine Sánchez Gácita Casagrande</u> <sup>1</sup> , <u>Fernando Ramos Martins</u> <sup>2</sup><br><sup>1</sup> National Institute for Space Research; <sup>2</sup> Federal University of São Paulo |
| 10:15 | ASSESSING THE ACCURACY OF PUBLICLY AVAILABLE SPECTRAL IRRADIANCE DATA FROM NSRDB<br><u>Arttu Tuomiranta</u> <sup>1</sup> , <u>Etienne Drahí</u> <sup>1</sup><br><sup>1</sup> TotalEnergies                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - MORNING

#### ORAL SESSION 15 - ENERGY MARKETS AND SYSTEM INTEGRATION

**Room:** Sala de Reunião 2 (Room 2) | **Chair:** Prof. Dr. Aline Pan (UFRGS - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | SOLAR EXPANSION IN CEARÁ: ANALYSIS OF LICENSE ISSUANCE AND IMPLICATIONS FOR REGIONAL ENERGY DEVELOPMENT (2022-2024)<br><i>Marilangela da Silva Sobrinho<sup>1</sup>, Wasley Maciel Pinheiro<sup>1</sup>, Mayara Jessica Cavalcante Freitas<sup>2</sup>, Ademar Almeida de Sousa<sup>1</sup>, Rosane Moraes Falcão Queiroz<sup>1</sup></i><br><sup>1</sup> SEMACE; <sup>2</sup> Instituto Federal de Educação, Ciência e Tecnologia do Ceará-IFCE                                                                                                                                                                                                                                                                                            |
| 09:15 | SOLAR THERMAL ENERGY FOR INDUSTRIAL PROCESSES: INSIGHTS FROM CUENCA, ECUADOR<br><i>Andres Montero Izquierdo<sup>1</sup>, Willian Carrion Chamba<sup>1</sup>, Wilson Murillo Torres<sup>1</sup>, M.R. Pelaez-Samaniego<sup>1</sup>, Andreas Häberle<sup>2</sup>, Iván Patricio Acosta Pazmiño<sup>1</sup></i><br><sup>1</sup> Universidad de Cuenca; <sup>2</sup> Eastern Switzerland University of Applied Sciences                                                                                                                                                                                                                                                                                                                         |
| 09:30 | A POST-EVALUATION OF SOCIAL DIMENSIONS OF BIPV ADOPTION IN CASE STUDIES BUILDINGS ACROSS DIVERSE EUROPEAN CONTEXTS<br><i>Tahmineh Akbarinejad<sup>1</sup>, Chiara Bertolin<sup>1</sup>, Nuria Martin Chivelet<sup>2</sup>, Gilles Desthieux<sup>3</sup>, Paolo Corti<sup>4</sup>, Björn Rau<sup>5</sup>, Samira Jama Aden<sup>5</sup>, Pierluigi Bonomo<sup>4</sup>, Gabriele Lobaccaro<sup>1</sup></i><br><sup>1</sup> Norwegian University of Science and Technology; <sup>2</sup> Photovoltaic Unit, CIEMAT; <sup>3</sup> University of Applied Sciences and Art (HES-SO); <sup>4</sup> University of Applied Sciences and Arts of Southern Switzerland (SUPSI); <sup>5</sup> Helmholtz-Zentrum Berlin für Materialien und Energie (HZB) |
| 09:45 | STOCHASTIC TIME SERIES FORECASTING APPROACH USING MARKOV CHAIN FOR ROBUST ENERGY SYSTEM PLANNING<br><i>Rohith Krishnan Bala Krishnan<sup>1</sup>, Sebastian Voswinckel<sup>1</sup>, Theresa Reinhardt<sup>1</sup>, Viktor Wesselak<sup>1</sup>, Christoph Schmidt<sup>1</sup></i><br><sup>1</sup> Institut für Regenerative Energietechnik (Hochschule Nordhausen)                                                                                                                                                                                                                                                                                                                                                                          |
| 10:00 | PHOTOVOLTAIC HOSTING CAPACITY ASSESSMENT OF LOW-VOLTAGE GRIDS IN NORTHEAST ARGENTINA<br><i>Alexis Raul Gonzalez Mayans<sup>1</sup>, Jonathan Dario Masetto<sup>1</sup>, Giuliano Arns Rampinelli<sup>2</sup>, Carlos Alberto Cadena<sup>3</sup>, Manuel Caceres<sup>1</sup>, Andres Danilo Firman<sup>1</sup></i><br><sup>1</sup> Universidad Nacional del Nordeste; <sup>2</sup> Universidade Federal de Santa Catarina; <sup>3</sup> Universidad Nacional de Salta                                                                                                                                                                                                                                                                        |
| 10:15 | TOWARDS BETTER ENERGY TRANSITION MODELLING IN PACIFIC ISLAND COUNTRIES AND TERRITORIES<br><i>Edoardo Santagata<sup>1</sup>, Anna Bruce<sup>1</sup>, Iain MacGill<sup>1</sup></i><br><sup>1</sup> The University of New South Wales                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - MORNING

#### ORAL SESSION 16 - MICROGRIDS

**Room:** Sala de Reunião 3 (Room 3) | **Chair:** Prof. Dr. Paulo Carvalho (UFC - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | OPTIMIZING SMART HOME MICROGRID THROUGH DEMAND RESPONSE BASED ON MAMDANI FUZZY INFERENCE SYSTEM<br><i>Christelle Arielle Mbouteu Megaptche<sup>1</sup>, Sebastian Waita<sup>1</sup>, Peter Moses Musau<sup>2</sup>, Bernard Odhiambo Aduda<sup>1</sup></i><br><sup>1</sup> University of Nairobi; <sup>2</sup> South Eastern Kenya University                                                                                                                      |
| 09:15 | COMPARATIVE ASSESSMENT OF DISPATCH STRATEGIES FOR OPTIMIZING MICROGRID OPERATION FOR HYDROGEN PRODUCTION<br><i>Danielly Norberto Araújo<sup>1</sup>, Gabriel Lucas Nascimento Silva<sup>1</sup>, Danilo Pinchemel Cardoso Filho<sup>1</sup>, Heloísa Althoff<sup>2</sup>, André Fonseca<sup>1</sup></i><br><sup>1</sup> SENAI CIMATEC; <sup>2</sup> Petrogal Brasil                                                                                                |
| 09:30 | GRID IMPACT OF ELECTRIC VEHICLE AND SOLAR INTEGRATION: A CASE STUDY FROM STOCKHOLM COUNTY<br><i>Priscila Costa Nascimento, Salvatore Guccione, Silvia Trevisan</i><br>KTH Royal Institute of Technology                                                                                                                                                                                                                                                            |
| 09:45 | EXPERIMENTAL EVALUATION OF MICROGRIDS AS AN ALTERNATIVE FOR THE IMPROVEMENT OF POWER SUPPLY CONTINUITY IN SECONDARY DISTRIBUTION SYSTEMS<br><i>Pedro Ferreira Torres<sup>1</sup>, Guilherme da Silva Andrade<sup>1</sup>, Teddy Arturo Flores Meléndez<sup>1</sup>, João Tavares Pinho<sup>1</sup>, Roberto Zilles<sup>1</sup></i><br><sup>1</sup> Universidade de São Paulo                                                                                       |
| 10:00 | SIMULATION OF AN OFF-GRID ENERGY SYSTEM IN THE AMAZON: DEVELOPMENT OF A PYTHON-BASED OPEN-SOURCE TOOL FOR DECARBONIZATION THROUGH HYDROGEN AND COMPARISON WITH HOMER<br><i>Moritz End<sup>1</sup>, Daniel Odilio dos Santos<sup>2</sup>, Thorsten Schneiders<sup>1</sup>, Aline Kirsten Vidal de Oliveira<sup>2</sup>, Helena Flávia Napolini<sup>2</sup>, Ricardo Rüther<sup>2</sup></i><br><sup>1</sup> University of Applied Science Cologne; <sup>2</sup> UFSC |
| 10:15 | THE BARRIERS TO 100% RENEWABLE ISOLATED MINIGRIDS: WHY COMBUSTION GENERATORS STILL DOMINATE?<br><i>Daniel Odilio dos Santos, Helena Flávia Napolini, Lucas Rafael do Nascimento, Amanda Mendes Ferreira Gomes, Ricardo Rüther</i><br>Universidade Federal de Santa Catarina                                                                                                                                                                                        |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - MORNING

#### ORAL SESSION 17 - PVT & HYBRID SOLAR SYSTEMS

**Room:** Sala de Reunião 4 (Room 4) | **Chair:** Francisco Beltran (KTH - Sweden)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | DESIGN AND EVALUATION OF A NOVEL SOLAR-DRIVEN SUSTAINABLE POLYGENERATION SYSTEM BASED ON H <sub>2</sub> O-LIBR WORKING FLUID<br><u>Javier Alejandro Hernández Magallanes<sup>1</sup></u> , <u>Diana Alicia de Santiago Murillo<sup>1</sup></u> , <u>Salvador Tututi Ávila<sup>1</sup></u> , <u>Sanal Kozhiparambil<sup>1</sup></u><br><sup>1</sup> <u>Universidad Autónoma de Nuevo León</u>                                                               |
| 09:15 | REPRESENTATIVENESS OF AN EXPERIMENTAL PHOTOVOLTAIC-THERMAL PVT SYSTEM PROTOTYPE IN RELATION TO A RESIDENTIAL PVT SYSTEM OPERATING UNDER REAL CONDITIONS<br><u>Rafael Pereira da Cruz<sup>1</sup></u> , <u>Emanuel Moreira Palierini Ibrahim<sup>1</sup></u> , <u>Júlio César Passos<sup>1</sup></u><br><sup>1</sup> <u>Universidade Federal de Santa Catarina</u>                                                                                          |
| 09:30 | PHYSICAL MODELING OF PHOTOVOLTAIC-THERMAL COLLECTORS<br><u>Christian Wagner<sup>1</sup></u> , <u>Lukas Gaisberger<sup>1</sup></u> , <u>Bernhard Zettl<sup>1</sup></u><br><sup>1</sup> <u>University of Applied Sciences Upper Austria</u>                                                                                                                                                                                                                  |
| 09:45 | IMPROVING THE CHARACTERISTICS OF PHASE CHANGE MATERIAL FOR USE IN COOLING BIFACIAL SOLAR PANELS: A PRELIMINARY STUDY<br><u>Sam Honey<sup>1</sup></u> , <u>Darsh Shah<sup>1</sup></u> , <u>Bethan Charles<sup>1</sup></u> , <u>Maria Valero<sup>1</sup></u> , <u>Hind Saidani-Scott<sup>1</sup></u><br><sup>1</sup> <u>University of Bristol</u>                                                                                                            |
| 10:00 | ASSESSING THE PERFORMANCE OF SOLAR-BASED FAÇADE SOLUTIONS: A 2-YEAR EXPERIMENTAL STUDY<br><u>Asier Sanz Martínez<sup>1</sup></u> , <u>Raquel Fuente<sup>2</sup></u><br><sup>1</sup> <u>TECNALIA, Basque Research and Technology Alliance (BRTA)</u> ; <sup>2</sup> <u>Applied Mathematics, Faculty of Engineering, University of the Basque Country UPV/EHU</u>                                                                                            |
| 10:15 | THERMAL AND ELECTRICAL CHARACTERIZATION OF A NOVEL SPECTRAL BEAM SPLITTING LOW-CONCENTRATING PHOTOVOLTAIC THERMAL COLLECTOR<br><u>Rafael Alejandro García Ramos<sup>1</sup></u> , <u>Carlos Ivan Rivera Solorio<sup>1</sup></u> , <u>Miguel Angel Gijón Rivera<sup>1</sup></u> , <u>Christos N. Markides<sup>2</sup></u> , <u>Chandan Pandey<sup>2</sup></u><br><sup>1</sup> <u>Tecnologico de Monterrey</u> ; <sup>2</sup> <u>Imperial College London</u> |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - AFTERNOON

#### ORAL SESSION 18 - RELIABILITY OF PV SYSTEMS

**Room:** José de Alencar 4 (Room 5) | **Chair:** Dr. Lucas Rafael do Nascimento (Fotovoltaica/UFSC - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | LIFESPAN OF PV SYSTEMS OPERATING FOR OVER 30 YEARS IN HIGH-LATITUDE REGIONS<br><u>André Filipe Rodrigues Augusto</u> <sup>1</sup> , Emmanouil Psimopoulos <sup>1</sup> , Chiara Barretta <sup>2</sup> , Belferkous Brahim Anis <sup>2</sup> , Gernot Oreski <sup>2</sup><br><sup>1</sup> Dalarna University; <sup>2</sup> Polymer Competence Center Leoben                                                                                                                                                                                              |
| 14:15 | PERFORMANCE DEGRADATION OF MONO- AND MULTICRYSTALLINE SILICON PV MODULES IN RURAL GRID-CONNECTED SYSTEMS IN SOUTHERN BRAZIL<br><u>Adriano Moehlecke</u> <sup>1</sup> , Izete Zanesco <sup>1</sup> , João Victor Zanatta Britto <sup>1</sup> , Taila Cristiane Policarpi <sup>1</sup> , Moussa Ly <sup>1</sup> , Felipe Chini de Freitas <sup>1</sup> , Lucas Teixeira Caçapietra Pires da Silva <sup>1</sup><br><sup>1</sup> PUCRS - Pontifical Catholic University of Rio Grande do Sul                                                                |
| 14:30 | LONG-TERM PERFORMANCE ASSESSMENT OF MULTIPLE PHOTOVOLTAIC TECHNOLOGIES NEAR THE EQUATOR<br>Miguel Ángel Sevillano Bendezú <sup>1</sup> , Luis Angel Conde Mendoza <sup>2</sup> , Jose Ruben Angulo Abanto <sup>2</sup> , Juan de la Casa Higuera <sup>3</sup> , José María Ripalda <sup>1</sup> , Jan Amaru Palomino Töfflinger <sup>2</sup><br><sup>1</sup> Instituto de Micro y Nanotecnología; <sup>2</sup> Pontificia Universidad Católica del Perú; <sup>3</sup> Universidad de Jaén                                                               |
| 14:45 | HOTSPOT PATTERNS IN PHOTOVOLTAIC MODULES: CLASSIFICATION, IMPACTS AND MONITORING STRATEGIES<br><u>Vinicius Augusto Camatta Santana</u> <sup>1</sup> , Denio Alves Cassini <sup>1</sup> , Lawrence L. Kazmerski <sup>2</sup> , Antonia Sônia A.C. Diniz <sup>1</sup> , Cláudio Dias Campos <sup>1</sup><br><sup>1</sup> Pontifícia Universidade Católica de Minas Gerais; <sup>2</sup> University of Colorado Boulder                                                                                                                                    |
| 15:00 | LIFETIME ASSESSMENT OF PV INVERTERS USING MARCO-STARKEY THEORY AND NONLINEAR DAMAGE ACCUMULATION<br><u>Andrei Carvalho Ribeiro</u> <sup>1</sup> , Jorge Sebastian Morocho Jimenez <sup>1</sup> , José Cândido Silveira Santos Filho <sup>1</sup> , Pedro José dos Santos Neto <sup>1</sup> , João Pedro Carvalho Silveira <sup>1</sup> , Tércio André dos Santos Barros <sup>1</sup><br><sup>1</sup> UNICAMP                                                                                                                                            |
| 15:15 | POST-INSTALLATION EXPERIENCES OF RESIDENTIAL GRID-CONNECTED ROOFTOP PV USERS IN INDIA: AN EMPIRICAL SURVEY<br><u>Pratik Nagesh Joshi</u> <sup>1</sup> , Anand Bhalchandra Rao <sup>2</sup> , Rangan Banerjee <sup>3</sup><br><sup>1</sup> Ashank Desai Centre for Policy Studies (ADCPS), Indian Institute of Technology Bombay; <sup>2</sup> Centre for Technology Alternatives for Rural Areas (CTARA), Indian Institute of Technology Bombay; <sup>3</sup> Department of Energy Science and Engineering (DESE), Indian Institute of Technology Delhi |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - AFTERNOON

#### ORAL SESSION 19 - SOLAR RESOURCES, VARIABILITY, AND MODELING

**Room:** Sala de Reunião 1 (Room 1) | **Chair:** Dr. Andreas Kazantzidis (University of Patras - Greece)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | CLEAR SKY DETECTION MODELS: A COMPARATIVE ANALYSIS<br><u>Koryandder de Souza Ventura</u> <sup>1</sup> , <u>Manoel Henrique de Oliveira Pedrosa Filho</u> <sup>1</sup><br><sup>1</sup> Instituto Federal de Pernambuco - Campus Pesqueira                                                                                                                                                                                                       |
| 14:15 | ESTIMATING DAY-AHEAD SOLAR FORECAST ERRORS FROM SITE-SPECIFIC VARIABILITY<br><u>Alfred Jean-Philippe Lauret</u> <sup>1</sup> , <u>Josselin Le Gal La Salle</u> <sup>1</sup> , <u>Mathieu David</u> <sup>1</sup><br><sup>1</sup> University of La Réunion                                                                                                                                                                                       |
| 14:30 | ASSESSMENT OF THE ALBEDO INFLUENCE ON THE PERFORMANCE OF SOLAR TRANSPOSITION MODELS<br><u>Inti Piccioli</u> <sup>1</sup> , <u>Agustín Laguarda</u> <sup>1</sup> , <u>Gonzalo Abal</u> <sup>1</sup><br><sup>1</sup> Laboratorio de Energía Solar, Universidad de la República                                                                                                                                                                   |
| 14:45 | IMPACT OF DIFFUSE RADIATION MODELING ON REAR/FRONT RATIO ESTIMATION FOR BIFACIAL PV SYSTEMS<br><u>João Victor Furtado Frazão de Medeiros</u> <sup>1</sup> , <u>Janis Joplim Bezerra Galdino</u> <sup>1</sup> , <u>Rinaldo Oliveira de Melo</u> <sup>1</sup> , <u>Rodrigo Alonso-Suárez</u> <sup>2</sup> , <u>Olga de Castro Vilela</u> <sup>1</sup><br><sup>1</sup> Federal University of Pernambuco; <sup>2</sup> Universidad de la República |
| 15:00 | OPTIMAL SITE SELECTION FOR SOLAR POWER PLANTS THROUGH HYBRID MULTI-CRITERIA DECISION-MAKING<br><u>Aminreza Neshat</u> <sup>1</sup> , <u>Masoumeh Abed</u> <sup>2</sup> , <u>Mohammad Rahnema</u> <sup>1</sup><br><sup>1</sup> LaSalle College Vancouver, Vancouver, BC, Canada; <sup>2</sup> Department of GIS/RS, Science and Research Branch, Islamic Azad University, Tehran, Iran                                                          |
| 15:15 | PERFORMANCE ANALYSIS OF ADJUSTABLE-TILT TILTED SINGLE-AXIS VERSUS HORIZONTAL SINGLE-AXIS TRACKERS: A BRAZILIAN PV PLANT CASE STUDY<br><u>Gustavo Fraidenraich</u> <sup>1</sup> , <u>Eslam Mahmoudi</u> <sup>1</sup> , <u>João Lucas de Souza Silva</u> <sup>1</sup> , <u>Denis G. Fantinato</u> <sup>1</sup> , <u>Tárcio André dos Santos Barros</u> <sup>1</sup><br><sup>1</sup> Faculdade de Engenharia Elétrica e de Computação da UNICAMP  |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - AFTERNOON

#### ORAL SESSION 20 - CIRCULAR ECONOMY AND LCA

**Room:** Sala de Reunião 2 (Room 2) | **Chair:** Dr. Dave Renne (ISES)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | RECYCLING OF SOLAR PANELS: CHALLENGES AND SOLUTIONS FOR A SUSTAINABLE FUTURE<br><i>Marcio William Celestino dos Santos<sup>1</sup>, William Neves da Silva<sup>2</sup>, Vinnya Freitas Soares<sup>1</sup>, Wanessa Maria Araújo Paulo<sup>1</sup>, Francisca Aline Pereira Maciel Oliveira<sup>1</sup>, Pedro Ribeiro Neris<sup>1</sup></i><br><sup>1</sup> Universidade de Fortaleza - UNIFOR; <sup>2</sup> Universidade Federal de Santa Catarina - UFSC |
| 14:15 | LIFE CYCLE CARBON FOOTPRINT ASSESSMENT OF A LOW-CARBON SOLAR PV TRACKER<br><i>André Martins Silveira<sup>1</sup>, Henrique Leonardo Maranduba<sup>1</sup>, Mohit Gupta<sup>1</sup></i><br><sup>1</sup> Nextracker Inc.                                                                                                                                                                                                                                     |
| 14:30 | PERFORMANCE OF SECOND LIFE PV MODULES: TECHNICAL AND EXPERIMENTAL ANALYSIS<br><i>Sabrina Rodrigues Ebert<sup>1</sup>, Anelise Medeiros Pires<sup>1</sup>, Marinna Pivatto<sup>1</sup>, Marília Braga<sup>1</sup>, João Paulo Alves Veríssimo<sup>1</sup>, Thamires Alves Silva<sup>1</sup>, Helena Flávia Naspolini<sup>1</sup>, Ricardo Rüther<sup>1</sup></i><br><sup>1</sup> Fotovoltaica/UFSC Laboratory                                               |
| 14:45 | FROM BUILDING TO DISTRICT: WHOLE-LIFE GLOBAL WARMING POTENTIAL OF A LOW-ENERGY RESIDENTIAL BLOCK AND SURROUNDING SITE WORKS<br><i>Wan Xiaoqi<sup>1</sup>, Natalia Muszynska<sup>1</sup>, Maryam Fakhari<sup>1</sup>, Ricardo Bernardo<sup>1</sup></i><br><sup>1</sup> Lund University                                                                                                                                                                      |
| 15:00 | ECONOMIC FEASIBILITY OF PV SELF-CONSUMPTION SCENARIOS IN PERU: A MULTI-REGIONAL ANALYSIS USING EXPERIMENTAL PERFORMANCE DATA<br><i>Vlada Pleshcheva<sup>1</sup>, Muriel Berthomieu<sup>1</sup>, Jose Ruben Angulo Abanto<sup>1</sup>, Rafael Jesus Vidal Coral<sup>1</sup>, Jan Amaru Palomino Töfflinger<sup>1</sup></i><br><sup>1</sup> Pontificia Universidad Católica del Perú                                                                         |
| 15:15 | ANALYSIS OF GEOGRAPHICAL SMOOTHENING AND VARIABILITY REDUCTION IN A CLUSTER OF SOLAR PV PLANTS<br><i>Rhythm Singh<sup>1</sup>, Manoj Singh Bisht<sup>1</sup></i><br><sup>1</sup> Indian Institute of Technology Roorkee                                                                                                                                                                                                                                    |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - AFTERNOON

#### ORAL SESSION 21 - URBAN & DISTRICT ENERGY APPLICATIONS

**Room:** Sala de Reunião 3 (Room 3) | **Chair:** Chiel Boonstra (ISES)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | ENERGY EFFICIENCY IN URBAN SPACES: A COMPARATIVE ANALYSIS BETWEEN TRADITIONAL PHOTOVOLTAIC SYSTEMS AND SOLAR TREES<br><u>Lohane Barcelos Palaoro<sup>1</sup></u> , Ana Carolina Calenzani Marinho <sup>1</sup> , Anderson Azevedo Fraga <sup>1</sup> , Luiz Virgílio Bozzi Aranda <sup>2</sup> , Henrique Ferrario Traba <sup>1</sup> , Helder Roberto de Oliveira Rocha <sup>1</sup> , Marcelo Eduardo Vieira Segatto <sup>1</sup><br><sup>1</sup> Federal University of Espírito Santo; <sup>2</sup> Federal Institute of Espírito Santo |
| 14:15 | SOLAR-ENABLED COMMUNITY ENERGY SYSTEMS: A MODULAR NEIGHBORHOOD APPROACH TO NET-POSITIVE NEIGHBORHOODS<br><u>Caroline Hachem-Vermette</u><br>Concordia University                                                                                                                                                                                                                                                                                                                                                                           |
| 14:30 | DIGITALIZING SOLAR ENERGY INTEGRATION FOR SUSTAINABLE URBAN PRECINCT REDEVELOPMENT<br><u>Chengyang Liu<sup>1</sup></u> , Rebecca Yang <sup>2</sup> , Chen Liu <sup>1</sup> , Ali Moradi Amani <sup>1</sup> , Yusen Zhao <sup>1</sup> , Jiatong Zhang <sup>1</sup> , Nirajan Shiwakoti <sup>1</sup><br><sup>1</sup> RMIT University; <sup>2</sup> The University of Melbourne                                                                                                                                                               |
| 14:45 | GLOBAL WARMING POTENTIAL OF CITY DISTRICTS - A CASE STUDY IN SWEDEN<br>Jorik Wolters <sup>1</sup> , Simon Kallioinen <sup>2</sup> , Maryam Fakhari <sup>1</sup> , Johan Holmqvist <sup>3</sup> , <u>Luís Ricardo Pantoja Coutinho Bernardo<sup>1</sup></u><br><sup>1</sup> Lund University; <sup>2</sup> Fojab Architects; <sup>3</sup> The Swedish Environmental Institute                                                                                                                                                                |
| 15:00 | INTEGRATION OF PHOTOVOLTAIC SYSTEMS IN UNIVERSITY BUILDINGS: A RETROFIT PROJECT AT THE TECHNOLOGY CENTER OF THE FEDERAL UNIVERSITY OF RIO DE JANEIRO<br><u>Annelys Machado Schetinger<sup>1</sup></u> , Fernanda Ferreira Metello de Oliveira <sup>1</sup> , Nathalia Gomes de Araújo <sup>1</sup> , Isabella Teixeira Linhares <sup>1</sup> , Rafael Barbosa Guimarães Monteiro <sup>1</sup> , Robson Francisco da Silva Dias <sup>1</sup><br><sup>1</sup> Federal University of Rio de Janeiro                                           |
| 15:15 | BUILDING- AND DISTRICT-LEVEL RESILIENCE WITH SOLAR PV AND STORAGE: INSIGHTS FROM SWEDISH PROSUMERS<br><u>Annisa Dhini Septi Kinasih<sup>1</sup></u> , Amir Vadiee <sup>1</sup> , Allan Hawas <sup>1</sup> , Fredrik Wallin <sup>1</sup><br><sup>1</sup> Mälardalen University                                                                                                                                                                                                                                                              |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### WEDNESDAY - 05/11/2025 - AFTERNOON

#### ORAL SESSION 22 - BUILDINGS, HEAT PUMPS & ENERGY MANAGEMENT

**Room:** Sala de Reunião 4 (Room 4) | **Chair:** Prof. Dr. Samuel Luna de Abreu (IFSC - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | SOLAR HEATING WITH SEASONAL STORAGE IN BRACHT: CONSTRUCTION, INITIAL OPERATION AND NIGHT-TIME COOLING AGAINST STAGNATION<br><u>Christoph Schmelzer</u> <sup>1</sup> , <u>Paul Volk</u> <sup>1</sup> , <u>Oleg Kusyy</u> <sup>1</sup> , <u>Janybek Orozaliev</u> <sup>1</sup> , <u>Ulrike Jordan</u> <sup>1</sup> , <u>Klaus Vajen</u> <sup>1</sup><br><sup>1</sup> University of Kassel, Institute for Thermal Energy Engineering                                                                        |
| 14:15 | DAY-AHEAD PREDICTIVE CONTROL OF HEAT PUMP AND ENERGY STORAGE SYSTEMS WITH INTEGRATED PHOTOVOLTAICS<br><u>Mustapha Habib</u> <sup>1</sup> , <u>Qian Wang</u> <sup>1</sup> , <u>Katharina Lisa Steib</u> <sup>1</sup><br><sup>1</sup> KTH Royal Institute of Technology                                                                                                                                                                                                                                    |
| 14:30 | DECARBONIZING BUILDING HEATING THROUGH SOLAR THERMAL ENERGY AND LATENT HEAT STORAGE<br><u>Halime Omur</u> <sup>1</sup> , <u>Khamid Mahkamov</u> <sup>2</sup> , <u>Gülfeza Kardas</u> <sup>1</sup> , <u>İbrahim SÜDAŞ</u> <sup>3</sup> , <u>Burcu Koçak</u> <sup>1</sup> , <u>Filiz HOPLAMAZ</u> <sup>1</sup> , <u>Fatma Alma</u> <sup>1</sup> , <u>Irina Mahkamov</u> <sup>2</sup><br><sup>1</sup> Çukurova University; <sup>2</sup> Northumbria University; <sup>3</sup> Barış Enerji Sistemleri A.Ş.   |
| 14:45 | TECHNO-ECONOMIC EVALUATION OF PVT-SOURCED HEAT PUMP SYSTEMS: CAN SOLAR COMPETE WITH AIR AND GROUND IN COLD CLIMATES?<br><u>Francisco Beltran</u> <sup>1</sup> , <u>Nelson Sommerfeldt</u> <sup>1</sup> , <u>Hatef Madani</u> <sup>1</sup><br><sup>1</sup> KTH Royal Institute of Technology                                                                                                                                                                                                              |
| 15:00 | MODELLING AND IMPLEMENTATION OF ICE STORAGE SYSTEMS: CASE STUDIES AND APPLICATIONS<br><u>Nayrana Daborer-Prado</u> <sup>1</sup> , <u>Christian Wagner</u> <sup>1</sup><br><sup>1</sup> University of Applied Sciences Upper Austria                                                                                                                                                                                                                                                                      |
| 15:15 | MAKE EVERY KILOWATT COUNT: MODELLING SOLAR POWER INTEGRATION WITH THERMAL STORAGE AND HEATING ELECTRIFICATION<br><u>Ueli Schilt</u> <sup>1</sup> , <u>Somesh Vijayananda</u> <sup>1</sup> , <u>Sarah Schneeberger</u> <sup>1</sup> , <u>Santhosh Iyyakkunne</u> <sup>1</sup> , <u>Pascal Marc Vecsei</u> <sup>1</sup> , <u>Philipp Schuetz</u> <sup>1</sup><br><sup>1</sup> Competence Centre for Thermal Energy Storage, School of Engineering and Architecture, Lucerne University of Applied Sciences |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - MORNING

#### ORAL SESSION 23 - MODELING & SIMULATION OF SOLAR SYSTEMS I

**Room:** José de Alencar 1-3 (Auditorium) | **Chair:** Prof. Dr. Manoel Henrique de Oliveira Pedrosa Filho (IFPE - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | DYNAMIC MODEL PARAMETER ESTIMATION IN PHOTOVOLTAIC MODULES<br><u>Patricio Valdivia-Lefort</u><br>USACH                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 09:15 | HIGH FIDELITY MODEL OF A THREE-PHASE MULTI-STRING SOLAR INVERTER<br><u>Julio Romel Martinez Bolanos</u> <sup>1</sup> , Jose Cesar de Souza Almeida Neto <sup>2</sup> , Alex Renan Arrifano Manito <sup>1</sup> , Marcelo Pinho Almeida <sup>1</sup> , Gilberto Figueiredo Pinto Filho <sup>3</sup> , Pedro Ferreira Torres <sup>1</sup> , João Tavares Pinho <sup>1</sup> , Roberto Zilles <sup>1</sup><br><sup>1</sup> University of Sao Paulo; <sup>2</sup> Mackenzie Presbyterian University; <sup>3</sup> Fluminense Federal University |
| 09:30 | MACHINE LEARNING MODELS FOR PHOTOVOLTAIC MODULES OPERATING TEMPERATURE ESTIMATION IN SEMIARID CLIMATE<br><u>Antonio Wellington Dantas da Costa</u> <sup>1</sup> , Leticia de Oliveira Santos <sup>1</sup> , Paulo Cesar Marques de Carvalho <sup>1</sup><br><sup>1</sup> Federal University of Ceará                                                                                                                                                                                                                                        |
| 09:45 | COMPARISON OF TEMPERATURE MODELS FOR BIFACIAL PHOTOVOLTAIC MODULES IN GERMANY AND BRAZIL<br><u>Oliver Pfeiffer</u> <sup>1</sup> , Aline Kirsten Vidal de Oliveira <sup>2</sup> , Marília Braga <sup>2</sup> , Helena Flávia Naspolini <sup>2</sup> , Ulf Blieske <sup>1</sup> , Ricardo Rüther <sup>2</sup><br><sup>1</sup> TH Köln; <sup>2</sup> Universidade Federal de Santa Catarina                                                                                                                                                    |
| 10:00 | THERMAL MODELING OF BIFACIAL PV MODULES ON HIGH-ALBEDO SURFACES<br>Aline Kirsten Vidal de Oliveira, Marília Braga, <u>Isadora Maciel Queiroz</u> , Helena Flávia Naspolini, Ricardo Rüther<br>Universidade Federal de Santa Catarina                                                                                                                                                                                                                                                                                                        |
| 10:15 | PHOTOVOLTAIC SENSITIVITY ANALYSIS OF DOUBLE-DIODE MODEL<br><u>Gustavo Henrique de Paula Santos</u> <sup>1</sup> , Elmer Pablo Tito Cari <sup>2</sup><br><sup>1</sup> Federal Institute of Education, Science and Technology of Sao Paulo; <sup>2</sup> University of Sao Paulo                                                                                                                                                                                                                                                              |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - MORNING

#### ORAL SESSION 24 - THERMAL COMFORT & DAYLIGHT

**Room:** José de Alencar 4 (Room 5) | **Chair:** Prof. Dr. Ana Lígia Papst de Abreu (IFSC - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | LINKING INSOLATION SHADOW RATIO WITH UTCI: MORPHOLOGICAL INSIGHTS INTO OUTDOOR THERMAL COMFORT<br><u>Song Jie</u> <sup>1</sup> , <u>Liu Yu</u> <sup>2</sup> , <u>Ren Juan</u> <sup>3</sup> , <u>Liu Bo</u> <sup>4</sup> , <u>Yupeng Jiang</u> <sup>1</sup> , <u>Yirong Li</u> <sup>2</sup> , <u>Lei Zhuo</u> <sup>2</sup> , <u>Siyi Liu</u> <sup>2</sup><br><sup>1</sup> School of Mechanical Engineering, Northwestern Polytechnical University; <sup>2</sup> School of Mechanics and Transportation Engineering, Northwestern Polytechnical University; <sup>3</sup> School of Architecture, Chang'an University; <sup>4</sup> School of Architecture, Xi'an University of Architecture and Technology |
| 09:15 | SUNLIGHT AT HOME: EXPLORING PREFERENCES AND THEIR IMPACT ON BUILDING DESIGN<br><u>Agnieszka Czachura</u> , <u>Niko Gentile</u> , <u>Jouri Kanters</u> , <u>Maria Wall</u><br>Lund University                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 09:30 | MODEL PREDICTIVE CONTROL FOR SOLAR BLINDS: BALANCING PHOTOVOLTAIC POWER GENERATION AND VISUAL COMFORT<br><u>Nima Monghasemi</u> <sup>1</sup> , <u>Mohammad Mansourian</u> <sup>2</sup> , <u>Amir Vadiie</u> <sup>1</sup> , <u>Avinash Renuke</u> <sup>1</sup> , <u>Annisa Dhini Septi Kinasih</u> <sup>1</sup><br><sup>1</sup> Mälardalen University; <sup>2</sup> Azad University                                                                                                                                                                                                                                                                                                                       |
| 09:45 | STANDARDIZED SYSTEM OF THREE-DIMENSIONAL STEEL OR ALUMINUM PHOTOVOLTAIC AND PHOTOTHERMAL STRUCTURES<br><u>Perla Yanet Rosales Medina</u> <sup>1</sup> , <u>Yuri Nahmad Molinari</u> <sup>1</sup> , <u>Sylvia Meimaridou Rola</u> <sup>2</sup><br><sup>1</sup> Universidad Autónoma de San Luis Potosí; <sup>2</sup> Universidad Federal de Rio de Janeiro                                                                                                                                                                                                                                                                                                                                                |
| 10:00 | IMPACT OF BUILDING MORPHOLOGICAL INDICATORS ON SOLAR POTENTIAL: VALIDATION ANALYSIS OF VERTICAL OBSTRUCTION FACTOR (VOF)<br><u>Yirong Li</u> <sup>1</sup> , <u>Liu Yu</u> <sup>1</sup> , <u>Lei Zhuo</u> <sup>1</sup> , <u>Siyi Liu</u> <sup>1</sup> , <u>Song Jie</u> <sup>2</sup><br><sup>1</sup> Northwestern Polytechnical University; <sup>2</sup> Northwestern Polytechnical University                                                                                                                                                                                                                                                                                                            |
| 10:15 | MULTI-OBJECTIVE OPTIMIZATION OF RESIDENTIAL BUILDING DESIGN FOR IMMIGRANT RESETTLEMENT IN THE TIBETAN PLATEAU: A CASE STUDY OF ANKANG COMMUNITY<br><u>Siyi Liu</u> <sup>1</sup> , <u>Liu Yu</u> <sup>1</sup> , <u>Lei Zhuo</u> <sup>1</sup> , <u>Yirong Li</u> <sup>1</sup> , <u>Song Jie</u> <sup>2</sup> , <u>Ling Ma</u> <sup>3</sup><br><sup>1</sup> Northwestern Polytechnical University; <sup>2</sup> Northwestern Polytechnical University; <sup>3</sup> Power China Northwest Engineering Corporation Limited                                                                                                                                                                                   |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - MORNING

#### ORAL SESSION 25 - UNCERTAINTY & MEASUREMENT ACCURACY IN SOLAR RESOURCE

**Room:** Sala de Reunião 1 (Room 1) | **Chair:** Dr. Samira Azevedo (ISI-ER - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | VALIDATION OF AN ERYTHEMA-WEIGHTED UV MODEL USING BROADBAND SOLAR IRRADIANCE MEASUREMENTS FROM ELEVEN U.S. SITES<br><u>Agustín Laguarda</u> <sup>1</sup> , Aron Habte <sup>2</sup> , Gonzalo Abal <sup>1</sup> , Manajit Sengupta <sup>2</sup><br><sup>1</sup> Universidad de la República; <sup>2</sup> National Renewable Energy Laboratory                                                                                                                                                                                                                                                     |
| 09:15 | EVALUATION OF AEROSOL PRODUCTS TO FEED BRAZIL'S SOLAR ENERGY RESOURCE ASSESSMENT<br><u>Fernando Ramos Martins</u> <sup>1</sup> , Eduardo Weide Luiz <sup>1</sup> , Andre Rodrigues Goncalves <sup>2</sup> , Rodrigo Santos Costa <sup>2</sup> , Enio Bueno Pereira <sup>2</sup><br><sup>1</sup> Universidade Federal de São Paulo; <sup>2</sup> Instituto Nacional de Pesquisas Espaciais                                                                                                                                                                                                         |
| 09:30 | SPECTRORADIOMETER INTER-COMPARISON OF PAR, UV AND ALL WAVELENGTH WITH QUANTUM SENSORS<br><u>Daniele Conceição dos Santos</u> <sup>1</sup> , <u>Sylvio Luiz Mantelli Neto</u> <sup>1</sup> , Marília Braga <sup>1</sup> , Thamires Alves Silva <sup>1</sup> , Ricardo Rüther <sup>1</sup><br><sup>1</sup> Fotovoltaica UFSC                                                                                                                                                                                                                                                                        |
| 09:45 | UNCERTAINTIES IN PHOTOSYNTHETICALLY ACTIVE RADIATION (PAR) EXPERIMENTAL DATA COLLECTED IN BRAZIL AND SPAIN<br><u>Andre Rodrigues Goncalves</u> <sup>1</sup> , Fernando Ramos Martins <sup>2</sup> , Rodrigo Santos Costa <sup>1</sup> , Rita Ximena Valenzuela Balderrama <sup>3</sup> , Luiz Fernando Zarzalejo <sup>3</sup> , Guilherme Baggio Martins Machado <sup>1</sup> , Marcelo Pizzuti Pes <sup>1</sup><br><sup>1</sup> INPE; <sup>2</sup> UNIFESP; <sup>3</sup> CIEMAT                                                                                                                  |
| 10:00 | TEMPORAL ANALYSIS OF THE SOLAR SPECTRUM IN NATAL/RN AND ITS INFLUENCE ON THE PERFORMANCE OF PHOTOVOLTAIC SYSTEMS<br><u>Alan Rodrigues de Sousa</u> <sup>1</sup> , Samira de Azevedo Santos Emiliavaca <sup>1</sup> , Camila Fernanda Cardoso Teixeira <sup>1</sup> , Amanda Gomes Barboza <sup>1</sup> , Dayane Cynthia Pinto Oliveira <sup>1</sup> , Nicholas Medeiros Lopes <sup>1</sup> , Gabriela Rocha Alves da Silva <sup>1</sup> , Ana Cleide Bezerra Amorim <sup>1</sup> , João Vítor Fonseca de Mendonça <sup>1</sup><br><sup>1</sup> Instituto SENAI de Inovação em Energias Renováveis |
| 10:15 | EFFECTS OF INVERTER CLIPPING ON SOLAR POWER VARIABILITY<br><u>Mónica Zamora Zapata</u> <sup>1</sup> , Eduardo Luccini <sup>2</sup> , Mauricio Trigo-Gonzalez <sup>3</sup> , Jorge Rabanal-Arabach <sup>3</sup><br><sup>1</sup> Universidad de Chile; <sup>2</sup> CONICET-CEPROCOR; <sup>3</sup> Universidad de Antofagasta (SERC-Chile)                                                                                                                                                                                                                                                          |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - MORNING

#### ORAL SESSION 26 - AGRIPV

**Room:** Sala de Reunião 2 (Room 2) | **Chair:** Prof. Dr. Roberto Zilles (USP - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | USING AGRIVOLTAIC SYSTEMS TO GENERATE INCOME IN AREAS SUSCEPTIBLE TO DESERTIFICATION<br><u>Gabriel Marçal da Cunha Pereira Carvalho</u> <sup>1</sup> , Fernando Luiz Marcelo Antunes <sup>2</sup> , Menaouar Berrehil El Kattel <sup>2</sup> , Ingo Stadler <sup>3</sup><br><sup>1</sup> Consiglio Nazionale delle Ricerche; <sup>2</sup> Universidade Federal do Ceará; <sup>3</sup> TH Köln                                                                                                                                                                                                                                                                                                                 |
| 09:15 | PERFORMANCE ANALYSIS OF A PVT-GSHP-BTES SYSTEM WITH NOCTURNAL AEROTHERMAL COLLECTION IN AGRICULTURAL APPLICATIONS<br><u>Abel Climente García</u> <sup>1</sup> , Muhammad Talha Jahangir <sup>1</sup> , Iván Patricio Acosta Pazmiño <sup>2</sup> , Damu Murali <sup>2</sup> , Stefano Benni <sup>3</sup> , Francesco Tinti <sup>3</sup> , João Gomes <sup>2</sup> , Bassant Hany Mousa <sup>4</sup><br><sup>1</sup> MG Sustainable Engineering AB; <sup>2</sup> University of Gävle; <sup>3</sup> University of Bologna; <sup>4</sup> Ain Shams University                                                                                                                                                    |
| 09:30 | COMPUTATIONAL MODELING OF A SMALL-SCALE AGRIVOLTAIC SYSTEM IN A POULTRY FARMING FACILITY<br><u>Atos Apollo Silva Borges</u> <sup>1</sup> , Thiago Miranda Soares Rocha <sup>2</sup> , Juan de Aguiar Gonçalves <sup>1</sup> , Italo Fernandes e Silva <sup>2</sup><br><sup>1</sup> Universidade Estadual do Piauí; <sup>2</sup> Cruze Energia e Engenharia                                                                                                                                                                                                                                                                                                                                                    |
| 09:45 | DEVELOPMENT OF AN INTEGRATED MODELING APPROACH TO EVALUATE THE EFFECTS OF SHADING ON ALFALFA GROWTH IN FIXED AGRIVOLTAIC SYSTEMS<br><u>Gabriel Marçal da Cunha Pereira Carvalho</u> <sup>1</sup> , Michele Moretta <sup>2</sup> , Riccardo Rossi <sup>2</sup> , Marco Moriondo <sup>1</sup> , Luisa Leolini <sup>2</sup> , Gloria Padovan <sup>2</sup> , Aldo Dal Prà <sup>1</sup> , Giuseppe Mario Lanini <sup>1</sup> , Enrico Palchetti <sup>2</sup> , Giovanni Argenti <sup>2</sup> , Marco Bindi <sup>2</sup><br><sup>1</sup> Institute of Bioeconomy of the National Research Council (CNR-IBE); <sup>2</sup> Department of Agriculture, Food, Environment and Forestry (DAGRI), University of Florence |
| 10:00 | DESIGN AND IMPLEMENTATION OF A MULTISENSOR MONITORING SYSTEM FOR A PILOT AGRIVOLTAIC INSTALLATION IN BRAZIL<br><u>Amanda Mendes Ferreira Gomes</u> <sup>1</sup> , Laís Cassanta Vidotto <sup>1</sup> , Marília Braga <sup>1</sup> , Victória Maschio Chaga <sup>1</sup> , Thamires Alves Silva <sup>1</sup> , Ricardo Rüther <sup>1</sup><br><sup>1</sup> Universidade Federal de Santa Catarina                                                                                                                                                                                                                                                                                                              |
| 10:15 | COMPARISON BETWEEN AGRIPV SIMULATION AND FIELD DATA: SOYBEAN CASE<br><u>Ricardo Nery de Castro</u> <sup>1</sup> , Victor Eduardo Cauvilla de Oliveira <sup>1</sup> , Lucas Del Mouro <sup>1</sup><br><sup>1</sup> Flextronics Instituto de Tecnologia                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - MORNING

#### ORAL SESSION 27 - EMERGING PV MATERIALS & DEVICES

**Room:** Sala de Reunião 3 (Room 3) | **Chair:** Prof. Dr. Adriano Moehleck (PUC-RS - Brazil)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | <p>KESTERITE AS WORKING BODY FOR EMERGING PHOTOVOLTAICS<br/><u>Larissa de Sousa Mendonça</u><sup>1</sup>, Francisco Marcone Lima<sup>1</sup>, Vanja Fontenele Nunes<sup>1</sup>, João Pedro Santana Mota<sup>1</sup>, Antonio Sergio Bezerra Sombra<sup>1</sup>, Mona Lisa Moura de Oliveira<sup>2</sup>, Francisco Olimpio Moura Carneiro<sup>3</sup>, Carla Freitas de Andrade<sup>1</sup>, Francisco Nivaldo Aguiar Freire<sup>1</sup><br/><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade Estadual do Ceará; <sup>3</sup> Universidade da Integração Internacional da Lusofonia Afro-Brasileira</p>                                                                                                                                                                                                                          |
| 09:15 | <p>PERFORMANCE SIMULATION OF PEROVSKITE SOLAR CELL WITH Ti<sub>3</sub>C<sub>2</sub>TX MXENE AS THE HTL<br/><u>Margdaline Ligavo</u><sup>1</sup>, Sebastian Waita<sup>1</sup>, Francis Wanjala Nyongesa<sup>1</sup>, Mmantsae Diale<sup>2</sup><br/><sup>1</sup> University of Nairobi; <sup>2</sup> University of Pretoria</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 09:30 | <p>EARLY AND ABRUPT DEGRADATION OF CIGS SYSTEMS DEPLOYED IN DIVERSE CLIMATIC CONDITIONS<br/><u>Jose Ruben Angulo Abanto</u><sup>1</sup>, Michael Anthony García Huamani<sup>1</sup>, Dante Alberto Mendoza Aucaruri<sup>1</sup>, Juan de la Casa Higuera<sup>2</sup>, Jan Amaru Palomino Töfflinger<sup>1</sup><br/><sup>1</sup> Pontificia Universidad Católica del Perú; <sup>2</sup> Universidad de Jaén</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 09:45 | <p>A STUDY INTO THE OPTOELECTRONIC PROPERTY OF Bi<sub>2</sub>+<math>\delta</math>Cr(TM)O<sub>6</sub>+X (TM = Fe, Mn) ON PROSPECTIVE OF PHOTOVOLTAIC APPLICATION<br/><u>Vikas N P</u><sup>1</sup>, Ravi P. Srivastava<sup>2</sup>, Amritendu Roy<sup>1</sup><br/><sup>1</sup> Indian Institute of Technology Bhubaneswar; <sup>2</sup> Indian Institute of Technology Jodhpur</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10:00 | <p>SYSTEM PERFORMANCE EVALUATION OF THREE PV TECHNOLOGIES ACROSS FIVE CLIMATIC ZONES IN PERU<br/><u>Jose Ruben Angulo Abanto</u><sup>1</sup>, Luis Angel Conde Mendoza<sup>1</sup>, Arturo Berastain<sup>1</sup>, Michael Anthony García Huamani<sup>1</sup>, Rafael Jesus Vidal Coral<sup>1</sup>, Juan de la Casa Higuera<sup>2</sup>, Jan Amaru Palomino Töfflinger<sup>1</sup><br/><sup>1</sup> Pontificia Universidad Católica del Perú; <sup>2</sup> Universidad de Jaén</p>                                                                                                                                                                                                                                                                                                                                                                     |
| 10:15 | <p>ENHANCED PHOTOVOLTAIC PERFORMANCE VIA CACUSI<sub>4</sub>O<sub>10</sub> DEPOSITION ON DYE-SENSITIZED TiO<sub>2</sub> THIN FILMS<br/><u>Felipe Rodrigues da Silva</u><sup>1</sup>, <u>Joao Dionizio de Melo Neto</u><sup>1</sup>, Handerson José dos Prazeres<sup>2</sup>, William Neves da Silva<sup>3</sup>, João Pedro Santana Mota<sup>1</sup>, Vanja Fontenele Nunes<sup>1</sup>, Paulo Herbert Franca Maia Junior<sup>1</sup>, Antônio Cleibo dos Santos Júnior<sup>1</sup>, Rodrigo Franco Cavalcante<sup>4</sup>, Francisco Marcone Lima<sup>1</sup>, Ana Fabíola Leite Almeida<sup>1</sup>, Francisco Nivaldo Aguiar Freire<sup>1</sup><br/><sup>1</sup> Federal University of Ceará; <sup>2</sup> Federal University of Rio Grande do Norte; <sup>3</sup> Federal University of Santa Catarina; <sup>4</sup> Federal Institute of Ceará</p> |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - MORNING

#### ORAL SESSION 28 - SOLAR THERMAL APPLICATIONS AND STORAGE

**Room:** Sala de Reunião 4 (Room 4) | **Chair:** Prof. Dr. Jianhua Fan (DTU - Denmark)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09:00 | EVALUATION OF A PV+THERMOELECTRIC HEAT STORAGE SYSTEM FOR SUPPLYING DOMESTIC HOT WATER<br><u>Vicente Alonso Carrera González<sup>1</sup></u> , <u>Jose Miguel Cardemil<sup>1</sup></u><br><sup>1</sup> Pontificia Universidad Católica de Chile                                                                                                                                                                                                                                                                                                                                    |
| 09:15 | ALUMINIUM AS A MEANS FOR CHEMICALLY STORING AND TRANSPORTING RENEWABLE ENERGIES<br><u>Michel Yves Haller<sup>1</sup></u> , <u>Yvonne Isabell Baeuerle<sup>1</sup></u> , <u>Miren Agote Aran<sup>2</sup></u> , <u>Jan Hüppi<sup>1</sup></u> , <u>Erik Leukens<sup>1</sup></u> , <u>Eline Willems<sup>3</sup></u> , <u>Andreas Häberle<sup>1</sup></u><br><sup>1</sup> SPF Institute for Solar Technology - Eastern Switzerland University of Applied Sciences (OST); <sup>2</sup> UMTec - Eastern Switzerland University of Applied Sciences (OST); <sup>3</sup> Pré Sustainability |
| 09:30 | ENHANCING OF THERMAL PERFORMANCE OF SOLAR-POWERED RO DESALINATION SYSTEM USING NANOFUIDS<br><u>Azizboy Khaitmukhamedov<sup>1</sup></u> , <u>Jasurjon Akhatov<sup>1</sup></u> , <u>Tukhtamurod Juraev<sup>1</sup></u> , <u>Murodbek Kuralov<sup>1</sup></u><br><sup>1</sup> Physical-Technical Institute of Uzbekistan Academy of Sciences                                                                                                                                                                                                                                          |
| 09:45 | ANALYSIS OF THE ROLE OF THERMAL ENERGY STORAGE IN A SOLAR-DRIVEN POLYGENERATION SYSTEM FOR A DAIRY INDUSTRY<br><u>Eduardo A. Pina<sup>1</sup></u> , <u>Luis M. Serra<sup>1</sup></u> , <u>M. Naveed Arif<sup>1</sup></u> , <u>Miguel A. Lozano<sup>1</sup></u> , <u>Ana Lázaro<sup>1</sup></u><br><sup>1</sup> Universidad de Zaragoza                                                                                                                                                                                                                                             |
| 10:00 | SCALABILITY OF THE ENVIRONMENTAL IMPACTS OF SEASONAL THERMAL ENERGY STORAGE: AN APPROACH TO EXTRAPOLATE THE GLOBAL WARMING POTENTIAL<br><u>Richard Lüchinger<sup>1</sup></u> , <u>Pauline Fuchs<sup>2</sup></u> , <u>Jörg Worlitschek<sup>1</sup></u> , <u>Philipp Schuetz<sup>1</sup></u> , <u>Heimo Walter<sup>2</sup></u><br><sup>1</sup> Lucerne University of Applied Sciences and Arts; <sup>2</sup> TU Wien                                                                                                                                                                 |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - AFTERNOON

#### ORAL SESSION 29 - THERMAL STORAGE

**Room:** José de Alencar 4 (Room 5) | **Chair:** Prof. Dr. Halime Paksoy (Çukurova University - Turkey)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | CONTROL OPTIMIZATION OF A LATENT THERMAL ENERGY STORAGE - HEAT PUMP SYSTEM FOR SPACE HEATING IN NORDIC CLIMATE<br><u>Aditya Singh Suswal</u> <sup>1</sup> , Saman Nimali Gunasekara <sup>1</sup> , Justin Chiu <sup>1</sup> , Mustapha Habib <sup>1</sup> , Qian Wang <sup>1</sup><br><sup>1</sup> KTH Royal Institute of Technology                                                                                                                                                           |
| 14:15 | INVESTIGATION OF THE ROLE AND DESIGN OF THERMAL INSULATION IN THE ENVELOPE OF BURIED LARGE-SCALE THERMAL ENERGY STORAGE<br><u>Alice Tosatto</u> <sup>1</sup> , Fabian Ochs <sup>1</sup> , Muser Christoph <sup>2</sup><br><sup>1</sup> Universität Innsbruck; <sup>2</sup> Ingenieurbüro Ste.P ZT-GmbH                                                                                                                                                                                         |
| 14:30 | INFLUENCE OF CO <sub>2</sub> CONDITIONING STRATEGIES ON THERMOCHEMICAL ENERGY STORAGE PERFORMANCE IN SOLAR POWER TOWERS<br><u>Freddy Nieto</u> <sup>1</sup> , Alberto de la Calle <sup>2</sup> , Rodrigo Escobar <sup>1</sup><br><sup>1</sup> Pontificia Universidad Católica de Chile; <sup>2</sup> Instituto de Catálisis y Petroquímica, CSIC                                                                                                                                               |
| 14:45 | DEVELOPMENT OF A LOW-COST, SCALABLE SPHERICAL PCM STORAGE USING CORRUGATED PIPES: CONCEPT, DIMENSIONING AND PROTOTYPE DESIGN<br><u>Yannick Krabben</u> <sup>1</sup> , Pascal Gürber <sup>1</sup> , William Orlando Delgado Diaz <sup>1</sup> , Philipp Roos <sup>2</sup> , Markus Diener <sup>3</sup> , Anastasia Stamatou <sup>1</sup> , Jörg Worlitschek <sup>1</sup><br><sup>1</sup> Lucerne University of Applied Sciences; <sup>2</sup> Cowa Thermal Solutions AG; <sup>3</sup> Energy4Me |
| 15:00 | LESSONS LEARNED FROM A 1-YEAR TESTING OF A COPPER SLAG PACKED BED THERMAL ENERGY STORAGE WITH RADIAL-FLOW TOPOLOGY<br><u>Ignacio Calderon Vasquez</u> <sup>1</sup> , Raimundo Claren Figueroa <sup>1</sup> , José Ortega <sup>1</sup> , Valentina Constanza Segovia Araya <sup>1</sup> , Ian Wolde Ponce <sup>1</sup> , Rodrigo Escobar <sup>1</sup> , Jose Miguel Cardemil <sup>1</sup><br><sup>1</sup> Pontificia Universidad Católica de Chile                                              |
| 15:15 | DESIGN OF A CONCRETE-BASED SENSIBLE HEAT STORAGE MODULE PROTOTYPE FOR SOLAR HEAT<br><u>Federico Hugo Licandro</u> <sup>1</sup> , Pedro Andrés Galione Klot <sup>1</sup> , Emmanuel Romano Riela <sup>2</sup> , Joaquin Abrahan Buydid Castro <sup>2</sup><br><sup>1</sup> Universidad de la República; <sup>2</sup> Volfer                                                                                                                                                                     |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - AFTERNOON

#### ORAL SESSION 30 - EMERGING PHOTOVOLTAICS AND ADVANCED CONCEPTS

**Room:** Sala de Reunião 1 (Room 1) | **Chair:** Prof. Dr. Lawrence L. Kazmerski (University of Colorado Boulder - USA)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | INK WITH KESTERITE PRECURSORS AS ELECTROLYTE FOR DYE-SENSITIZED SOLAR CELL<br><i>Larissa de Sousa Mendonça<sup>1</sup>, Francisco Marcone Lima<sup>1</sup>, Vanja Fontenele Nunes<sup>1</sup>, João Pedro Santana Mota<sup>1</sup>, Antonio Sergio Bezerra Sombra<sup>1</sup>, Mona Lisa Moura de Oliveira<sup>2</sup>, Francisco Olimpio Moura Carneiro<sup>3</sup>, Carla Freitas de Andrade<sup>1</sup>, Francisco Nivaldo Aguiar Freire<sup>1</sup></i><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade Estadual do Ceará; <sup>3</sup> Universidade da Integração Internacional da Lusofonia Afro-Brasileira |
| 14:15 | REDUCING LOCK-IN THERMOGRAPHY TESTING TIME IN PHOTOVOLTAIC CELLS USING THERMAL TRANSIENT DATA<br><i>Renan Oliveira Silva<sup>1</sup>, Douglas Bressan Riffel<sup>1</sup></i><br><sup>1</sup> Universidade Federal de Sergipe                                                                                                                                                                                                                                                                                                                                                                                                               |
| 14:30 | SYNTHESIS AND CHARACTERIZATION OF GRAPHENE FILMS TO BE USED AS TRANSPARENT ELECTRODE IN SOLAR CELLS<br><i>Paola Jackeline Sánchez Guerrero<sup>1</sup>, Valeria Del Campo<sup>1</sup>, María Esperanza Benavides<sup>1</sup>, Tamara Beltrán<sup>1</sup>, Juan Chiappe<sup>1</sup>, Perrine Carroy<sup>2</sup>, Delfina Muñoz<sup>2</sup></i><br><sup>1</sup> Universidad Técnica Federico Santa María; <sup>2</sup> Université Grenoble Alpes CEA                                                                                                                                                                                         |
| 14:45 | SMALL-SCALE PV EMULATOR FOR EXPERIMENTAL CONTROL VALIDATION<br><i>Gabriele Lanzoni Mueller<sup>1</sup>, Marcelo Menezes Morato<sup>1</sup>, Julio Elias Normey-Rico<sup>1</sup></i><br><sup>1</sup> INCT CAPE, UFSC                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 15:00 | DESIGN OF A NOVEL TUNABLE A+ LED SOLAR SIMULATOR<br><i>Leonardo Sollazzo<sup>1</sup>, Rachele Grazzi<sup>1</sup>, Nazim Aslam<sup>1</sup>, Valentina Diolaiti<sup>1</sup>, Donato Vincenzi<sup>1</sup></i><br><sup>1</sup> University of Ferrara, Consorzio Futuro in Ricerca                                                                                                                                                                                                                                                                                                                                                              |
| 15:15 | SPECTRAL CORRECTION METHOD FOR PRECISE SOLAR CELL CHARACTERIZATION UNDER MULTI-LAMP SOLAR SIMULATORS<br><i>Oybek Abdulkhaev<sup>1</sup>, Asliddin Komilov<sup>2</sup>, Jasurjon Akhatov<sup>1</sup></i><br><sup>1</sup> Physical-Technical Institute of Uzbekistan Academy of Sciences; <sup>2</sup> National Scientific Research Institute of Renewable Energy Sources                                                                                                                                                                                                                                                                    |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - AFTERNOON

#### ORAL SESSION 31 - REMOTE SYSTEMS & SECOND-LIFE BATTERIES

**Room:** Sala de Reunião 2 (Room 2) | **Chair:** Andreas Hauer (Bavarian Center for Applied Energy Research - Germany)

|       |                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | REAL-CASE ANALYSIS OF SMALL-SCALE PV-BESS APPLICATIONS USING SECOND-LIFE LI-ION BATTERIES<br><i>Fábio Luis França de Faria, Matheus Hohmann, Lucas Augusto Zanicoski Sergio, Vincenzo Collodel Benetti, Aline Kirsten Vidal de Oliveira, Ricardo Rüther</i><br><i>Universidade Federal de Santa Catarina</i>                                                                                     |
| 14:15 | PERFORMANCE TESTING OF ADAPTED NI-MH BATTERIES FOR SECOND-LIFE USE IN AMAZONIAN ISOLATED MICROGRID<br><i>Lucas dos Santos Bulhosa, Anderson Amoras Vieira, Marcos André Barros Galhardo, Gilberto Figueiredo Pinto Filho, Daniel Henrique Nogueira Dias, Wilson Negrão Macedo</i><br><i>UFPA - Universidade Federal do Pará; UFF - Universidade Federal Fluminense</i>                           |
| 14:30 | PERFORMANCE ASSESSMENT OF A SECOND-LIFE LI-ION BESS FOR EVS CHARGING<br><i>Lucas Augusto Zanicoski Sergio<sup>1,2</sup>, Aline Kirsten Vidal de Oliveira<sup>1</sup>, Matheus Hohmann<sup>1</sup>, Giuliano Luchetta Martins<sup>2</sup>, Helena Flávia Napolini<sup>1</sup>, Ricardo Rüther<sup>1</sup></i><br><i><sup>1</sup>Universidade Federal de Santa Catarina; <sup>2</sup>Statkraft</i> |
| 14:45 | PERFORMANCE ASSESSMENT OF SOLAR OFF-GRID LIGHT POLES USING SECOND-LIFE BATTERIES<br><i>Julia Pereira Madeira, Ícaro Eiras da Cunha, Matheus Hohmann, Aline Kirsten Vidal de Oliveira, Ricardo Rüther</i><br><i>Fotovoltaica/UFSC Laboratory</i>                                                                                                                                                  |
| 15:00 | PERFORMANCE OF A 200 KWH ENERGY STORAGE SYSTEM WITH FIRST AND SECOND LIFE LITHIUM-ION BATTERIES<br><i>Aline Kirsten Vidal de Oliveira, Lucas Augusto Zanicoski Sergio, Matheus Hohmann, Ricardo Rüther</i><br><i>Universidade Federal de Santa Catarina</i>                                                                                                                                      |
| 15:15 | SOFTWARE TOOL FOR CALCULATING ENERGY WEIGHTED COEFFICIENTS IN PV INVERTER EFFICIENCY EVALUATION<br><i>Juan Carlos Colque Ccarita, Geyciane Pinheiro de Lima, Marcos Camargo Lima Filho, João Pedro Carvalho Silveira, Pedro José dos Santos Neto, Tarcio André dos Santos Barros</i><br><i>Universidade Estadual de Campinas</i>                                                                 |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - AFTERNOON

#### ORAL SESSION 32 - BUILDING THERMAL PERFORMANCE & COMFORT

**Room:** Sala de Reunião 3 (Room 3) | **Chair:** Dr. Qian Wang (KTH Royal Institute of Technology - Sweden)

|       |                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | CLOSE TO 100 % RENEWABLE ENERGY SINGLE FAMILY HOUSE IN HEATING DOMINATED CLIMATES<br><u>Fabian Ochs</u> <sup>1</sup> , <u>Alice Tosatto</u> <sup>1</sup> , <u>Elisa Venturi</u> <sup>1</sup><br><sup>1</sup> University of Innsbruck                                                                                                                                                                           |
| 14:15 | A METHODOLOGICAL FRAMEWORK FOR CALCULATING THE LEVELIZED COST OF HEAT FOR SOLAR THERMAL APPLICATIONS IN RESIDENTIAL BUILDINGS<br><u>Yoann Louvet</u> <sup>1</sup> , <u>Klaus Vajen</u> <sup>1</sup><br><sup>1</sup> University of Kassel, Institute of Thermal Engineering                                                                                                                                     |
| 14:30 | OPTIMISATION OF THERMAL COMFORT OF HOUSING IN MALINALCO, MEXICO, USING DIGITAL TOOLS AND BIOCLIMATIC DESIGN<br><u>Jose Roberto Garcia Chavez</u> <sup>1</sup> , <u>Jorge Gama García</u> <sup>1</sup><br><sup>1</sup> Metropolitan Autonomous University                                                                                                                                                       |
| 14:45 | SYNCHRONIZING OUTDOOR HEATWAVE DETECTION WITH INDOOR THERMAL EXTREMES: A CASE STUDY IN BRAZILIAN SOCIAL HOUSING<br><u>Matheus Korbes Bracht</u> <sup>1</sup> , <u>Ana Paula Melo</u> <sup>1</sup> , <u>Roberto Lamberts</u> <sup>1</sup><br><sup>1</sup> Universidade Federal de Santa Catarina                                                                                                                |
| 15:00 | ECONOMIC COMPARISON AMONG DIFFERENT SOLUTIONS FOR DOMESTIC WATER HEATING USING SOLAR THERMAL AND PV-SYSTEMS<br><u>Samuel Luna de Abreu</u> <sup>1</sup> , <u>Allan R. Starke</u> <sup>2</sup> , <u>Marcelo Pinho Almeida</u> <sup>3</sup><br><sup>1</sup> IFSC; <sup>2</sup> UFSC; <sup>3</sup> IEE/USP                                                                                                        |
| 15:15 | OPTIMAL BUILDING ORIENTATION FOR SOLAR RADIATION ACQUISITION UNDER RANDOM OBSTRUCTION CONDITIONS<br><u>Lei Zhuo</u> <sup>1</sup> , <u>Liu Yu</u> <sup>1</sup> , <u>Yirong Li</u> <sup>1</sup> , <u>Siyi Liu</u> <sup>1</sup> , <u>Song Jie</u> <sup>2</sup><br><sup>1</sup> Northwestern Polytechnical University; <sup>2</sup> School of Mechanical Engineering, Northwestern Polytechnical University, Xi'an |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### THURSDAY - 06/11/2025 - AFTERNOON

#### ORAL SESSION 33 - SOLAR COOKING AND THERMAL APPLICATIONS

**Room:** Sala de Reunião 4 (Room 4) | **Chair:** Alan Bigelow (Solar Cookers International - USA)

|       |                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | EXPERIMENTAL COMPARISON OF TWO SPECIALIZED COOKING POTS DURING PARTLY CLOUDY CONDITIONS USING PARABOLIC DISH SOLAR COOKERS<br><u>Ashmore Mawire</u><br>North-West University                                                                                                                                                                                                             |
| 14:15 | OPTICAL STUDY OF A LOW-SCALE HIGH RADIATIVE FLUX SOLAR FURNACE<br><u>Jose Daniel Lopez Duarte</u> <sup>1</sup> , <u>Eduardo González Mora</u> <sup>1</sup> , <u>Rasul Akbarov</u> <sup>2</sup><br><sup>1</sup> Universidad Autonoma del Estado de Mexico; <sup>2</sup> Institute of Materials Science of Uzbekistan Academy of Sciences                                                  |
| 14:30 | PERFORMANCE EVALUATION OF THE TOLOKATSIN 2020 SOLAR COOKER<br><u>Eduardo A. Rincón Mejía</u> <sup>1</sup> , <u>Eduardo González-Mora</u> <sup>1</sup><br><sup>1</sup> Autonomous University of México City                                                                                                                                                                               |
| 14:45 | INTEGRATED OPTICAL, ELECTRICAL AND THERMAL MODELLING OF A PARABOLIC-TROUGH SPECTRAL-SPLITTING PV-T COLLECTOR<br><u>Chandan Pandey</u> <sup>1</sup> , <u>Francesco Polito</u> <sup>1</sup> , <u>Benjamin Teo</u> <sup>1</sup> , <u>Mingyang Wu</u> <sup>1</sup> , <u>Adelani Oyeniran</u> <sup>1</sup> , <u>Christos N. Markides</u> <sup>1</sup><br><sup>1</sup> Imperial College London |
| 15:00 | REDUCING UNEVEN DRYING FOR AN INDIRECT SOLAR DRYER WITH BUILT IN HEAT EXCHANGER<br><u>Henrik Davidsson</u> <sup>1</sup> , <u>Lara Constanze Müller</u> <sup>1</sup> , <u>Samten Lhendup</u> <sup>2</sup> , <u>Martin Andersson</u> <sup>1</sup><br><sup>1</sup> Lund University; <sup>2</sup> Jigme Namgyel Engineering College                                                          |
| 15:15 | QUANTIFYING THE IMPACT OF URBAN MORPHOLOGY ON SOLAR POTENTIAL: A CASE STUDY OF RESIDENTIAL AREAS IN XI'AN, CHINA<br><u>Liu Yu</u> <sup>1</sup> , <u>Zou Yufei</u> <sup>1</sup><br><sup>1</sup> Northwestern Polytechnical University                                                                                                                                                     |



# *Solar World Congress 2025*

## **SCIENTIFIC PROGRAMME**

### **POSTER SESSIONS**



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 1 - TUESDAY - 04/11/2025 - 16h00 to 17h00

#### THEME 01: SOLAR THERMAL POWER - PART 1/2

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 47 [A.I.1]    | PERFORMANCE ANALYSIS OF A HIGH-TEMPERATURE KALINA CYCLE INTEGRATED WITH PARABOLIC TROUGH COLLECTORS FOR CSP IN MÉXICO<br><u>Eduardo González Mora</u> <sup>1</sup><br><sup>1</sup> <i>Universidad Autónoma del Estado de México</i>                                                                                                                                                                                                                                                                                                                    |
| 109 [C.II.10] | SOLAR HYDROGEN DERIVATIVE METHANOL PRODUCTION - SOLMETH24 PROJECT<br><u>Nathalie Monnerie</u> <sup>1</sup><br><sup>1</sup> <i>German Aerospace Center DLR</i>                                                                                                                                                                                                                                                                                                                                                                                          |
| 118 [C.I.4]   | CHARACTERIZATION OF THERMOPHYSICAL PROPERTIES OF MOLTEN SALTS USED IN CSP PLANTS USING THE DT-HISTORY<br><u>Grover Jose Viracocha Chambi</u> <sup>1</sup> , <u>Abdiel Mallco Carpio</u> <sup>1</sup> , <u>Mauricio Teodoro Lague Condarco</u> <sup>1</sup> , <u>Carlos Alberto Pérez Rábago</u> <sup>2</sup><br><sup>1</sup> <i>Universidad de Antofagasta</i> ; <sup>2</sup> <i>Instituto de Energías Renovables, Universidad Nacional Autónoma de México</i>                                                                                         |
| 119 [A.I.9]   | CHARACTERIZATION OF THE WELDING ZONE IN STAINLESS STEELS USED IN CSP PLANTS UNDER STATIC CORROSION CONDITIONS WITH MOLTEN SALTS<br><u>Mauricio Teodoro Lague Condarco</u> <sup>1</sup> , <u>Abdiel Mallco Carpio</u> <sup>1</sup> , <u>Grover Jose Viracocha Chambi</u> <sup>1</sup><br><sup>1</sup> <i>Universidad de Antofagasta</i>                                                                                                                                                                                                                 |
| 159 [D.II.2]  | CHARACTERIZATION OF BIO-BASED PHASE CHANGE MATERIALS FOR SOLAR ENERGY APPLICATIONS<br><u>Thiago Torres Martins Rocha</u> <sup>1</sup> , <u>Felipe Lara Pinto</u> <sup>1</sup> , <u>Paulo Vinicius Trevizoli</u> <sup>1</sup><br><sup>1</sup> <i>Federal University of Minas Gerais</i>                                                                                                                                                                                                                                                                 |
| 247 [D.I.8]   | ANALYTICAL AND EXPERIMENTAL INVESTIGATION OF OVERALL HEAT LOSS COEFFICIENT FOR SINGLE NON-EVACUATED TUBE SOLAR THERMAL RECEIVER<br><u>Saroj Kumar Singh</u> <sup>1</sup> , <u>Kishan Konannawar</u> <sup>1</sup> , <u>Shireesh B Kedare</u> <sup>1</sup> , <u>S V Prabhu</u> <sup>1</sup><br><sup>1</sup> <i>Indian Institute of Technology Bombay</i>                                                                                                                                                                                                 |
| 296 [C.II.6]  | PERFORMANCE ANALYSIS OF A SOLAR DRYER EQUIPPED WITH A PHASE CHANGE MATERIAL THERMAL STORAGE UNIT<br><u>Lesley Boago Modiradilo</u> <sup>1</sup> , <u>Karabo Kepadisa</u> <sup>1</sup> , <u>Kevin Nnanye Nwaigwe</u> <sup>1</sup><br><sup>1</sup> <i>University of Botswana - Clean Energy Research Centre</i>                                                                                                                                                                                                                                          |
| 299 [B.II.3]  | MICROWAVE DESORPTION OF ZEOLITE FOR RENEWABLE ENERGY PROCESSES<br><u>Bernhard Zettl</u> <sup>1</sup> , <u>Nayrana Daborer-Prado</u> <sup>1</sup> , <u>Gayaneh Issayan</u> <sup>1</sup><br><sup>1</sup> <i>University of Applied Sciences Upper Austria</i>                                                                                                                                                                                                                                                                                             |
| 445 [C.I.8]   | HYBRID SYSTEM FOR GREEN HYDROGEN PRODUCTION USING MICROBIAL ELECTROLYSIS AND DESALINATION CELLS COUPLED WITH SOLAR-POWERED GLYCEROL STEAM REFORMING<br><u>Jhoni Anderson Schembek Silva</u> <sup>1</sup> , <u>Maria Clara Ribeiro Carvalho</u> <sup>1</sup> , <u>Emanulle Lima Carneiro</u> <sup>1</sup> , <u>Thaissa Lorrany Alves de Sousa</u> <sup>1</sup> , <u>Paulo Alexandre Costa Rocha</u> <sup>1</sup> , <u>Fernanda Leite Lobo</u> <sup>1</sup> , <u>Andre Valente Bueno</u> <sup>1</sup><br><sup>1</sup> <i>Federal University of Ceara</i> |
| 452 [D.II.12] | EVALUATION OF LINEAR FRESNEL REFLECTORS<br><u>Leonardo Faustino Lacerda de Souza</u> <sup>1</sup> , <u>Chigueru Tiba</u> <sup>2</sup> , <u>Naum Fraidenaich</u> <sup>2</sup> , <u>Ikaro Teles Bezerra dos Santos Barreto</u> <sup>2</sup><br><sup>1</sup> <i>Universidade Federal de Alagoas</i> ; <sup>2</sup> <i>Universidade Federal de Pernambuco</i>                                                                                                                                                                                              |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 1 - TUESDAY - 04/11/2025 - 16h00 to 17h00

#### THEME 01: SOLAR THERMAL POWER - PART 2/2

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 470 [D.I.11] | FOR ALL TANKS PRONE TO STORE ENERGY<br><u>Alfredo Angelillo</u> <sup>1</sup> , <u>Walter Gaggioli</u> <sup>2</sup> , <u>Primo Di Ascenzi</u> <sup>2</sup> , <u>Valeria Russo</u> <sup>2</sup><br><sup>1</sup> REEFS2; <sup>2</sup> ENEA Casaccia-Italian National Agency for New Technologies, Energy and Sustainable Economic Development                                                                                                                                                                                                                                                                             |
| 485 [D.I.1]  | NOVEL HELIOSTAT SHAPE CHARACTERIZATION METHODOLOGY USING A TERRESTIAL LASER SCANNER<br><u>Ricardo Filipe Carrão da Conceição</u> <sup>1</sup> , <u>Maitane Ferreres Eceiza</u> <sup>2</sup> , <u>Moritz Bitterling</u> <sup>3</sup> , <u>Kypros Milidonis</u> <sup>3</sup> , <u>Jose Gonzalez-Aguilar</u> <sup>1</sup> , <u>Gregor Bern</u> <sup>2</sup> , <u>Marios C. Georgiou</u> <sup>3</sup> , <u>Germilly Reki Morais Barreto</u> <sup>1</sup><br><sup>1</sup> IMDEA Energy; <sup>2</sup> Fraunhofer-Institut für Solare Energiesysteme ISE; <sup>3</sup> The Cyprus Institute                                   |
| 557 [C.I.2]  | WEATHER-DRIVEN PTC GEOMETRY OPTIMIZATION: A SITE-SPECIFIC DESIGN METHODOLOGY<br><u>Gonzalo Martín López Chiossoni</u> <sup>1</sup> , <u>Ezequiel Cardozo</u> <sup>1</sup> , <u>Germán Morales</u> <sup>1</sup> , <u>Juan Manuel Rodríguez Muñoz</u> <sup>1</sup> , <u>Santiago Correa</u> <sup>1</sup><br><sup>1</sup> Universidad de la República                                                                                                                                                                                                                                                                     |
| 622 [B.II.9] | SOLAR VARIABILITY AND THERMAL INERTIA IN SMALL CSP PLANTS<br><u>Fernando Gonçalves de Souza</u> <sup>1</sup> , <u>Nelson Yurako Londoño Pabón</u> <sup>1</sup> , <u>Márcia Barbosa Henriques Mantelli</u> <sup>1</sup><br><sup>1</sup> Federal University of Santa Catarina                                                                                                                                                                                                                                                                                                                                            |
| 629 [B.I.5]  | OSCILLATING ARC AS AN IMPROVEMENT STRATEGY FOR WELDS IN THERMAL STORAGE SYSTEMS IN CSP PLANTS<br><u>Raul Wilson Pasten Astudillo</u> <sup>1</sup> , <u>Mauro Henriquez Heimpeller</u> <sup>1</sup> , <u>Juan Carlos Reinoso Burrows</u> <sup>1</sup> , <u>Felipe Galleguillos Madrid</u> <sup>1</sup> , <u>Carlos Francisco Soto Soto</u> <sup>1</sup> , <u>Carlos Duran Mora</u> <sup>1</sup> , <u>Luis Guerreiro</u> <sup>2</sup> , <u>Mehran Nabahat</u> <sup>3</sup><br><sup>1</sup> Universidad de Antofagasta; <sup>2</sup> Universa de Evora; <sup>3</sup> Iberian Centre for Research in Energy Storage (CIIE) |
| 709 [F.I.8]  | DESIGN AND TEST OF NOVEL CSP COLLECTOR WITH THE RECEIVER ENCLOSED BY LAMBERTIAN REFLECTOR INTEGRATING TUBE<br><u>Stefan Larsson-Mastonstråle</u> <sup>1</sup><br><sup>1</sup> Maston Renewable Energy Lab                                                                                                                                                                                                                                                                                                                                                                                                              |
| 888 [A.I.12] | HYBRID SENSIBLE-LATENT HEAT THERMAL ENERGY STORAGE FOR CONCENTRATED SOLAR POWER APPLICATIONS: INSIGHTS FROM THE COOPERANT PROJECT<br><u>Adina Hochuli</u> <sup>1</sup><br><sup>1</sup> Lucerne University of Applied Science - School of Engineering and Architecture                                                                                                                                                                                                                                                                                                                                                  |
| 894 [C.II.3] | PARTICLE CLUSTERING PHENOMENA ON SrCO <sub>3</sub> DOPED BY Cu/Co DURING SOLAR THERMOCHEMICAL ENERGY STORAGE CYCLES<br><u>Hernando Romero Paredes Rubio</u> <sup>1</sup> , <u>José Miguel Berrio Sánchez</u> <sup>1</sup> , <u>Juan Daniel Macias</u> <sup>1</sup> , <u>Lizbeth Monserrat Martínez Rojas</u> <sup>1</sup><br><sup>1</sup> Universidad Autónoma Metropolitana Iztapalapa                                                                                                                                                                                                                                |
| 999 [D.II.5] | NEXUS PVT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 1 - TUESDAY - 04/11/2025 - 16h00 to 17h00

#### THEME 04: RENEWABLE RESOURCE ASSESSMENT AND METEOROLOGY - PART 1/3

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 58 [H.II.9]  | ATMOSPHERIC ABSORPTION RATIO ON CITIES OF PERNAMBUCO STATE OF BRAZIL<br><u>Nelson Veissid<sup>1</sup></u> , <u>Helmut Muniz da Silva<sup>1</sup></u> , <u>Manoel Henrique de Oliveira Pedrosa Filho<sup>2</sup></u><br><sup>1</sup> INPE; <sup>2</sup> IFPE                                                                                                                                                                                                                                                                                           |
| 74 [C.I.11]  | PERNAMBUCO SOLARIMETRIC NETWORK<br><u>Manoel Henrique de Oliveira Pedrosa Filho<sup>1</sup></u><br><sup>1</sup> IFPE                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 99 [F.II.3]  | FORECASTING PRODUCTION AND DEMAND FOR PV-INTEGRATED SYSTEM WITH LSTM AND COMPARISON WITH ANN MODEL<br><u>Farzin Golzar<sup>1</sup></u> , <u>Christian Schlüter Prieto<sup>1</sup></u><br><sup>1</sup> KTH Royal Institute of Technology                                                                                                                                                                                                                                                                                                               |
| 144 [G.II.2] | LONG SHORT TERM MEMORY RECURRENT NEURAL NETWORK AND STATISTICAL TIME SERIES ANALYSIS FORECAST MODELS FOR WIND FARM POWER OUTPUT AND ELECTRICITY PRICE<br><u>John Boland<sup>1</sup></u> , <u>Belinda Chiera<sup>1</sup></u> , <u>Lui Cirocco<sup>1</sup></u> , <u>Josh Chopin<sup>1</sup></u><br><sup>1</sup> Adelaide University                                                                                                                                                                                                                     |
| 199 [F.I.5]  | SUB-HOUR EVALUATION OF GLOBAL HORIZONTAL IRRADIANCE FROM THE PHYSICAL SOLAR MODEL (PSM) INCLUDING LATITUDES BELOW 20°S<br><u>Cristobal Silvero<sup>1</sup></u> , <u>Inti Piccioli<sup>2</sup></u> , <u>Gonzalo Abal<sup>3</sup></u> , <u>Agustín Laguarda<sup>2</sup></u><br><sup>1</sup> Instituto de Física del Noa (INFNOA, CONICET-UNT); <sup>2</sup> Laboratorio de Energía Solar, Universidad de la República; <sup>3</sup> Laboratorio de Energía Solar, Universidad de la República                                                           |
| 203 [C.I.12] | DEVELOPMENT OF A NON-PARAMETRIC MODEL FOR COST-EFFECTIVE PYRANOMETER BASED ON ARTIFICIAL NEURAL NETWORK<br><u>Jonata Campelo de Albuquerque<sup>1</sup></u> , <u>Manoel Henrique de Oliveira Pedrosa Filho<sup>2</sup></u> , <u>Ygo Neto Batista<sup>2</sup></u> , <u>Regina Maria de Lima Neta<sup>2</sup></u> , <u>Cassiano Manoel Bezerra de Melo<sup>2</sup></u><br><sup>1</sup> Universidade Federal de Pernambuco; <sup>2</sup> Instituto Federal de Educação, Ciência e Tecnologia de Pernambuco                                               |
| 265 [H.I.1]  | PROCEDURES FOR QUALITY CONTROL OF SOLAR RADIATION DATA IN NORTHERN CHILE<br><u>Luis Angel Conde Mendoza<sup>1</sup></u> , <u>Douglas Olivares<sup>1</sup></u> , <u>Edward Fuentealba<sup>1</sup></u> , <u>Abel Taquichiri<sup>1</sup></u> , <u>Josefa Montoya<sup>1</sup></u> , <u>Aitor Marzo<sup>2</sup></u><br><sup>1</sup> Universidad de Antofagasta; <sup>2</sup> Universidad de Granada                                                                                                                                                        |
| 266 [J.I.5]  | A SYSTEM-INTEGRATING AND ENERGY FORECASTING TOOL FOR RENEWABLE ENERGY SOLUTIONS<br><u>Steven Nicolaou<sup>1</sup></u> , <u>Alexandros G. Charalambides<sup>1</sup></u> , <u>Rogiros Tapakis<sup>1</sup></u> , <u>Minas Patsalides<sup>1</sup></u> , <u>Andreas Ioannides<sup>1</sup></u><br><sup>1</sup> Cyprus University of Technology                                                                                                                                                                                                              |
| 312 [I.I.10] | ANALYSIS OF THE GHI VARIABILITY INDEX FOR THE CITY OF NATAL-RN<br><u>Ana Cleide Bezerra Amorim<sup>1</sup></u> , <u>Samira de Azevedo Santos Emiliavaca<sup>1</sup></u> , <u>Bruno do Nascimento e Silva<sup>1</sup></u> , <u>Alan Rodrigues de Sousa<sup>1</sup></u> , <u>João Vítor Fonseca de Mendonça<sup>1</sup></u> , <u>Nicholas Medeiros Lopes<sup>1</sup></u> , <u>Gabriela Rocha Alves da Silva<sup>1</sup></u> , <u>André Luiz de Oliveira Lira<sup>1</sup></u><br><sup>1</sup> ISI-ER - SENAI Innovation Institute for Renewable Energies |
| 415 [D.I.4]  | RECOVERING MISSING PHOTOVOLTAIC SIGNAL (GAPS) WITH LOW DIMENSIONAL MANIFOLD MODEL<br><u>Jugurta Rosa Montalvao Filho<sup>1</sup></u> , <u>Leoraig Santos Cardoso<sup>1</sup></u> , <u>Ézio Carvalho de Santana<sup>1</sup></u> , <u>Pierre Pinson<sup>2</sup></u> , <u>Douglas Bressan Riffel<sup>1</sup></u><br><sup>1</sup> UFS; <sup>2</sup> Imperial College London                                                                                                                                                                               |
| 436 [F.II.9] | ENSO INFLUENCE ON INTRADAY SOLAR IRRADIANCE IN URUGUAY DURING THE MOST AFFECTED PERIOD (NOV-DEC)<br><u>Agustín Laguarda<sup>1</sup></u> , <u>Belén Mayté Espino Budelli<sup>1</sup></u> , <u>Alejandra de Vera<sup>1</sup></u> , <u>Rafael Terra<sup>1</sup></u><br><sup>1</sup> Universidad de la República                                                                                                                                                                                                                                          |
| 456 [G.II.6] | CALIBRATION OF SOLAR IRRADIANCE DATA USING OPTIMAL TRANSPORT<br><u>Lucio Carlos Pimentel Paiva<sup>1</sup></u> , <u>Luiz Filipe Santana Oliveira Reis<sup>1</sup></u> , <u>Joel Kalil da Silva Pontes<sup>1</sup></u> , <u>Luis Guilherme Bastos de Castro<sup>1</sup></u> , <u>Rodrigo Raimundo Freitas Santos<sup>1</sup></u> , <u>Leticia Bezerra de Vasconcelos Vieira<sup>1</sup></u><br><sup>1</sup> CDV Desenvolvimento                                                                                                                        |
| 482 [H.II.3] | THE IBERIAN PENINSULA BLACKOUT: CAUSES, IMPACTS, AND SOLUTIONS<br><u>Peter Yang<sup>1</sup></u><br><sup>1</sup> Case Western Reserve University                                                                                                                                                                                                                                                                                                                                                                                                       |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 1 - TUESDAY - 04/11/2025 - 16h00 to 17h00

#### THEME 04: RENEWABLE RESOURCE ASSESSMENT AND METEOROLOGY - PART 2/3

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 507 [G.I.5]  | ENHANCED SITE-ADAPTATION FOR RELIABLE PV ASSESSMENT: COMPARATIVE STUDY FOR BRAZIL AND GERMANY<br><i>Gustavo Xavier de Andrade Pinto<sup>1</sup>, Helena Flávia Napolini<sup>1</sup>, Oliver Pfeiffer<sup>2</sup>, Marília Braga<sup>1</sup>, Amanda Mendes Ferreira Gomes<sup>1</sup>, Rafael Antunes Campos<sup>1</sup>, Ulf Blieske<sup>2</sup>, Ingo Stadler<sup>2</sup>, Ricardo Rüther<sup>1</sup></i><br><sup>1</sup> Universidade Federal de Santa Catarina; <sup>2</sup> TH Köln - University of Applied Sciences                                                                                                                          |
| 508 [I.I.4]  | RETHINKING PV GENERATION CAPACITIES<br><i>Stefan Wilker<sup>1</sup>, Fiona Layes<sup>1</sup>, Thilo Sauter<sup>1</sup></i><br><sup>1</sup> TU Wien, Institute for Computer Technology                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 547 [I.I.7]  | ASSESSMENT OF GLOBAL NUMERICAL WEATHER PREDICTION MODELS FOR SHORT-TERM SOLAR IRRADIATION FORECASTING IN SOUTHEASTERN SOUTH AMERICA<br><i>Vívian Teixeira-Branco<sup>1</sup>, Rodrigo Alonso-Suárez<sup>2</sup>, Gabriel Cazes<sup>2</sup></i><br><sup>1</sup> Universidad Tecnológica de Uruguay; <sup>2</sup> Universidad de la República                                                                                                                                                                                                                                                                                                        |
| 597 [G.I.3]  | MACHINE LEARNING FOR FORECASTING HYDROGEN PRODUCTION FROM SOLAR ENERGY USING K-NEAREST NEIGHBORS REGRESSION MODEL: A CASE STUDY IN PETROLINA, BRAZIL<br><i>Gabriel de Oliveira Almeida<sup>1</sup>, Tainan Sousa Viana<sup>1</sup>, Jesse Van Griensven Thé<sup>2</sup>, Maria Eugênia Vieira da Silva<sup>1</sup>, Paulo Alexandre Costa Rocha<sup>1</sup></i><br><sup>1</sup> Federal University of Ceará; <sup>2</sup> University of Guelph                                                                                                                                                                                                     |
| 600 [F.I.4]  | METHODS FOR PERFORMANCE EVALUATION OF PHOTOVOLTAIC PLANTS WITH REDUCED INSTRUMENTATION<br><i>João Frederico Souza de Paula<sup>1</sup>, João Lucas de Souza Silva<sup>1</sup>, Marcelo Vinícius de Paula<sup>1</sup>, Gustavo Fraidenraich<sup>1</sup>, Tarcio André dos Santos Barros<sup>1</sup></i><br><sup>1</sup> Universidade Estadual de Campinas                                                                                                                                                                                                                                                                                           |
| 609 [F.I.10] | MULTI-SCALE PERFORMANCE ASSESSMENT OF HELIOSAT-4 AND LCIM FOR SOLAR IRRADIANCE ESTIMATION IN ARGENTINA<br><i>Anabela Lusi<sup>1</sup>, Facundo Orte<sup>1</sup>, Elian Wolfram<sup>2</sup>, Rodrigo Alonso Suárez<sup>3</sup>, Agustín Laguarda<sup>4</sup></i><br><sup>1</sup> Departamento de Investigaciones en Láseres y Aplicaciones (DEILAP), UNIDEF (CITEDEF-CONICET); <sup>2</sup> Servicio Meteorológico Nacional, Dirección Nacional de Ciencia e Innovación en Productos y Servicios; <sup>3</sup> Laboratorio de Energía Solar, Cenur Litoral Norte, Udelar; <sup>4</sup> Laboratorio de Energía Solar, Facultad de Ingeniería, Udelar |
| 634 [F.I.1]  | SIMULATION OF POA IRRADIANCE SENSOR PLACEMENT BIASES IN SINGLE-AXIS TRACKERS: A MID-LATITUDE CASE STUDY WITH OPEN-SOURCE TOOL<br><i>Benhur Azambuja Possatto<sup>1</sup></i><br><sup>1</sup> Flextronics Instituto de Tecnologia                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 701 [G.I.12] | CHARACTERIZING COASTAL STRATOCUMULUS CLOUD IMPACTS ON SOLAR IRRADIANCE FOR SHORT-TERM FORECASTING<br><i>Gabriela Pallauta Pérez<sup>1</sup>, Mónica Zamora Zapata<sup>1</sup></i><br><sup>1</sup> Universidad de Chile                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 723 [B.I.6]  | CHALLENGES FOR GROWING THE SHARE OF RENEWABLES IN PORTUGAL AND CHILE<br><i>Luís Guerreiro<sup>1</sup>, Mauro Henriquez Heimpeller<sup>2</sup></i><br><sup>1</sup> ICT- Institut for Earth Sciences, University of Evora; <sup>2</sup> University of Antofagasta                                                                                                                                                                                                                                                                                                                                                                                    |
| 727 [J.I.1]  | CLOUD VARIABILITY AND CLOUDLESS PERCENTAGE DAYS CALCULATION USING CLUSTER ANALYSIS<br><i>Ricardo Almeida de Siqueira<sup>1</sup>, Vinicius Roggerio da Rocha<sup>1</sup>, Rodrigo Santos Costa<sup>1</sup>, Andre Rodrigues Goncalves<sup>1</sup></i><br><sup>1</sup> Instituto Nacional de Pesquisas Espaciais                                                                                                                                                                                                                                                                                                                                    |
| 740 [I.I.3]  | METHODOLOGICAL CONSIDERATIONS FOR PV POWER FLUCTUATION CHARACTERIZATION<br><i>Ricardo Moura de Souza<sup>1</sup>, Rafael Cavalcanti Neto<sup>1</sup>, Felipe José Pereira Ferreira<sup>1</sup>, José Filho da Costa Castro<sup>1</sup>, Eduardo José Barbosa<sup>1</sup></i><br><sup>1</sup> Universidade Federal de Pernambuco                                                                                                                                                                                                                                                                                                                    |
| 747 [I.I.11] | ANALYSIS OF GHI VARIABILITY FROM WRF-SOLAR FOR THE FIVE CITIES OF BRAZIL<br><i>Ana Cleide Bezerra Amorim<sup>1</sup>, Samira de Azevedo Santos Emiliavaca<sup>1</sup>, Bruno do Nascimento e Silva<sup>1</sup>, Alan Rodrigues de Sousa<sup>1</sup>, André Luiz de Oliveira Lira<sup>1</sup>, João Vítor Fonseca de Mendonça<sup>1</sup>, Gabriela Rocha Alves da Silva<sup>1</sup>, Moisés Elias Nascimento Rufino da Costa<sup>1</sup></i><br><sup>1</sup> ISI-ER - SENAI Innovation Institute for Renewable Energies                                                                                                                            |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 1 - TUESDAY - 04/11/2025 - 16h00 to 17h00

#### THEME 04: RENEWABLE RESOURCE ASSESSMENT AND METEOROLOGY - PART 3/3

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 752 [H.II.5]  | A LOW-COST IOT-BASED IRRADIANCE ESTIMATOR FOR PHOTOVOLTAIC MODULES<br><i>Pedro Henrique da Costa Eustáchio<sup>1</sup>, Gustavo Medeiros de Souza Azevedo<sup>1</sup>, Eduardo José Barbosa<sup>1</sup>, Marcelo Cabral Cavalcanti<sup>1</sup>, Fabricio Bradaschia<sup>1</sup>, Rafael Cavalcanti Neto<sup>1</sup>, Tiago Alves Fernandes<sup>1</sup>, José Filho da Costa Castro<sup>2</sup></i><br><sup>1</sup> Universidade Federal de Pernambuco - UFPE; <sup>2</sup> UFPE              |
| 763 [I.I.2]   | IMPROVING SOLAR DATA QUALITY IN RIO GRANDE DO NORTE STATIONS THROUGH NIGHTTIME ANOMALY DETECTION TESTS<br><i>João Vítor Fonseca de Mendonça<sup>1</sup>, Samira de Azevedo Santos Emiliavaca<sup>1</sup>, Alan Rodrigues de Sousa<sup>1</sup>, Ana Cleide Bezerra Amorim<sup>1</sup>, Nicholas Medeiros Lopes<sup>1</sup>, André Luiz de Oliveira Lira<sup>1</sup>, Gabriela Rocha Alves da Silva<sup>1</sup></i><br><sup>1</sup> Instituto Senai de Inovação em Energias Renováveis - ISIER |
| 776 [H.I.6]   | COMPARATIVE ASSESSMENT OF PV ENERGY FORECASTING TOOLS USING EMPIRICAL DATA FROM A PLANT IN NORTHEAST BRAZIL<br><i>Marcos Camargo Lima Filho<sup>1</sup>, Pedro José dos Santos Neto<sup>1</sup>, Juan Carlos Colque Ccarita<sup>1</sup>, João Pedro Carvalho Silveira<sup>1</sup>, Diego Lucas de Carvalho Martinez<sup>1</sup>, Tarcio André dos Santos Barros<sup>1</sup></i><br><sup>1</sup> Universidade Estadual de Campinas (UNICAMP)                                                  |
| 790 [H.I.12]  | STRATEGIC SITING OF PHOTOVOLTAIC AND BATTERY ENERGY STORAGE SYSTEMS IN BOTSWANA<br><i>Amogelang Moemba<sup>1</sup>, Marília Braga<sup>2</sup>, Amanda Mendes Ferreira Gomes<sup>2</sup>, Daniel Odilio dos Santos<sup>2</sup>, Ricardo Rüther<sup>3</sup></i><br><sup>1</sup> Botswana Institute of Technology Research and Innovation (BITRI); <sup>2</sup> Solar Energy Research Laboratory Fotovoltaica/UFSC; <sup>3</sup> Laboratório de Energia Solar Fotovoltaica                      |
| 800 [I.I.12]  | SPATIAL CHARACTERIZATION OF OVERIRRADIANCE EVENTS IN THE CITY OF NATAL<br><i>Samira de Azevedo Santos Emiliavaca<sup>1</sup>, Ana Cleide Bezerra Amorim<sup>1</sup>, João Vítor Fonseca de Mendonça<sup>1</sup>, Alan Rodrigues de Sousa<sup>1</sup>, Gabriela Rocha Alves da Silva<sup>1</sup>, Moisés Elias Nascimento Rufino da Costa<sup>1</sup></i><br><sup>1</sup> ISI-ER                                                                                                              |
| 866 [I.II.11] | ANALYSIS OF THE SPATIAL VARIABILITY OF GHI IN RIO GRANDE DO NORTE BRAZIL<br><i>Aléxia Monteiro Valentim<sup>1</sup>, Ana Cleide Bezerra Amorim<sup>1</sup>, Cláudio Moisés Santos e Silva<sup>2</sup>, João Vitor de Oliveira<sup>2</sup>, Samira de Azevedo Santos Emiliavaca<sup>1</sup></i><br><sup>1</sup> ISI-ER; <sup>2</sup> UFRN                                                                                                                                                     |
| 875 [I.II.12] | ANALYSIS OF GHI VARIABILITY FROM WRF-SOLAR FOR THE THREE CITIES OF AMAPÁ<br><i>Karen Fernanda Teixeira Braz Lima<sup>1</sup>, Ana Cleide Bezerra Amorim<sup>1</sup>, Vanessa de Almeida Dantas<sup>1</sup>, Samira de Azevedo Santos Emiliavaca<sup>1</sup>, Gabriel Brito Costa<sup>2</sup></i><br><sup>1</sup> Instituto Senai de Energias Renováveis; <sup>2</sup> Universidade Federal do Oeste do Pará                                                                                  |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 1 - TUESDAY - 04/11/2025 - 16h00 to 17h00

#### THEME 09: MARKET, ECONOMY, POLICIES, ENVIRONMENT AND SOCIAL

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 151 [D.II.9]  | POTENTIAL AND DEMAND FOR PHOTOVOLTAIC SYSTEMS IN RURAL AND URBAN AREAS IN 3 SELECTED AFRICAN COUNTRIES<br><i>Thomas Merkle</i> <sup>1</sup><br><sup>1</sup> Thomas Merkle Consultant                                                                                                                                                                                                                                                                                                                                                     |
| 218 [E.II.6]  | WINDS OF ENERGY TRANSITION AND THEIR IMPACTS ON THE LIVELIHOODS OF COASTAL COMMUNITIES IN CEARÁ, BRAZIL<br><i>Lígia de Nazaré Aguiar Silva</i> <sup>1</sup> , <i>Juana Angélica Felipe Fernandes</i> <sup>2</sup><br><sup>1</sup> Pontifícia Universidade Javeriana; <sup>2</sup> Universidad Adolfo Ibáñez                                                                                                                                                                                                                              |
| 333 [E.II.2]  | REGULATORY IMPACTS ON INNOVATIVE ENERGY MODELS: A CASE STUDY ON SUBSCRIPTION-BASED SOLAR ENERGY SOLUTIONS IN BRAZIL<br><i>Annelys Machado Schetinger</i> <sup>1</sup> , <i>Israel Felix de Almeida</i> <sup>1</sup> , <i>André Frossard Pereira de Lucena</i> <sup>1</sup> , <i>Sophia Cavalcanti Barbosa Costa</i> <sup>1</sup><br><sup>1</sup> Federal University of Rio de Janeiro                                                                                                                                                    |
| 368 [E.I.4]   | A GIS-BASED FUZZY AHP METHOD FOR SOLAR FARM SITE EVALUATION<br><i>Aminreza Neshat</i> <sup>1</sup> , <i>Mohammad Rahnama</i> <sup>2</sup> , <i>Ahmed Abbas Ali</i> <sup>1</sup> , <i>Saman Javadi</i> <sup>3</sup> , <i>Masoumeh Abed</i> <sup>1</sup><br><sup>1</sup> Department of GIS/RS, Science and Research Branch, Islamic Azad University, Tehran, Iran; <sup>2</sup> Lasalle College Vancouver, BC, Canada; <sup>3</sup> Department of Water Engineering, College of Agriculture Technology, University of Tehran, Tehran, Iran |
| 410 [E.II.12] | TECHNICAL AND ECONOMIC ANALYSIS OF THE IMPLEMENTATION OF BATTERY ENERGY STORAGE SYSTEMS (BESS) FOR NODES IN THE NATIONAL ELECTRIC SYSTEM (SEN) WITH HIGH CONCENTRATION OF SOLAR ENERGY<br><i>Patricio Valdivia-Lefort</i> <sup>1</sup><br><sup>1</sup> USACH                                                                                                                                                                                                                                                                             |
| 523 [E.I.1]   | WORKSHOP-BASED RENEWABLE ENERGY EDUCATION FOR MIDDLE SCHOOL STUDENTS IN SOUTHERN BRAZILIAN PUBLIC SCHOOLS<br><i>Amanda Mendes Ferreira Gomes</i> <sup>1</sup> , <i>Bianca Neves Machado</i> <sup>2</sup> , <i>Gabriela Pereira da Silva Maciel</i> <sup>2</sup> , <i>Gabriela Sehnem Heck</i> <sup>2</sup> , <i>Ricardo Rüther</i> <sup>1</sup> , <i>Aline Cristiane Pan</i> <sup>2</sup><br><sup>1</sup> Universidade Federal de Santa Catarina; <sup>2</sup> Universidade Federal do Rio Grande do Sul                                 |
| 561 [E.I.8]   | POLICY RECOMMENDATIONS FOR ACHIEVING NATIONAL AND GLOBAL 100% RENEWABLE ENERGY TARGETS<br><i>David S. Renne</i> <sup>1</sup> , <i>Rainer Hinrichs-Rahlwes</i> <sup>2</sup><br><sup>1</sup> Dave Renné Renewables; <sup>2</sup> European Renewable Energy Foundation                                                                                                                                                                                                                                                                      |
| 642 [E.II.9]  | FORECASTING PHOTOVOLTAIC MODULE WASTE GENERATION IN BRAZIL: A PROSPECTIVE ANALYSIS<br><i>Raimundo Guimaraes Saraiva Junior</i> <sup>1</sup> , <i>Elizeu Lucas Moura Barboza</i> <sup>1</sup> , <i>Kaline Kelle Lima de Oliveira</i> <sup>1</sup> , <i>Francisco Glaubênio Cavalcante de Almeida</i> <sup>1</sup><br><sup>1</sup> Federal Institute of Education, Science and Technology of Ceará (IFCE)                                                                                                                                  |
| 902 [B.I.8]   | EMPOWERING SOLAR INNOVATION IN MALTA: FROM SKILLS DEVELOPMENT TO REAL-TIME PV DATA INFRASTRUCTURE<br><i>Brian Azzopardi</i> <sup>1</sup> , <i>Brian Bartolo</i> <sup>1</sup> , <i>Vlad Costea</i> <sup>1</sup> , <i>Austeja Mockeviciute-Azzopardi</i> <sup>1</sup><br><sup>1</sup> The Foundation for Innovation and Research - Malta (FIR.MT)                                                                                                                                                                                          |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 02: SOLAR HEATING AND COOLING - PART 1/2

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 52 [A.I.2]   | TECHNICAL ASSESSMENT OF SOLAR-ASSISTED REFRIGERATION USING PARABOLIC TROUGH COLLECTORS IN A MEXICAN PHARMACEUTICAL FACILITY<br><u>Eduardo González Mora</u> <sup>1</sup> , <u>Maria Dolores Duran García</u> <sup>1</sup><br><sup>1</sup> <i>Universidad Autónoma del Estado de México</i>                                                                                                                                                                                                         |
| 123 [D.I.12] | LIFE CYCLE ASSESSMENT (LCA) AND LIFE CYCLE COSTING (LCC) ANALYSIS FOR EXISTING AND NEW CONTAINER CONCEPTS OF ICE STORES FOR COLD SOLAR DISTRICT HEATING NETWORKS<br><u>Stephan Lang</u> <sup>1</sup> , <u>Stefanie Lott</u> <sup>1</sup> , <u>Harald Drück</u> <sup>1</sup> , <u>Jonas Hilpert</u> <sup>2</sup> , <u>Corinna Leonhardt</u> <sup>3</sup><br><sup>1</sup> IGTE - University of Stuttgart; <sup>2</sup> Viessmann Deutschland GmbH; <sup>3</sup> Viessmann Holding International GmbH |
| 137 [C.II.8] | FEASIBILITY STUDY OF CONCENTRATING SOLAR THERMAL (CST) PLANT FOR PROCESS HEAT APPLICATION IN TEXTILE INDUSTRY<br><u>Dwipen Boruah</u> <sup>1</sup><br><sup>1</sup> <i>Global Sustainable Energy Solutions (GSES)</i>                                                                                                                                                                                                                                                                               |
| 138 [B.II.2] | DESIGN OF A COMPACT FRESNEL SYSTEM FOR OPTIMIZATION OF INDUSTRIAL PROCESSES<br><u>Marco Antonio Gonzalez Martinez</u> <sup>1</sup> , <u>Maria Dolores Duran García</u> <sup>1</sup> , <u>Eduardo González Mora</u> <sup>1</sup><br><sup>1</sup> <i>Universidad del Estado de México</i>                                                                                                                                                                                                            |
| 148 [D.I.9]  | FMI-BASED CO-SIMULATION FRAMEWORK FOR FROST PREVENTION AND SUPPLY AIR BOOSTING IN MVHR SYSTEMS WITH RENEWABLES INTEGRATION<br><u>Youssef Elomari</u> <sup>1</sup> , <u>Zeng Peng</u> <sup>1</sup> , <u>Qian Wang</u> <sup>1</sup><br><sup>1</sup> <i>KTH Royal Institute of Technology</i>                                                                                                                                                                                                         |
| 154 [B.I.1]  | HEAT TRANSFER PERFORMANCE ANALYSIS OF A P-TYPE RIBBED SOLAR AIR HEATER (P-SAH)<br><u>Sachindra Kumar Rout</u> <sup>1</sup> , <u>Sanjib Kumar Rout</u> <sup>1</sup> , <u>Suvaranjan Sutar</u> <sup>1</sup><br><sup>1</sup> <i>C V Raman Global University, Bhubaneswar, India</i>                                                                                                                                                                                                                   |
| 211 [C.I.5]  | AIR-PVT IN SOLAR COOLING SYSTEMS: A FEASIBILITY STUDY<br><u>Giorgos Philip Aspetakis</u> <sup>1</sup> , <u>Qian Wang</u> <sup>1</sup><br><sup>1</sup> <i>KTH Royal Institute of Technology</i>                                                                                                                                                                                                                                                                                                     |
| 301 [C.I.1]  | STANDARDS, CERTIFICATION AND TRAINING NEEDS FOR SOLAR WATER HEATERS<br><u>Jianhua Fan</u> <sup>1</sup> , <u>Elsabet Nielsen</u> <sup>1</sup> , <u>Pengcheng Wang</u> <sup>1</sup> , <u>Simon Furbo</u> <sup>1</sup><br><sup>1</sup> <i>Technical University of Denmark</i>                                                                                                                                                                                                                         |
| 419 [B.II.4] | GENERAL INCIDENT ANGLE MODIFIER MODEL FOR QUASI-DYNAMIC TESTING OF SOLAR THERMAL COLLECTORS<br><u>Juan Manuel Rodríguez Muñoz</u> <sup>1</sup> , <u>Italo Bove</u> <sup>1</sup> , <u>Pedro Andrés Galione Klot</u> <sup>1</sup><br><sup>1</sup> <i>Laboratorio de Energía Solar de la Universidad de la República</i>                                                                                                                                                                              |
| 475 [B.I.9]  | USE OF STAINLESS-STEEL TUBES TO REPLACE THE USUAL COPPER TUBES IN FLAT PLATE SOLAR COLLECTORS IN THE BRAZILIAN SOLAR THERMAL MARKET: OVERVIEW AND IMPACT ON ENERGY EFFICIENCY<br><u>Paulo José Schiavon Ara</u> <sup>1</sup> , <u>Daniel Setrak Sowmy</u> <sup>1</sup><br><sup>1</sup> <i>Instituto de Pesquisas Tecnológicas de São Paulo</i>                                                                                                                                                     |
| 538 [B.I.3]  | INFLUENCE OF THERMAL STORAGE TANK SIZING ON THE PERFORMANCE OF PHOTOVOLTAIC-THERMAL SYSTEMS<br><u>Rafael William Cuceneli Faleiros</u> <sup>1</sup> , <u>Júlio César Passos</u> <sup>1</sup> , <u>Bruna de Oliveira Busson</u> <sup>1</sup><br><sup>1</sup> <i>Universidade Federal de Santa Catarina</i>                                                                                                                                                                                          |
| 590 [A.I.10] | AN ALL-IN-ONE, HARMONIZED PLANNING-TO-DIGITAL TWIN TOOL FOR RENEWABLE ENERGY SYSTEMS<br><u>Ignacio Gurruchaga</u> <sup>1</sup> , <u>Daniel Carboneil</u> <sup>2</sup> , <u>Damian Birchler</u> <sup>1</sup> , <u>Andreas Häberle</u> <sup>1</sup><br><sup>1</sup> SPF Institute for Solar Technology, Eastern Switzerland University of Applied Sciences; <sup>2</sup> DCARBO Energy Consulting S.L.                                                                                               |
| 621 [A.I.8]  | ASSESSMENT OF LOW-TEMPERATURE PCM EMULSIONS AS TES<br><u>Mónica Delgado Gracia</u> <sup>1</sup> , <u>Xiaolin Qiu</u> <sup>2</sup> , <u>Ana Lázaro</u> <sup>1</sup><br><sup>1</sup> <i>University of Zaragoza-I3A</i> ; <sup>2</sup> <i>Jiangnan University</i>                                                                                                                                                                                                                                     |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 02: SOLAR HEATING AND COOLING - PART 2/2

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 624 [B.II.10] | TECHNO-ECONOMIC ASSESSMENT OF THE USE OF HYBRID SOLAR COLLECTORS IN INDUSTRIAL FACILITIES - A CASE STUDY FOR THE FOOD INDUSTRIAL SECTOR<br><i>João Pereira Cardoso<sup>1</sup>, David Salema<sup>1</sup>, Iván Patricio Acosta Pazmiño<sup>2</sup>, António Arto<sup>3</sup>, Damu Murali<sup>2</sup>, João Gomes<sup>2</sup>, José Manuel Pereira Mendes<sup>4</sup>, João Pedro Marques Correia Santos<sup>4</sup>, Jorge Facão<sup>1</sup></i><br><sup>1</sup> Laboratório Nacional de Energia e Geologia, I.P.; <sup>2</sup> Department of Building Engineering, Energy Systems and Sustainable Science, University of Gävle; <sup>3</sup> MG Sustainable Engineering AB; <sup>4</sup> ESIP- European Seafood Investments Portugal, S.A. |
| 659 [C.II.11] | DESIGN AND SIMULATION OF INSTITUTIONAL SOLAR-POWERED COOK STOVE WITH THERMAL ENERGY STORAGE SYSTEM<br><i>Kamil Dino Adem<sup>1</sup>, Tihun Birhanu Beyene<sup>1</sup>, Abdulkadir Aman Hassen<sup>1</sup></i><br><sup>1</sup> School of Mechanical and Industrial Engineering, Addis Ababa Institute of Technology, Addis Ababa University, Addis Ababa, Ethiopia                                                                                                                                                                                                                                                                                                                                                                           |
| 742 [C.I.3]   | RAY TRACING ANALYSIS OF CPC-HEAT PIPE COLLECTORS FOR INDUSTRIAL LOW- AND MID-TEMPERATURE HEAT PRODUCTION USING REFLECTORS OF DIFFERENT MATERIALS AND GEOMETRIES<br><i>Italo Bove<sup>1</sup>, Sebastián Andrés Lillo Órdenes<sup>2</sup>, Renzo Guido Cruz<sup>1</sup>, Loreto Valenzuela<sup>3</sup>, Pedro Andrés Galione Klot<sup>1</sup></i><br><sup>1</sup> Facultad de Ingeniería, Universidad de la República; <sup>2</sup> Völfer Ingeniería; <sup>3</sup> Plataforma Solar de Almería - CIEMAT                                                                                                                                                                                                                                      |
| 778 [C.I.9]   | ELECTRIFICATION OF INDUSTRIAL PROCESS HEAT USING HEAT PUMPS AND PHOTOVOLTAIC SYSTEMS<br><i>Fernando de Brida Alves<sup>1</sup>, Allan R. Starke<sup>1</sup>, Vinicius Rugeri Borges Bonini<sup>1</sup></i><br><sup>1</sup> Federal University of Santa Catarina                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 884 [B.II.7]  | SHIPCAL-CL: IMPROVING THE SIMULATION OF SOLAR THERMAL SYSTEMS FOR INDUSTRIAL PROCESSES IN CHILE<br><i>Adrian Riebel<sup>1</sup>, Cristian Cortes Aguirre<sup>1</sup>, Raimundo León<sup>1</sup>, Jose Miguel Cardemil<sup>1</sup>, Rodrigo Escobar<sup>1</sup></i><br><sup>1</sup> Pontificia Universidad Católica de Chile                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 887 [C.II.12] | DESIGN, AND EXPERIMENTAL INVESTIGATION OF INDIRECT SOLAR THERMAL COOKER FOR STREET FOOD COOKING<br><i>Zelalem Teshome<sup>1</sup>, Abdulkadir Aman Hassen<sup>2</sup></i><br><sup>1</sup> Dire Dawa University; <sup>2</sup> Addis Ababa University                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 898 [C.II.2]  | DYNAMIC SIMULATION OF SOLAR-ASSISTED AIR-SOURCE DUAL-LOAD HEAT PUMP SYSTEM FOR BUILDING SPACE HEATING AND COOLING<br><i>Fabian Chidubem Eze<sup>1</sup>, Wangje Lee<sup>2</sup>, Young Sub An<sup>2</sup>, Hongjin Joo<sup>2</sup>, Kyoung-Ho Lee<sup>2</sup>, Julius Ogola<sup>1</sup>, Julius M. Mwabora<sup>1</sup></i><br><sup>1</sup> University of Nairobi; <sup>2</sup> Renewable Energy System Laboratory, Korea Institute of Energy Research                                                                                                                                                                                                                                                                                        |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 05: BEYOND SOLAR: OTHER RENEWABLES AND ASSOCIATED APPLICATIONS, COMPONENTS, SIMULATION AND ANALYSIS - PART 1/2

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 91 [H.II.1]   | GEOSPATIAL CLUSTERING OF WIND/SOLAR POTENTIAL: IDENTIFYING HIGH-YIELD AREAS IN CEARÁ, NORTHEAST BRAZIL<br><u>Igor Hammom Rodrigues da Costa</u> <sup>1</sup> , <u>Maria Ilana dos Santos Guedes</u> <sup>2</sup> , <u>Paulo Honorio Filho</u> <sup>1</sup> , <u>Ernande Eugenio Campelo Moraes</u> <sup>1</sup> , <u>Dalton Honorio</u> <sup>1</sup><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Imperial College London                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 114 [H.II.8]  | ANALYSIS OF SMALL-SCALE WIND TURBINE BLADES FOR OPTIMAL POWER GENERATION: A CFD-BEM STUDY<br><u>Jasson Fernandez Gurgel</u> <sup>1</sup> , <u>Pedro Lucas Barros Martins</u> <sup>1</sup> , <u>Carla Freitas de Andrade</u> <sup>1</sup> , <u>Francisco Olimpio Moura Carneiro</u> <sup>2</sup> , <u>Francisco Nivaldo Aguiar Freire</u> <sup>1</sup> , <u>Felipe Cordeiro de Sousa</u> <sup>1</sup><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade da Integração Internacional da Lusofonia Afro-Brasileira                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 167 [B.I.11]  | PHYSICOCHEMICAL CHARACTERIZATION OF MACAÚBA (ACROCOMIA ACULEATA) FOCUSING ON ENERGY APPLICATIONS<br><u>Kennedy Romualdo Guedes Coimbra</u> <sup>1</sup> , <u>Eva Furtado de Sousa</u> <sup>1</sup> , <u>Mauricio Dorneles Lima</u> <sup>1</sup> , <u>Paloma Cavalcante Silva</u> <sup>1</sup> , <u>Francisco Assis Bezerra da Cunha</u> <sup>2</sup> , <u>Maria Alexandra de Sousa Rios</u> <sup>1</sup><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade Regional do Cariri                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 183 [I.II.1]  | NEURAL NETWORK-DRIVEN OPTIMIZATION: ENHANCING SPEED IN ENERGY SYSTEMS<br><u>Theresa Reinhardt</u> <sup>1</sup> , <u>Viktor Wesselak</u> <sup>1</sup> , <u>Rohith Krishnan Bala Krishnan</u> <sup>1</sup> , <u>Christoph Schmidt</u> <sup>1</sup> , <u>Sebastian Voswinckel</u> <sup>1</sup><br><sup>1</sup> Hochschule Nordhausen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 244 [I.II.5]  | UTILIZATION OF EXCESS ENERGY IN PHOTOVOLTAIC PLANTS CAUSED BY CLIPPING: EFFICIENCY COMPARISON BETWEEN BATTERY AND GREEN HYDROGEN STORAGE SOLUTIONS<br><u>Beatriz Souza Horn</u> <sup>1</sup> , <u>Orlando Soares</u> <sup>2</sup> , <u>Paulo Brito</u> <sup>3</sup><br><sup>1</sup> Polytechnic Institute of Bragança - IPB and Portalegre Polyth Polytechnic University - IPP; <sup>2</sup> Polytechnic Institute of Bragança - IPB; <sup>3</sup> Portalegre Polyth Polytechnic University - IPP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 271 [E.I.12]  | THERMAL AND CHEMICAL ANALYSIS OF TWO-STAGE THERMOCHEMICAL PROCESS BASED ON CeO <sub>2</sub> IN SOLAR THERMOCHEMICAL REACTOR<br><u>Jasurjon Akhatov</u> <sup>1</sup> , <u>Khushdil Akhmadov</u> <sup>1</sup><br><sup>1</sup> Physical-Technical Institute of the Academy of Sciences of Uzbekistan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 289 [H.II.12] | THE ROLE OF WASTE HEAT RECOVERY IN ENHANCING POWER-TO-HYDROGEN AND POWER-TO-METHANE SYSTEMS<br><u>Malin Claudia Siegwart</u> <sup>1</sup> , <u>Judit Tomás Verde</u> <sup>1</sup> , <u>Curtis Meister</u> <sup>1</sup> , <u>Jörg Worlitschek</u> <sup>1</sup><br><sup>1</sup> Lucerne University of Applied Sciences and Arts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 341 [J.I.8]   | EFFICIENT HEATING FOR HIGH ALTITUDE HOUSING IN PERU<br><u>Ajay Dalal</u> <sup>1</sup> , <u>Walter Daniel Leon Salas</u> <sup>1</sup> , <u>William Hutzel</u> <sup>1</sup> , <u>Pedro Flores Larico</u> <sup>2</sup> , <u>Miguel Angel Vizcardo Cornejo</u> <sup>2</sup> , <u>Mauricio Postigo Malaga</u> <sup>2</sup> , <u>Miguel Angel Ocharan Pichu</u> <sup>2</sup><br><sup>1</sup> Purdue University; <sup>2</sup> Universidad Nacional de San Agustín de Arequipa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 359 [H.II.10] | SOLAR ENERGY FORECASTING USING NEURAL NETWORKS: INSIGHTS FROM REAL SYSTEMS IN THE AMAZON REGION<br><u>Maykon Silva Carvalho</u> <sup>1</sup> , <u>Fábio de Lima Bezerra</u> <sup>1</sup> , <u>Licinius Dimitri Sá de Alcantara</u> <sup>1</sup><br><sup>1</sup> Federal Rural University of Amazon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 490 [I.II.8]  | OPTIMIZATION OF GREEN HYDROGEN PRODUCTION IN AN ALKALINE ELECTROLYZER<br><u>Maria Gabriela Chagas de Oliveira</u> <sup>1</sup> , <u>Caio Vinicius Pinheiro Vital</u> <sup>1</sup> , <u>Luis Arturo Gómez Malagón</u> <sup>1</sup><br><sup>1</sup> Universidade de Pernambuco                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 555 [J.I.11]  | SIZING AND PRELIMINARY EVALUATION OF THE DYNAMICS OF A PHOTOVOLTAIC SOLAR ENERGY GENERATION, CONDITIONING, AND STORAGE SUBSYSTEM DEDICATED TO GREEN HYDROGEN PRODUCTION<br><u>Pedro Henrique de Lima Gomes</u> <sup>1</sup> , <u>Mario Genivan Aguiar Soares</u> <sup>2</sup> , <u>Joao Pedro Melo Santos Martins</u> <sup>1</sup> , <u>Vivian Carvalho de Araújo</u> <sup>1</sup> , <u>Tobias Paixão Tavares</u> <sup>1</sup> , <u>Vinicius de Carvalho Araújo</u> <sup>1</sup> , <u>Gustavo Ellton de Oliveira Costa Teixeira</u> <sup>1</sup> , <u>Daniel Silveira Serra</u> <sup>1</sup> , <u>Carla Freitas de Andrade</u> <sup>2</sup> , <u>Concepción Caravaca Moreno</u> <sup>3</sup> , <u>Rita Ximena Valenzuela Balderrama</u> <sup>3</sup> , <u>Mona Lisa Moura de Oliveira</u> <sup>1</sup><br><sup>1</sup> Universidade Estadual do Ceará; <sup>2</sup> Universidade Federal do Ceará; <sup>3</sup> Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 05: BEYOND SOLAR: OTHER RENEWABLES AND ASSOCIATED APPLICATIONS, COMPONENTS, SIMULATION AND ANALYSIS - PART 2/2

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 601 [H.I.11] | SOL-DAZE: AI-DRIVEN SMART SOLAR WITH INTEGRATED STORAGE FOR DECENTRALIZED AUTONOMOUS ZERO EMISSION FUTURE - TECHNO ECONOMIC ANALYSIS<br><i>Mikel Martín Zazpe<sup>1</sup>, Sathish Kumar<sup>2</sup>, João Gomes<sup>1</sup>, Miguel Lança<sup>3</sup></i><br><sup>1</sup> Höskolan i Gävle; <sup>2</sup> MG Sustainable Engineering AB; <sup>3</sup> Instituto Superior de Engenharia de Lisboa                                                                               |
| 617 [I.I.3]  | SCIENTIFIC MAPPING AND BIBLIOMETRIC ANALYSIS OF DESICCANT DRYING RESEARCH<br><i>Thais Dutra de Lima<sup>1</sup>, William Magalhães Barcellos<sup>1</sup>, Carla Freitas de Andrade<sup>1</sup>, Francisco Nivaldo Aguiar Freire<sup>1</sup>, Ana Fabíola Leite Almeida<sup>1</sup>, William Neves da Silva<sup>2</sup></i><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade Federal de Santa Catarina                                                  |
| 638 [H.I.9]  | SOLAR ENERGY AND ENERGY STORAGE IN URBAN LOW ENERGY RENOVATION PAVES THE WAY FOR URBAN ENERGY COMMUNITIES IN THE NETHERLANDS<br><i>Jan Michiel Boonstra<sup>1</sup>, Dennie Bloem<sup>2</sup></i><br><sup>1</sup> Trecodome BV; <sup>2</sup> Bloem Engineering Energy                                                                                                                                                                                                          |
| 754 [A.I.4]  | APPLICATION OF MACHINE LEARNING (KNN) WITH AUTOHYPERPARAMETER TUNING FOR HYDROGEN PRODUCTION PROBABILISTIC FORECASTING FROM WIND ENERGY<br><i>Tainan Sousa Viana<sup>1</sup>, Paulo Alexandre Costa Rocha<sup>1</sup>, Carla Freitas de Andrade<sup>1</sup>, Andre Valente Bueno<sup>1</sup>, Jesse Van Griensven Thé<sup>2</sup></i><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> University of Guelph                                                         |
| 769 [B.I.12] | PROXIMATE ANALYSIS AND HIGHER HEATING VALUE OF WASTE BIOMASS BLENDS: AN ENERGETIC APPROACH<br><i>Eva Furtado de Sousa<sup>1</sup>, Kennedy Romualdo Guedes Coimbra<sup>1</sup>, Mauricio Dorneles Lima<sup>1</sup>, Paloma Cavalcante Silva<sup>1</sup>, Maria Alessandra de Sousa Rios<sup>1</sup></i><br><sup>1</sup> Universidade Federal do Ceará                                                                                                                          |
| 777 [J.I.4]  | FEASIBILITY OF GREEN HYDROGEN STORAGE IN CHILE: INFLUENCE OF ELECTROLYSIS TYPE, SOLAR IRRADIANCE, AND STORAGE TECHNOLOGY<br><i>Roberto Leiva-Illanes<sup>1</sup></i><br><sup>1</sup> Universidad Técnica Federico Santa María                                                                                                                                                                                                                                                  |
| 876 [I.I.9]  | METHODOLOGY FOR THE EVALUATION OF STATIC LOADS ON BIFACIAL MODULES USING A TEST BENCH<br><i>Clara Caroline de Araujo Azevedo<sup>1</sup>, Bruno do Nascimento e Silva<sup>1</sup>, Plínio José de Oliveira<sup>1</sup>, Samira de Azevedo Santos Emiliavaca<sup>1</sup>, Italo Sabino Arrais Bezerra<sup>2</sup>, Luan Bernardo<sup>1</sup></i><br><sup>1</sup> Instituto Senai de Inovação em Energias Renováveis (ISI-ER); <sup>2</sup> Instituto Tecnológico de Aeronáutica |
| 878 [J.I.2]  | SENSITIVITY ANALYSIS OF ONE-PHASE AND TWO-PHASE 1D PBTEs MODELS TO THERMAL PROPERTIES MODELING OF COPPER SLAG<br><i>Valentina Constanza Segovia Araya<sup>1</sup>, Ignacio Calderon Vasquez<sup>1</sup>, Jose Miguel Cardemil<sup>1</sup></i><br><sup>1</sup> Pontificia Universidad Católica de Chile                                                                                                                                                                         |
| 886 [A.I.5]  | PREDICTING HYDROGEN PRODUCTION USING XGBOOST: A COMPARATIVE STUDY OF ENERGY CONVERSION SCENARIOS<br><i>Diosael Ferreira Sacramento<sup>1</sup>, Tainan Sousa Viana<sup>1</sup>, Paulo Alexandre Costa Rocha<sup>1</sup></i><br><sup>1</sup> Federal University of Ceará                                                                                                                                                                                                        |
| 895 [H.II.4] | ON THE THERMAL INTEGRATION OF NUCLEAR HEAT IN A SOLAR THERMAL PLANT FOR CONTINUOUS THERMOCHEMICAL PROCESSES<br><i>Hernando Romero Paredes Rubio<sup>1</sup>, Juan Daniel Macias<sup>1</sup>, José Miguel Berrio Sánchez<sup>1</sup>, Lizbeth Monserrat Martínez Rojas<sup>1</sup>, Gilberto Espinosa Paredes<sup>1</sup></i><br><sup>1</sup> Universidad Autónoma Metropolitana Iztapalapa                                                                                     |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 06: RENEWABLE SYSTEMS APPLICATIONS - PART 1/3

|               |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 69 [F.II.8]   | SOLAR TECHNOLOGY SOILING R&D: HISTORY, PROGRESS, STATUS, AND TRENDS<br><u>Lawrence L. Kazmerski</u> <sup>1</sup> , <u>Suellen C.S. Costa</u> <sup>2</sup> , <u>Daniel Sena Braga</u> <sup>3</sup> , <u>Antonia Sônia A.C. Diniz</u> <sup>3</sup><br><sup>1</sup> RASEI, University of Colorado Boulder; <sup>2</sup> Matrix Energia; <sup>3</sup> Pontifícia Universidade Católica de Minas Gerais (PUC Minas)              |
| 163 [G.I.9]   | TECHNO-ECONOMIC ANALYSIS OF A SOLAR THERMAL WATER PREHEATING SYSTEM FOR A 5 MW ELECTROLYZER IN PECÉM, BRAZIL<br><u>Marcos Souto Lopes Bezerra</u> <sup>1</sup> , <u>Gustavo Azevedo Diogenes</u> <sup>1</sup> , <u>Maria do Socorro Santos Sousa</u> <sup>1</sup> , <u>Paulo Henrique Pereira Silva</u> <sup>1</sup><br><sup>1</sup> Universidade de Fortaleza                                                              |
| 204 [H.I.5]   | PARTICIPATORY GIS TOOL TO DEVELOP LAND-BASED SOLAR ENERGY SCENARIOS: THE EXAMPLE OF A BLACK FOREST DISTRICT IN GERMANY<br><u>Elham Fakharizadehshirazi</u> <sup>1</sup> , <u>Christine Rösch</u> <sup>1</sup><br><sup>1</sup> KIT                                                                                                                                                                                           |
| 220 [E.II.3]  | TECHNICAL AND ECONOMIC EVALUATION OF IMPLEMENTING A PHOTOVOLTAIC POWER PLANT IN RIO DE JANEIRO, BRAZIL: FIXED STRUCTURE VS. SOLAR TRACKER SYSTEMS<br><u>Annelys Machado Schetinger</u> <sup>1</sup> , <u>Caio Filipe Glatthardt Barbato</u> <sup>1</sup> , <u>João Pedro Rabello de Paula Carvalho</u> <sup>1</sup> , <u>Amaro Olimpio Pereira Junior</u> <sup>1</sup><br><sup>1</sup> Federal University of Rio de Janeiro |
| 222 [F.II.10] | SOLAR ENERGY IN SCHOOLS: A BIBLIOMETRIC REVIEW ON THE POTENTIAL AND CHALLENGES OF PHOTOVOLTAIC SYSTEMS IN THE EDUCATIONAL ENVIRONMENT<br><u>Leandro Fernandes Pereira</u> <sup>1</sup> , <u>Albemerc Moura de Moraes</u> <sup>2</sup><br><sup>1</sup> Universidade Estadual do Ceará; <sup>2</sup> Universidade Federal do Piauí                                                                                            |
| 231 [E.II.4]  | ANALYSIS OF SOYBEAN BEHAVIOR WHEN INSERTED IN AN AGRIVOLTAIC SYSTEM<br><u>Bruno Jacomet Vieira</u> <sup>1</sup> , <u>Alex Renan Arrifano Manito</u> <sup>1</sup> , <u>Marcelo Pinho Almeida</u> <sup>1</sup> , <u>Maurício Roberto Cherubin</u> <sup>2</sup> , <u>Roberto Zilles</u> <sup>1</sup><br><sup>1</sup> IEE-USP; <sup>2</sup> ESALQ-USP                                                                           |
| 241 [E.II.10] | FORECASTING PHOTOVOLTAIC ENERGY GENERATION USING XGBOOST: A CASE STUDY IN MARISCAL ESTIGARRIBIA, PARAGUAY<br><u>Eduardo Jose Riquelme Portillo</u> <sup>1</sup> , <u>Angel Rincon Rodriguez</u> <sup>1</sup><br><sup>1</sup> Engineering Faculty of National University of Asuncion                                                                                                                                         |
| 258 [F.I.6]   | IMPACTS FROM BEST PRACTICES APPLIED IN A SOLAR COOKING INITIATIVE AT KAKUMA REFUGEE CAMP, KENYA<br><u>Alan Bigelow</u> <sup>1</sup> , <u>Caitlyn Hughes</u> <sup>1</sup><br><sup>1</sup> Solar Cookers International                                                                                                                                                                                                        |
| 279 [F.II.2]  | FINANCIAL VIABILITY ANALYSIS OF A COMBINED ENERGY SYSTEM WITH RENEWABLES FOR A HOTEL IN JOÃO PESOA<br><u>José Luciano Batista Moreira</u> <sup>1</sup> , <u>Eduardo Antonio Pina</u> <sup>2</sup> , <u>Adriano da Silva Marques</u> <sup>1</sup> , <u>Monica Carvalho</u> <sup>1</sup><br><sup>1</sup> UFPB; <sup>2</sup> EPFL                                                                                              |
| 287 [G.I.7]   | TRACKING SYSTEM FOR PARABOLIC DISH SOLAR CONCENTRATOR: DEVELOPMENT AND EVALUATION<br><u>Marco Damasceno de Sousa</u> <sup>1</sup> , <u>Adriano da Silva Marques</u> <sup>1</sup> , <u>João Pedro Cruz de Almeida</u> <sup>1</sup> , <u>Leonardo Pereira de Lucena Silva</u> <sup>2</sup><br><sup>1</sup> Federal University of Paraíba; <sup>2</sup> Federal Institute of Paraíba - IFPB                                    |
| 294 [G.II.8]  | AUTOMATED IRRIGATION WITH PHOTOVOLTAIC SYSTEM: SUSTAINABILITY AND EFFICIENCY IN THE RURAL AREAS OF PIAUÍ STATE<br><u>Renato Alexandre da Silva</u> <sup>1</sup> , <u>Jucyara Simplicio dos Santos</u> <sup>1</sup> , <u>Wilmar Lemos Maranhão Neto</u> <sup>1</sup> , <u>Andressa Vivia Rodrigues de Carvalho</u> <sup>1</sup><br><sup>1</sup> UESPI                                                                        |
| 295 [E.I.11]  | REGIONAL SOLAR THERMAL POTENTIAL IN UZBEKISTAN: INSIGHTS FROM USEFUL HEAT GAIN USING NANOFLUIDS<br><u>Dilshod Jalilov</u> <sup>1</sup> , <u>Tukhtamurod Juraev</u> <sup>1</sup> , <u>Akbar Halimov</u> <sup>1</sup> , <u>Jasurjon Akhatov</u> <sup>1</sup><br><sup>1</sup> Physical-Technical Institute of the Academy of Sciences of Uzbekistan                                                                            |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 06: RENEWABLE SYSTEMS APPLICATIONS - PART 2/3

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 322 [J.I.10]  | PRODUCTION OF SMALL WIND TURBINE BLADES BY 3D PRINTING: A DEVELOPED STUDY BASED ON ENERGY EFFICIENCY AND RENEWABLE ENERGY SOURCES<br><i>Joana Evelyn Queiroz de Sousa</i> <sup>1</sup> , <i>Alexandre Sales Costa</i> <sup>1</sup> , <i>Carla Freitas de Andrade</i> <sup>1</sup> , <i>Francisco Olimpio Moura Carneiro</i> <sup>2</sup> , <i>Mona Lisa Moura de Oliveira</i> <sup>3</sup><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade da Integração Internacional da Lusofonia Afro-Brasileira; <sup>3</sup> Universidade Estadual do Ceará |
| 372 [G.II.5]  | MATHEMATICAL MODELLING AND VALIDATION OF PEM ELECTROLYZER INTEGRATED WITH A STORAGE SYSTEM<br><i>Nayrana Daborer-Prado</i> <sup>1</sup> , <i>Lukas Gaisberger</i> <sup>1</sup><br><sup>1</sup> University of Applied Sciences Upper Austria                                                                                                                                                                                                                                                                                                                               |
| 389 [G.II.12] | EXPLORING THE POTENTIAL OF BIDIRECTIONAL CHARGING IN RESIDENTIAL BUILDINGS IN GERMANY AND BRAZIL WITH A SIMULATION TOOL<br><i>Moritz End</i> <sup>1</sup> , <i>Tobias Rehm</i> <sup>1</sup> , <i>Amanda Mendes Ferreira Gomes</i> <sup>2</sup> , <i>Lukas Hilger</i> <sup>1</sup> , <i>Aline Kirsten Vidal de Oliveira</i> <sup>2</sup> , <i>Ricardo Rüther</i> <sup>2</sup> , <i>Thorsten Schneiders</i> <sup>1</sup><br><sup>1</sup> University of Applied Sciences Cologne; <sup>2</sup> Solar Energy Research Laboratory Fotovoltaica/UFSC                            |
| 425 [G.II.3]  | SUNLIGHT HOURS AS A GUIDE: ENHANCING CROP SELECTION IN AGRIVOLTAIC FIELDS<br><i>Victória Maschio Chaga</i> <sup>1</sup> , <i>Laís Cassanta Vidotto</i> <sup>1</sup> , <i>Isadora Pauli Custódio</i> <sup>1</sup> , <i>Marília Braga</i> <sup>1</sup> , <i>Ricardo Rüther</i> <sup>1</sup><br><sup>1</sup> Fotovoltaica/UFSC Laboratory                                                                                                                                                                                                                                    |
| 521 [G.I.1]   | EVALUATION OF AGRICULTURAL SOLAR DRYER PERFORMANCE WITH RADIATION INTENSITY<br><i>Leonel Augusto Calliari Poltosi</i> <sup>1</sup> , <i>Victor Emmanuel de Oliveira Gomes</i> <sup>1</sup> , <i>Vitor Camargo Nardelli</i> <sup>1</sup><br><sup>1</sup> SENAI RS Centro de Competência em Agricultura Digital                                                                                                                                                                                                                                                             |
| 524 [H.I.2]   | CHARACTERIZATION OF SECOND-LIFE LITHIUM-ION BATTERIES FROM A SOLAR-POWERED ELECTRIC BUS FOR STATIONARY APPLICATIONS<br><i>Matheus Hohmann</i> <sup>1</sup> , <i>Aline Kirsten Vidal de Oliveira</i> <sup>1</sup> , <i>Lucas Augusto Zanicoski Sergio</i> <sup>1</sup> , <i>Daniel Odilio dos Santos</i> <sup>1</sup> , <i>Leonardo Freire Pacheco</i> <sup>2</sup> , <i>Helena Flávia Napolini</i> <sup>1</sup> , <i>Ricardo Rüther</i> <sup>1</sup><br><sup>1</sup> Fotovoltaica/UFSC Laboratory; <sup>2</sup> CELESC - Centrais Elétricas de Santa Catarina             |
| 556 [F.I.1]   | ASSESSMENT OF PERFORMANCE AND SCALABILITY OF A SOLAR PUMPING SYSTEM FOR SUSTAINABLE AGRICULTURAL IRRIGATION IN URUGUAY<br><i>Alejandra Salome Morales Presa</i> <sup>1</sup><br><sup>1</sup> UTEC                                                                                                                                                                                                                                                                                                                                                                         |
| 644 [F.I.11]  | EXPERIMENTAL PERFORMANCE ANALYSIS OF A THERMAL ENERGY STORAGE USING PHASE CHANGE MATERIALS FOR FLEXIBLE SECTOR COUPLING IN NORDIC CLIMATES<br><i>Aditya Singh Suswal</i> <sup>1</sup> , <i>Saman Nimali Gunasekara</i> <sup>1</sup> , <i>Tomás Vieira Rocha</i> <sup>2</sup> , <i>Justin Chiu</i> <sup>1</sup> , <i>Bjorn Palm</i> <sup>1</sup> , <i>Per Lundqvist</i> <sup>1</sup><br><sup>1</sup> KTH Royal Institute of Technology; <sup>2</sup> Faculdade de Engenharia da Universidade do Porto (FEUP)                                                               |
| 704 [G.II.10] | SENSITIVITY ANALYSIS OF IRRADIANCE IN AGRIVOLTAIC SYSTEMS FOR DIFFERENT CONFIGURATIONS OF THE PHOTOVOLTAIC GENERATOR<br><i>Ronald Barrientos Campos</i> <sup>1</sup> , <i>Marcelo Pinho Almeida</i> <sup>2</sup> , <i>Mónica Marcela Gómez León</i> <sup>1</sup><br><sup>1</sup> Universidad Nacional de Ingeniería del Perú; <sup>2</sup> Universidade de São Paulo                                                                                                                                                                                                      |
| 731 [A.I.11]  | SOPHIA OFF-GRID SOLAR POWERED SYSTEMS FOR HEALTHCARE IN AFRICA: COOLING, HEATING, AND CLEAN WATER<br><i>Md Mahfizur Rahman</i> <sup>1</sup> , <i>Lukas Omlin</i> <sup>1</sup> , <i>Yvonne Isabell Baeuerle</i> <sup>1</sup> , <i>Mihaela Dudita-Kauffeld</i> <sup>1</sup> , <i>Andreas Häberle</i> <sup>1</sup><br><sup>1</sup> SPF Institute for Solar Technology                                                                                                                                                                                                        |
| 791 [G.I.11]  | FIELD TESTING OF A SOLAR PASTEURIZER PROTOTYPE WITH AUTOMATED FLOW CONTROL<br><i>Marcos Vinícius Medeiros Araújo</i> <sup>1</sup> , <i>Lucas Costa Fernandes</i> <sup>1</sup> , <i>Artur Rocha Albuquerque</i> <sup>1</sup> , <i>Taciano Amaral Sorrentino</i> <sup>1</sup><br><sup>1</sup> Universidade Federal Rural do Semi-Árido                                                                                                                                                                                                                                      |
| 799 [F.I.3]   | A FORECASTING ENSEMBLE MODEL BASED ON TRANSFER LEARNING FOR ENERGY SUPPLIER FROM PROFILE GEOMETRIES OF WIND TURBINES<br><i>Jasson Fernandez Gurgel</i> , <i>Felipe Cordeiro de Sousa</i> , <i>Pedro Lucas Barros Martins</i> , <i>Carla Freitas de Andrade</i> , <i>Francisco Olimpio Moura Carneiro</i><br><i>Universidade Federal do Ceará</i>                                                                                                                                                                                                                          |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 06: RENEWABLE SYSTEMS APPLICATIONS - PART 3/3

|              |                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 806 [G.I.4]  | PHOTOVOLTAIC TECHNOLOGIES IN AGRIVOLTAIC SYSTEMS: A GLOBAL SYSTEMATIC REVIEW (2019-2024)<br><i>Lucas Alejandro Schiavoni Garracini</i> <sup>1</sup> , <i>Ramiro García Orrego</i> <sup>1</sup> , <i>Allan Braz da Silva Santos</i> <sup>1</sup> , <i>Vívian Teixeira-Branco</i> <sup>1</sup><br><sup>1</sup> <i>Universidad Tecnológica del Uruguay</i>                                                     |
| 811 [E.II.8] | TECHNICAL FEASIBILITY OF IMPLEMENTING SOLAR-POWERED VESSELS IN THE LOWER TOCANTINS REGION<br><i>Denni D'Vitor dos Santos Viana</i> <sup>1</sup> , <i>Bruna Larissa da Silva e Silva</i> <sup>2</sup> , <i>Ivanildo dos Santos Bento</i> <sup>3</sup><br><sup>1</sup> <i>Universidade Federal do Pará</i> ; <sup>2</sup> <i>Instituto Federal do Pará</i> ; <sup>3</sup> <i>Universidade Federal do Pará</i> |
| 899 [F.II.5] | IMPACT OF COMPONENT CAPACITY ON THE PERFORMANCE OF A HYBRID PHOTOVOLTAIC SYSTEM<br><i>Gojmir Radica</i> <sup>1</sup> , <i>Jakov Šimunović</i> <sup>1</sup> , <i>Tino Vidović</i> <sup>1</sup> , <i>Frano Barbir</i> <sup>1</sup><br><sup>1</sup> <i>University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture</i>                                               |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 2 - WEDNESDAY - 05/11/2025 - 16h00 to 17h00

#### THEME 08: INTEGRATION OF SOLAR ENERGY IN ARCHITECTURE AND URBAN PLANNING

|              |                                                                                                                                                                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 51 [D.II.10] | PHOTOVOLTAIC ENERGY: STRATEGIES FOR COST REDUCTION IN PUBLIC EDUCATIONAL INSTITUTIONS<br><i>Raúl Eduardo Fernandez Sales<sup>1</sup>, Grazielli Bueno<sup>2</sup></i><br><sup>1</sup> Instituto Federal da Paraíba; <sup>2</sup> Instituto Federal do Paraná                   |
| 164 [E.I.9]  | BEPSODOM: AN INNOVATIVE TECHNICAL PLATFORM FOR SUSTAINABLE BUILDINGS, RESILIENCE, AND SMART GRIDS IN TROPICAL CLIMATES<br><i>Soubdhan Ted<sup>1</sup></i><br><sup>1</sup> University of Antilles                                                                               |
| 253 [D.II.1] | BUILDING DAYLIGHT CONTROL ON WORK-PLANE ILLUMINANCE AND DISCOMFORT GLARE<br><i>Yujie Wu<sup>1</sup>, Jean-Louis Scartezzini<sup>2</sup>, Luoxi Hao<sup>1</sup></i><br><sup>1</sup> Tongji University; <sup>2</sup> EPFL                                                        |
| 442 [E.I.5]  | ECOLOGICAL GUIDELINES OF PLUS-ENERGY SOLAR HOUSE ELEMENTS FOR THE CLIMATE RESILIENT VILLAGE MODEL<br><i>Seung-Ho Yoo<sup>1</sup>, Sooyoung Kim<sup>1</sup>, Ju-Young Lee<sup>1</sup>, Sulah Chung<sup>1</sup></i><br><sup>1</sup> Yonsei University                            |
| 647 [D.II.3] | RESILIENT SOLAR ENERGY FOR CLIMATE ACTION: MITIGATION AND ADAPTATION IN THE BUILT ENVIRONMENT<br><i>Berta García Fernández<sup>1</sup></i><br><sup>1</sup> Universidad Politécnica de Madrid                                                                                   |
| 724 [E.I.2]  | SOLAR RADIATION INDICES AS URBAN PLANNING TOOLS: MODELING AND APPLICATION IN FLORIANÓPOLIS<br><i>Renata Mansuelo Alves Domingos<sup>1</sup>, Fernando Oscar Ruttkay Pereira<sup>1</sup></i><br><sup>1</sup> Universidade Federal de Santa Catarina                             |
| 864 [D.I.5]  | MATERIALS THERMAL ANALYSIS LABORATORY<br><i>Ana Cecilia Borbón Almada<sup>1</sup>, Cecilia María Galindo Borbón<sup>1</sup>, Gema Karina Ibarra Torúa<sup>1</sup>, Nicolas Sau Soto<sup>1</sup>, Juan Pedro Ayala Moreno<sup>1</sup></i><br><sup>1</sup> Universidad de Sonora |
| 889 [D.II.7] | 10 YEARS OF PERFORMANCE FINDINGS AT THE MINEIRÃO STADIUM SOLAR PHOTOVOLTAIC SYSTEM<br><i>Andre Nobre<sup>1</sup>, Juliano M.F. Fonseca<sup>1</sup></i><br><sup>1</sup> CEMIG                                                                                                   |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 3 - THURSDAY - 06/11/2025 - 16h00 to 17h00

#### THEME 03: PV CELL TECHNOLOGY AND PV SYSTEMS - PART 1/5

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 80 [D.II.11]  | ANALYSIS OF LOW-CONCENTRATION SOLAR PHOTOVOLTAIC SYSTEMS: A COMPARATIVE STUDY OF CONCENTRATOR GEOMETRIES<br><u>Leonardo Faustino Lacerda de Souza</u> <sup>1</sup> , Ikaros Teles Bezerra dos Santos Barreto <sup>2</sup> , Chigueru Tiba <sup>2</sup> , José Lucas Agostinho da Silva <sup>1</sup> , Felipe Maia Nogueira <sup>1</sup><br><sup>1</sup> Universidade Federal de Alagoas; <sup>2</sup> Universidade Federal de Pernambuco                                                                                                                                                                                                                                                                                             |
| 103 [J.I.6]   | AEROELASTIC STABILITY OF SOLAR TRACKER: WIND TUNNEL TESTING<br><u>Rafael Rodrigues de Souza</u> <sup>1</sup> , Jonas Wetzel <sup>1</sup> , Angelo Braz Fadini Fabri <sup>1</sup> , Gilcimar Saraiva Nogueira <sup>1</sup><br><sup>1</sup> Brametal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 193 [C.II.1]  | DEVELOPMENT OF BIFACIAL P-PERT AND N-PERT SOLAR CELLS WITH REDUCED THERMAL PROCESSING AND COMPARISON OF BIFACIAL COEFFICIENTS<br><u>Izete Zanesco</u> <sup>1</sup> , Adriano Moehlecke <sup>1</sup> , Fábio André Biazetto <sup>1</sup> , Augusto dos Santos Kochenborger <sup>1</sup> , Lucas Teixeira Caçapietra Pires da Silva <sup>1</sup> , João Victor Zanatta Britto <sup>1</sup> , Thais Crestani <sup>1</sup> , Daniel Augusto Krieger Coutinho <sup>1</sup> , Vítor Gomes de Venuto <sup>1</sup><br><sup>1</sup> Pontifical Catholic University of Rio Grande do Sul, PUCRS                                                                                                                                                |
| 214 [D.II.8]  | SURGE WITHSTAND CAPABILITIES OF PHOTOVOLTAIC MODULES AND THEIR BYPASS DIODES TO LIGHTNING OVERVOLTAGES<br><u>Sergio Roberto Silva dos Santos</u> <sup>1</sup> , Alexandre Piantini <sup>2</sup> , Helio Eiji Sueta <sup>2</sup> , Milton Shigihara <sup>2</sup> , Cleiton Busse <sup>1</sup><br><sup>1</sup> Embrastec Ind. e Com. de Equip. Eletr. Ltda; <sup>2</sup> IEE USP                                                                                                                                                                                                                                                                                                                                                       |
| 237 [H.I.3]   | CFD-2D COMPUTATIONAL MODELING FOR DRAINAGE SYSTEMS IN PHOTOVOLTAIC POWER PLANTS<br><u>Joel Baya Kazadi</u> <sup>1</sup> , <u>Gilberto Figueiredo Pinto Filho</u> <sup>1</sup> , Gabriel de Carvalho Nascimento <sup>1</sup> , Elson Antônio do Nascimento <sup>1</sup><br><sup>1</sup> Fluminense Federal University                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 264 [G.II.11] | PASSIVE COOLING OF PHOTOVOLTAIC PANELS USING FLUID-BASED SPECTRAL BEAM SPLITTING FILTERS<br><u>Rafael Alejandro García Ramos</u> <sup>1</sup> , <u>Carlos Ivan Rivera Solorio</u> <sup>1</sup> , Miguel Angel Gijón Rivera <sup>1</sup><br><sup>1</sup> Tecnológico de Monterrey                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 330 [H.I.4]   | DETECTION OF DEFECTS IN PHOTOVOLTAIC MODULES THROUGH ELECTROLUMINESCENCE IMAGE ANALYSIS<br><u>Amanda Anaice Alvim</u> <sup>1</sup> , <u>Gilberto Figueiredo Pinto Filho</u> <sup>1</sup> , André da Costa Pinho <sup>1</sup><br><sup>1</sup> Universidade Federal Fluminense                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 339 [G.I.2]   | ANALYSIS OF PERFORMANCE LOSS OF PHOTOVOLTAIC MODULES THROUGH DARK I-V CHARACTERISTICS<br><u>Leonel Augusto Calliari Poltosi</u> <sup>1</sup> , Arno Krenzinger <sup>1</sup> , Cesar Wilhelm Massen Prieb <sup>1</sup><br><sup>1</sup> LABSOL PPGE3M UFRGS                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 342 [J.I.9]   | ELECTRICAL MODELING OF A BIFACIAL PV MODULE BASED ON A SINGLE DIODE MODEL AND DATA SHEET VALUES<br><u>Elias Salilih</u> <sup>1</sup> , <u>Walter Daniel Leon Salas</u> <sup>1</sup> , Pedro Flores Larico <sup>2</sup> , Miguel Angel Vizcardo Cornejo <sup>2</sup> , Mauricio Postigo Malaga <sup>2</sup> , Miguel Angel Ocharan Pichu <sup>2</sup><br><sup>1</sup> Purdue University; <sup>2</sup> Universidad Nacional de San Agustín de Arequipa                                                                                                                                                                                                                                                                                 |
| 366 [E.I.7]   | PRESENTATION OF CCME-BASED BIDIRECTIONAL DC-DC BOOST CONVERTER WITH RECTIFIER ACTIVE BRIDGE INTEGRATION FOR CONTROL AND POWER TRANSFER AT SOURCE-TO-LOAD GATE<br><u>Rafael Felipe Barbosa Nunes</u> <sup>1</sup> , <u>Fabiola Maria Alexandre Linard</u> <sup>1</sup> , Francisco Evertom Uchoa Reis <sup>1</sup><br><sup>1</sup> Universidade Federal do Piauí                                                                                                                                                                                                                                                                                                                                                                      |
| 371 [I.II.9]  | INCREASE OF THERMAL TEMPERATURE IN SONOCHEMICAL DEPOSITION OF SnO <sub>2</sub> THIN FILMS<br><u>João Pedro Santana Mota</u> <sup>1</sup> , William Neves da Silva <sup>2</sup> , Vanja Fontenele Nunes <sup>1</sup> , Nichollas Rodrigues Bezerra Freitas <sup>1</sup> , Ana Fabíola Leite Almeida <sup>1</sup> , Carla Freitas de Andrade <sup>1</sup> , Francisco Olimpio Moura Carneiro <sup>3</sup> , Francisco Marcione Lima <sup>1</sup> , Paulo Herbert Franca Maia Junior <sup>1</sup> , Francisco Nivaldo Aguiar Freire <sup>1</sup><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade Federal de Santa Catarina; <sup>3</sup> Universidade da Integração Internacional da Lusofonia Afro-Brasileira |
| 388 [B.I.10]  | GREEN PARKING LOT IN THE AMAZON<br><u>Luiz Carlos do Nascimento Borges Filho</u> <sup>1</sup> , Ayrton Lucas Lisboa do Nascimento <sup>1</sup> , <u>Bruno Santana de Albuquerque</u> <sup>1</sup> , Carminda Célia Moura de Moura Carvalho <sup>1</sup> , Maria Emília de Lima Tostes <sup>1</sup><br><sup>1</sup> Universidade Federal do Pará                                                                                                                                                                                                                                                                                                                                                                                      |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 3 - THURSDAY - 06/11/2025 - 16h00 to 17h00

#### THEME 03: PV CELL TECHNOLOGY AND PV SYSTEMS - PART 2/5

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 413 [I.II.10] | <p>SYNTHESIS AND CHARACTERIZATION OF KESTERITE INTO VACUUM FILMS</p> <p><i>João Pedro Santana Mota</i><sup>1</sup>, <i>Paulo Herbert Franca Maia Junior</i><sup>1</sup>, <i>Francisco Marcone Lima</i><sup>1</sup>, <i>Francisco Olimpio Moura Carneiro</i><sup>2</sup>, <i>Carla Freitas de Andrade</i><sup>1</sup>, <i>Francisco Nivaldo Aguiar Freire</i><sup>1</sup>, <i>Vanja Fontenele Nunes</i><sup>1</sup>, <i>Ana Fabíola Leite Almeida</i><sup>1</sup>, <i>William Neves da Silva</i><sup>3</sup></p> <p><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Universidade da Integração Internacional da Lusofonia Afro-Brasileira; <sup>3</sup> Universidade Federal de Santa Catarina</p> |
| 487 [H.II.2]  | <p>AI AND ROBOTICS: REVOLUTIONIZING SOLAR ENERGY</p> <p><i>Peter Yang</i><sup>1</sup></p> <p><sup>1</sup> Case Western Reserve University</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 494 [E.I.3]   | <p>TOWARDS AN ACCURATE ASSESSMENT OF PERU'S PV POTENTIAL: COMPARING PHYSICAL, EMPIRICAL, AND ML-BASED MODELS ACROSS DIVERSE CLIMATES</p> <p><i>Rafael Jesus Vidal Coral</i><sup>1</sup>, <i>Jose Ruben Angulo Abanto</i><sup>1</sup>, <i>Juan de la Casa Higuera</i><sup>2</sup>, <i>Jan Amaru Palomino Töfflinger</i><sup>1</sup></p> <p><sup>1</sup> Pontificia Universidad Católica del Perú; <sup>2</sup> Universidad de Jaén</p>                                                                                                                                                                                                                                                                      |
| 514 [E.II.1]  | <p>IRRADIANCE SENSOR IMPLEMENTATION USING COMMERCIAL BIFACIAL PV MODULES</p> <p><i>Rodrigo P. Maruyama</i><sup>1</sup>, <i>Alex Renan Arrifano Manito</i><sup>1</sup>, <i>André Ricardo Mocelin</i><sup>1</sup>, <i>Givaldo dos Reis</i><sup>1</sup>, <i>Teddy Arturo Flores Meléndez</i><sup>1</sup>, <i>Marcelo Pinho Almeida</i><sup>1</sup>, <i>Roberto Zilles</i><sup>1</sup></p> <p><sup>1</sup> IEE-USP</p>                                                                                                                                                                                                                                                                                         |
| 531 [B.II.11] | <p>COMPARATIVE ANALYSIS OF ENERGY PRODUCTION IN PHOTOVOLTAIC SYSTEMS WITH DIFFERENT INVERTER ARCHITECTURES: A CASE STUDY IN CENTRALIZED GENERATION</p> <p><i>Camilla Domingues Albuquerque</i><sup>1</sup>, <i>Tiago Alves Fernandes</i><sup>1</sup>, <i>Beatriz Almeida Rodrigues e Silva Melo</i><sup>1</sup>, <i>Fabricio Bradaschia</i><sup>1</sup></p> <p><sup>1</sup> Universidade Federal de Pernambuco - UFPE</p>                                                                                                                                                                                                                                                                                  |
| 533 [D.II.4]  | <p>OPTIMIZING ENERGY PRODUCTION THROUGH BESS INTEGRATION IN PHOTOVOLTAIC POWER PLANTS IN BRAZIL</p> <p><i>Jorge Alberto Lewis Esswein Junior</i><sup>1</sup>, <i>Meliza Helena Panek</i><sup>1</sup>, <i>Júlio César Passos</i><sup>1</sup></p> <p><sup>1</sup> UFSC - Universidade Federal de Santa Catarina</p>                                                                                                                                                                                                                                                                                                                                                                                          |
| 563 [I.II.6]  | <p>STRATEGIC TRANSITION IN ENERGY OPTIMIZATION FOR OPERATIONAL PHOTOVOLTAIC SYSTEMS: TECHNICAL ANALYSIS THAT SUPPORTS THE FINANCIAL DECISION BETWEEN MAINTAINING OPEX OF HIGH TRACKER FAILURE RATE OR INVESTING IN CAPEX OF HIGH POWER MODULES</p> <p><i>Beatriz Souza Horn</i><sup>1</sup></p> <p><sup>1</sup> Polytechnic Institute of Bragança - IPB and Portalegre Polyth Polytechnic University - IPP</p>                                                                                                                                                                                                                                                                                             |
| 580 [G.II.1]  | <p>OPERATIONAL ANALYSIS OF THE 'WOMEN IN SOLAR ENERGY' PHOTOVOLTAIC POWER PLANT AT THE NORTH COAST CAMPUS OF FEDERAL UNIVERSITY OF RIO GRANDE DO SUL</p> <p><i>Aline Cristiane Pan</i><sup>1</sup>, <i>Arthur Luiz Klein</i><sup>1</sup>, <i>Juliana Klas</i><sup>1</sup></p> <p><sup>1</sup> Federal University of Rio Grande do Sul</p>                                                                                                                                                                                                                                                                                                                                                                  |
| 581 [B.II.12] | <p>EVALUATING THE EFFECT OF AIR MASS ON I-V CURVES FOR DIFFERENT PHOTOVOLTAIC TECHNOLOGIES BASED ON THE NREL DATABASE</p> <p><i>Tiago Alves Fernandes</i><sup>1</sup>, <i>Valdemar Moreira Cavalcante Junior</i><sup>1</sup>, <i>Beatriz Almeida Rodrigues e Silva Melo</i><sup>1</sup>, <i>Fabricio Bradaschia</i><sup>1</sup>, <i>Marcelo Cabral Cavalcanti</i><sup>1</sup></p> <p><sup>1</sup> Universidade Federal de Pernambuco - UFPE</p>                                                                                                                                                                                                                                                            |
| 594 [E.I.10]  | <p>MITIGATING THERMAL DERATING IN PHOTOVOLTAIC INVERTERS: INSIGHTS FROM A REAL GRID-CONNECTED SYSTEM</p> <p><i>Beatriz Almeida Rodrigues e Silva Melo</i><sup>1</sup>, <i>Tiago Alves Fernandes</i><sup>1</sup>, <i>Elielza Moura de Souza Barbosa</i><sup>1</sup>, <i>Fabricio Bradaschia</i><sup>1</sup>, <i>Rinaldo Oliveira de Melo</i><sup>1</sup></p> <p><sup>1</sup> Universidade Federal de Pernambuco</p>                                                                                                                                                                                                                                                                                         |
| 606 [B.II.5]  | <p>LIMITATIONS OF COMMERCIAL IV CURVE TRACERS FOR FIELD EVALUATION OF MODERN PHOTOVOLTAIC MODULES</p> <p><i>Anelise Medeiros Pires</i><sup>1</sup>, <i>Marília Braga</i><sup>1</sup>, <i>Matheus Hohmann</i><sup>1</sup>, <i>Helena Flávia Napolini</i><sup>1</sup>, <i>Ricardo Rüther</i><sup>1</sup></p> <p><sup>1</sup> UFSC</p>                                                                                                                                                                                                                                                                                                                                                                        |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 3 - THURSDAY - 06/11/2025 - 16h00 to 17h00

#### THEME 03: PV CELL TECHNOLOGY AND PV SYSTEMS - PART 3/5

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 628 [G.II.4]  | COMPARATIVE NANOSTRUCTURING OF SILICON VIA LASER-PLASMA SYNERGY: TOWARD ENHANCED LIGHT MANAGEMENT IN PHOTOVOLTAICS<br><u>Nazim Aslam</u> <sup>1</sup> , <u>Leonardo Sollazzo</u> <sup>1</sup> , <u>Valentina Diolaiti</u> <sup>1</sup> , <u>Donato Vincenzi</u> <sup>1</sup> , <u>Taj Muhammad Khan</u> <sup>2</sup><br><sup>1</sup> <i>Università degli Studi di Ferrara</i> ; <sup>2</sup> <i>National Institute of Laser and Optronic, Islamabad, Pakistan</i>                                                                                                                                                      |
| 648 [B.II.1]  | EVALUATION OF CELL MISMATCH IN PRE-EXPOSURE PHOTOVOLTAIC MODULES USING ELECTROLUMINESCENCE IMAGING<br><u>Janis Joplim Bezerra Galdino</u> <sup>1</sup> , <u>João Victor Furtado Frazão de Medeiros</u> <sup>1</sup> , <u>Olga de Castro Vilela</u> <sup>1</sup> , <u>Emerson Torres Aguiar Gomes</u> <sup>1</sup> , <u>Naum Fraidenaich</u> <sup>1</sup><br><sup>1</sup> <i>Federal University of Pernambuco (UFPE)</i>                                                                                                                                                                                                |
| 656 [H.I.10]  | IMPACTS OF CLIMATE CHANGE ON FIXED AND TRACKING SOLAR PV TECHNOLOGIES<br><u>Paula Conde Santos Borba</u> <sup>1</sup> , <u>Andre Rodrigues Goncalves</u> <sup>1</sup> , <u>Rodrigo Santos Costa</u> <sup>1</sup> , <u>Francisco José Lopes de Lima</u> <sup>1</sup> , <u>Meiriele Alvarenga Cumplido</u> <sup>1</sup> , <u>Hallan Souza de Jesus</u> <sup>1</sup> , <u>Felipe Husadel Poyer</u> <sup>1</sup> , <u>Fernando Ramos Martins</u> <sup>2</sup><br><sup>1</sup> <i>INPE</i> ; <sup>2</sup> <i>UNIFESP</i>                                                                                                    |
| 658 [A.I.6]   | ANALYSIS OF SHADING LOSSES IN A PV PLANT BUILT IN A TRANSMISSION LINE RIGHT-OF-WAY<br><u>Bernardo Meyer Hickel</u> <sup>1</sup> , <u>João Paulo Alves Veríssimo</u> <sup>1</sup> , <u>Aline Kirsten Vidal de Oliveira</u> <sup>1</sup> , <u>Ricardo Rütther</u> <sup>1</sup><br><sup>1</sup> <i>Universidade Federal de Santa Catarina</i>                                                                                                                                                                                                                                                                             |
| 660 [D.I.2]   | LOW-COST METHODOLOGY FOR SERIES RESISTANCE CHARACTERIZATION IN PV DEVICES THROUGH ELECTROLUMINESCENCE IMAGING<br><u>José Raymundo de Alcântara Neto</u> <sup>1</sup> , <u>Douglas Bressan Riffel</u> <sup>1</sup> , <u>Adriano Moraes da Silva</u> <sup>1</sup><br><sup>1</sup> <i>Universidade Federal de Sergipe</i>                                                                                                                                                                                                                                                                                                 |
| 678 [E.II.11] | RELIABILITY ANALYSIS OF PV STRINGS ALONG THE YEARS<br><u>Lenin Patricio Jiménez Jiménez</u> <sup>1</sup> , <u>Gustavo Fraidenaich</u> <sup>1</sup> , <u>João Lucas de Souza Silva</u> <sup>1</sup> , <u>Tárcio André dos Santos Barros</u> <sup>1</sup><br><sup>1</sup> <i>State University of Campinas</i>                                                                                                                                                                                                                                                                                                            |
| 683 [C.II.4]  | ARTIFICIAL INTELLIGENCE FOR PREDICTIVE GENERATION AND MAINTENANCE OF PHOTOVOLTAIC POWER PLANTS<br><u>Valdemar Norberto Sens Neto</u> <sup>1</sup> , <u>Aline Kirsten Vidal de Oliveira</u> <sup>1</sup> , <u>Cezar Augustus Essenfelder de Azevedo</u> <sup>2</sup> , <u>Ricardo Rütther</u> <sup>1</sup><br><sup>1</sup> <i>Universidade Federal de Santa Catarina</i> ; <sup>2</sup> <i>AXS Energia</i>                                                                                                                                                                                                              |
| 708 [I.I.8]   | R&D ACTIVITIES ON PHOTOVOLTAICS AT CNEA - ARGENTINA<br><u>Juan Plá</u> <sup>1</sup> , <u>Mariana Tamasi</u> <sup>1</sup> , <u>Mariela Videla</u> <sup>1</sup> , <u>Analía Moreno</u> <sup>1</sup> , <u>Ismael Eyras</u> <sup>1</sup> , <u>Martha Diaz Salazar</u> <sup>1</sup> , <u>Claudio Bolzi</u> <sup>1</sup> , <u>José Olima</u> <sup>1</sup> , <u>Juan Ignacio Pérez</u> <sup>1</sup> , <u>Nadia Kondratiuk</u> <sup>1</sup> , <u>Julio Durán</u> <sup>1</sup> , <u>Monica Gladys Martinez Bogado</u> <sup>1</sup><br><sup>1</sup> <i>Solar Energy Department - CNEA</i>                                        |
| 713 [H.I.8]   | TECHNOLOGICAL FEASIBILITY INDICATOR OF PHOTOVOLTAIC CELLS FOR TROPICAL CLIMATES: AN ANALYSIS APPLIED TO THE BRAZILIAN SOLAR BELT<br><u>Gabriel Pereira Ugucioni Rocha</u> <sup>1</sup> , <u>Gabriela Nascimento Pereira</u> <sup>1</sup> , <u>Matheus Bisolotti do Carmo</u> <sup>1</sup> , <u>Carlos Victor do Rego Brandao</u> <sup>1</sup> , <u>Murilo Bonetto</u> <sup>1</sup> , <u>Edinaura Battisti</u> <sup>1</sup> , <u>Everton Luis Fardin</u> <sup>1</sup><br><sup>1</sup> <i>Sengi Solar</i>                                                                                                                |
| 718 [I.I.5]   | DECIPHERING THE POWER REDUCTION DUE TO TEMPERATURE IN COMMERCIAL PHOTOVOLTAIC INVERTERS<br><u>Geyciane Pinheiro de Lima</u> <sup>1</sup> , <u>Diego Lucas de Carvalho Martinez</u> <sup>1</sup> , <u>Alan Marques Leal de Sousa</u> <sup>1</sup> , <u>João Pedro Carvalho Silveira</u> <sup>1</sup> , <u>Pedro José dos Santos Neto</u> <sup>1</sup> , <u>Tárcio André dos Santos Barros</u> <sup>1</sup><br><sup>1</sup> <i>Universidade Estadual de Campinas - UNICAMP</i>                                                                                                                                           |
| 722 [B.II.8]  | TECHNICAL PROCEDURES FOR GUARANTEEING PERFORMANCE AND CONFORMITY IN PHOTOVOLTAIC MODULES<br><u>Camila Fernanda Cardoso Teixeira</u> <sup>1</sup> , <u>Amanda Gomes Barboza</u> <sup>1</sup> , <u>Dayane Cynthia Pinto Oliveira</u> <sup>1</sup> , <u>Alan Rodrigues de Sousa</u> <sup>1</sup> , <u>Nicholas Medeiros Lopes</u> <sup>1</sup> , <u>Samira de Azevedo Santos Emiliavaca</u> <sup>1</sup> , <u>Thiago de Oliveira Alves Rocha</u> <sup>2</sup><br><sup>1</sup> <i>Instituto Senai de Inovação em Energias Renováveis (ISI-ER)</i> ; <sup>2</sup> <i>Universidade Federal do Rio Grande do Norte - UFRN</i> |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 3 - THURSDAY - 06/11/2025 - 16h00 to 17h00

#### THEME 03: PV CELL TECHNOLOGY AND PV SYSTEMS - PART 4/5

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 726 [H.II.7] | COMPARATIVE ANALYSIS OF THE DYNAMIC EFFICIENCY OF COMMERCIAL PHOTOVOLTAIC INVERTERS UNDER STANDARDIZED IRRADIANCE PROFILES<br><u>Geovana da Cunha Soares</u> <sup>1</sup> , Geyciane Pinheiro de Lima <sup>1</sup> , Diego Lucas de Carvalho Martinez <sup>1</sup> , Pedro José dos Santos Neto <sup>1</sup> , João Pedro Carvalho Silveira <sup>1</sup> , Tarcio André dos Santos Barros <sup>1</sup><br><sup>1</sup> Universidade Estadual de Campinas                                                                                                              |
| 735 [F.I.12] | DYNAMIC PERFORMANCE EVALUATION OF A TRANSPORTABLE ENERGY STORAGE SYSTEM SUPPLYING OFF-GRID LOADS<br><u>Vinicius Hirassaki</u> <sup>1</sup> , João Pedro Frederico de Abreu <sup>1</sup> , Lucas Hack de Souza Neto <sup>1</sup> , Angélica Paula Caús <sup>1</sup> , Gabriel Wolf Bortoluzzi <sup>1</sup> , Helena Flávia Napolini <sup>1</sup> , Antônio Felipe da Cunha de Aquino <sup>1</sup> , Leonardo Freire Pacheco <sup>2</sup> , Ricardo Rüther <sup>1</sup><br><sup>1</sup> The Federal University of Santa Catarina; <sup>2</sup> CELESC Distribuição Ltda |
| 739 [B.I.2]  | BEYOND 1 SUN: EVALUATING THE EFFICIENCY OF PERC AND TOPCON SILICON DEVICES UNDER OVER-IRRADIANCE CONDITIONS<br><u>Marília Braga</u> <sup>1</sup> , Ana Carolina de Oliveira Machado <sup>1</sup> , Ícaro Eiras da Cunha <sup>1</sup> , Anelise Medeiros Pires <sup>1</sup> , Helena Flávia Napolini <sup>1</sup> , Ricardo Rüther <sup>1</sup><br><sup>1</sup> UFSC                                                                                                                                                                                                   |
| 756 [G.II.9] | PERFORMANCE AND DEGRADATION OF SEMI-FLEXIBLE MODULES IN NAUTICAL APPLICATIONS: A CASE STUDY OF THE ARARIBOIA TEAM'S CATAMARAN<br><u>Moysés Moreira de Moura</u> <sup>1</sup> , Lucas Alves de Melo Vale <sup>1</sup> , Daniel Henrique Nogueira Dias <sup>1</sup> , Alexandre de Arruda Bitencourt <sup>1</sup> , Amanda Anaice Alvim <sup>1</sup> , Gilberto Figueiredo Pinto Filho <sup>1</sup> , Gabriel Toledo Rangel Ferreira <sup>1</sup><br><sup>1</sup> Universidade Federal Fluminense - UFF                                                                 |
| 757 [D.I.3]  | DETECTION OF HOT SPOTS ON PHOTOVOLTAIC MODULES IN A SOLAR POWER PLANT BY MEASURING THE DISSIMILARITY OF THERMAL IMAGES TAKEN BY DRONE<br><u>Michel Santana Teodoro</u> <sup>1</sup> , João Roberto dos Santos Neto <sup>1</sup> , Douglas Bressan Riffel <sup>1</sup><br><sup>1</sup> Universidade Federal de Sergipe (UFS)                                                                                                                                                                                                                                           |
| 765 [A.I.3]  | ANALYSIS OF THE EFFECT OF POTENTIAL-INDUCED DEGRADATION IN COMMERCIAL PHOTOVOLTAIC MODULES WITH P-TYPE AND N-TYPE CELLS<br><u>Thallys Luan Bezerra Lima</u> <sup>1</sup> , Fernando Schuck de Oliveira <sup>1</sup> , Mendelsson Rainer Macedo Neves <sup>1</sup> , Diego Lucas de Carvalho Martinez <sup>1</sup> , Pedro José dos Santos Neto <sup>1</sup> , Tarcio André dos Santos Barros <sup>1</sup><br><sup>1</sup> Universidade Estadual de Campinas                                                                                                           |
| 781 [G.I.10] | OPTIMIZATION OF THE TILT ANGLE OF RESIDENTIAL PHOTOVOLTAIC PANELS CONSIDERING DUST ACCUMULATION<br><u>Anthony Serafini Curioni</u> <sup>1</sup> , Allan R. Starke <sup>1</sup> , Alexandre Kupka da Silva <sup>1</sup><br><sup>1</sup> Federal University of Santa Catarina                                                                                                                                                                                                                                                                                           |
| 783 [B.I.4]  | DYNAMIC PERFORMANCE ANALYSIS OF A DISTRIBUTION FEEDER WITH A TRANSPORTABLE BATTERY STORAGE SYSTEM<br><u>Lucas Hack de Souza Neto</u> <sup>1</sup> , Helena Flávia Napolini <sup>1</sup> , Antônio Felipe da Cunha de Aquino <sup>1</sup> , Vinicius Hirassaki <sup>1</sup> , João Pedro Frederico de Abreu <sup>1</sup> , Angélica Paula Caús <sup>1</sup> , Gabriel Wolf Bortoluzzi <sup>1</sup> , Leonardo Freire Pacheco <sup>1</sup> , Ricardo Rüther <sup>1</sup><br><sup>1</sup> Universidade Federal de Santa Catarina                                         |
| 785 [D.I.10] | MODELING OF PHOTOVOLTAIC SYSTEMS AND PARAMETER EXTRACTION USING THE ANT COLONY OPTIMIZATION ALGORITHM<br><u>Arlon Natã Alves Granja Delmondes</u> <sup>1</sup> , Luis Arturo Gómez Malagón <sup>1</sup><br><sup>1</sup> University of Pernambuco - POLI                                                                                                                                                                                                                                                                                                               |
| 789 [I.II.2] | ANALYSIS AND COMPARISON BETWEEN BIFACIAL AND MONOFACIAL PHOTOVOLTAIC MODULES USING DIFFERENT INSTALLATION PARAMETERS IN LOW LATITUDE REGIONS: A CASE STUDY FOR NORTHEASTERN BRAZIL<br><u>Ryan Neves Santos</u> <sup>1</sup> , Janis Joplim Bezerra Galdino <sup>1</sup> , Emerson Torres Aguiar Gomes <sup>1</sup><br><sup>1</sup> Federal University of Pernambuco                                                                                                                                                                                                   |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 3 - THURSDAY - 06/11/2025 - 16h00 to 17h00

#### THEME 03: PV CELL TECHNOLOGY AND PV SYSTEMS - PART 5/5

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 793 [H.II.11] | POWER PERFORMANCE ASSESSMENT IN A GRID-CONNECTED PV SYSTEM IN THE BRAZILIAN NORTHEAST<br><i>Emilly Raquel Oliveira da Silva</i> <sup>1</sup> , <i>Diego Rodrigues de Miranda</i> <sup>2</sup> , <i>Lucas Emanuel Almeida Barboza</i> <sup>1</sup> , <i>Leonardo José de Petribú Brennand</i> <sup>1</sup> , <i>Olga de Castro Vilela</i> <sup>1</sup> , <i>Alexandre Carlos Araújo da Costa</i> <sup>1</sup><br><sup>1</sup> Universidade Federal de Pernambuco; <sup>2</sup> DLR Institute of Networked Energy Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 863 [D.I.6]   | SONOCHEMICAL SYNTHESIS AND CHARACTERIZATION OF $\text{La}_2\text{Zr}_2\text{O}_7:\text{Eu}^{3+}$ LUMINESCENT MATERIALS FOR ENHANCED PHOTOANODES IN DYE-SENSITIZED SOLAR CELLS<br><i>Joao Dionizio de Melo Neto</i> <sup>1</sup> , <i>Felipe Rodrigues da Silva</i> <sup>1</sup> , <i>Handerson José dos Prazeres</i> <sup>2</sup> , <i>Rodrigo Franco Cavalcante</i> <sup>3</sup> , <i>William Neves da Silva</i> <sup>4</sup> , <i>João Pedro Santana Mota</i> <sup>1</sup> , <i>Antônio Cleibo dos Santos Júnior</i> <sup>1</sup> , <i>Vanja Fontenele Nunes</i> <sup>1</sup> , <i>Paulo Herbert Franca Maia Junior</i> <sup>1</sup> , <i>Francisco Marcone Lima</i> <sup>1</sup> , <i>Ana Fabíola Leite Almeida</i> <sup>1</sup> , <i>Juscelino Chaves Sales</i> <sup>5</sup> , <i>Francisco Nivaldo Aguiar Freire</i> <sup>1</sup><br><sup>1</sup> Federal University of Ceará; <sup>2</sup> Federal University of Rio Grande do Norte; <sup>3</sup> Federal Institute of Ceará; <sup>4</sup> Federal University of Santa Catarina; <sup>5</sup> State University of Vale do Acaraú |
| 870 [G.I.8]   | EXPERIMENTAL PERFORMANCE OF A BIFACIAL PHOTOVOLTAIC MODULE UNDER STC CONDITIONS: EVALUATION OF BIFACIALITY AND REAR IRRADIANCE GAIN<br><i>Amanda Gomes Barboza</i> <sup>1</sup> , <i>Dayane Cynthia Pinto Oliveira</i> <sup>1</sup> , <i>Camila Fernanda Cardoso Teixeira</i> <sup>1</sup> , <i>Alan Rodrigues de Sousa</i> <sup>2</sup> , <i>Nicholas Medeiros Lopes</i> <sup>2</sup> , <i>João Vítor Fonseca de Mendonça</i> <sup>2</sup> , <i>Samira de Azevedo Santos Emiliavaca</i> <sup>2</sup><br><sup>1</sup> Instituto Senai de Inovação em Energias Renováveis (ISI-ER); <sup>2</sup> Instituto Senai de Inovação em Energia                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 871 [I.I.1]   | PERFORMANCE ANALYSIS AND DIAGNOSIS OF A PHOTOVOLTAIC MODULE WITH SPONTANEOUS CRACKING<br><i>Nicholas Medeiros Lopes</i> <sup>1</sup> , <i>Camila Fernanda Cardoso Teixeira</i> <sup>1</sup> , <i>Alan Rodrigues de Sousa</i> <sup>1</sup> , <i>Dayane Cynthia Pinto Oliveira</i> <sup>1</sup> , <i>Amanda Gomes Barboza</i> <sup>1</sup> , <i>Samira de Azevedo Santos Emiliavaca</i> <sup>1</sup> , <i>João Vítor Fonseca de Mendonça</i> <sup>1</sup> , <i>Ana Cleide Bezerra Amorim</i> <sup>1</sup><br><sup>1</sup> Instituto Senai de Inovação em Energias Renováveis (ISI-ER)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 901 [I.II.4]  | HIGHLY EFFICIENT AND STABLE ORGANIC SOLAR CELLS WITH $\text{SnO}_2$ ELECTRON TRANSPORT LAYER ENABLED BY UV-CURING ACRYLATE OLIGOMERS<br><i>Mwende Mbilo</i> <sup>1</sup> , <i>Du Hyeon Ryu</i> <sup>2</sup> , <i>Seungjin Lee</i> <sup>2</sup> , <i>Muhammad Haris</i> <sup>2</sup> , <i>Julius M. Mwabora</i> <sup>1</sup> , <i>Robinson Musembi</i> <sup>1</sup> , <i>Hang Ken Lee</i> <sup>2</sup> , <i>Sang Kyu Lee</i> <sup>2</sup> , <i>Chang Eun Song</i> <sup>2</sup> , <i>Won Suk Shin</i> <sup>2</sup><br><sup>1</sup> University of Nairobi; <sup>2</sup> Advanced Energy Materials Research Center, Korea Research Institute of Chemical Technology (KRICT)                                                                                                                                                                                                                                                                                                                                                                                                                 |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER SESSION 3 - THURSDAY - 06/11/2025 - 16h00 to 17h00

#### THEME 07: MICROGRIDS AND GRID INTERACTION

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 190 [C.I.7]   | PREDICTIVE ENERGY MANAGEMENT BASED ON SOLAR FORECAST AND APPLIED TO A UNIVERSITY CAMPUS<br><u>Mathieu David</u> <sup>1</sup> , <u>Faly Ramahatana Andriamasomanana</u> <sup>1</sup> , <u>Josselin Le Gal La Salle</u> <sup>1</sup> , <u>Mathieu Lafitte</u> <sup>1</sup> , <u>Alfred Jean-Philippe Lauret</u> <sup>1</sup><br><sup>1</sup> University of La Reunion                                                                                                                                                                                                    |
| 355 [C.I.10]  | LOW VOLTAGE NON-ISOLATED MICROGRID INTEGRATION FOR INCREASED RELIABILITY IN BRAZIL: AN ECONOMIC PERSPECTIVE FOR UTILITIES<br><u>Pedro Ferreira Torres</u> <sup>1</sup> , <u>João Tavares Pinho</u> <sup>1</sup> , <u>Roberto Zilles</u> <sup>1</sup><br><sup>1</sup> Universidade de São Paulo                                                                                                                                                                                                                                                                         |
| 440 [F.I.9]   | QUANTIFYING POWER QUALITY IN STAND-ALONE MINIGRIDS USING FUZZY POWER QUALITY INDICES: A CASE OF ILLAUT MINIGRID IN SUB-SAHARAN AFRICA<br><u>Duncan Elia Nkolokosa</u> <sup>1</sup> , <u>Sebastian Waita</u> <sup>1</sup> , <u>Mutugi Kiruki</u> <sup>1</sup> , <u>Walbermark Marque do Santos</u> <sup>2</sup><br><sup>1</sup> University of Nairobi; <sup>2</sup> Federal University of Espirito Santo                                                                                                                                                                |
| 449 [F.II.4]  | SUSTAINABLE RESIDENTIAL POWER: HYBRID INVERTERS FOR ON/OFF-GRID FLEXIBILITY<br><u>Israel Franklin Dourado Carrah</u> <sup>1</sup> , <u>Dalton Honorio</u> <sup>1</sup> , <u>Ernande Eugenio Campelo Morais</u> <sup>1</sup><br><sup>1</sup> Federal University of Ceará                                                                                                                                                                                                                                                                                                |
| 459 [F.II.7]  | DATA ACQUISITION OF PHOTOVOLTAIC SYSTEMS USING WIRELESS COMMUNICATION - LORA<br><u>Antonio Neilton da Silva</u> <sup>1</sup> , <u>Robert Kawe Linhares Nobre</u> <sup>1</sup> , <u>Marcello Anderson Ferreira Batista Lima</u> <sup>2</sup> , <u>Paulo Cesar Marques de Carvalho</u> <sup>1</sup> , <u>Newton Rogério de Freitas Raulino</u> <sup>2</sup><br><sup>1</sup> Universidade Federal do Ceará; <sup>2</sup> Instituto Federal de Educação, Ciência e Tecnologia do Ceará                                                                                     |
| 607 [F.II.11] | PREVENTING REVERSE POWER FLOW BY OPTIMAL COORDINATION OF PV FEED-IN: A CASE STUDY IN SOUTHERN BRAZIL<br><u>Vinícius Hirassaki</u> <sup>1</sup> , <u>André Ulrich</u> <sup>2</sup> , <u>Sascha Birk</u> <sup>2</sup> , <u>Thorsten Schneiders</u> <sup>2</sup><br><sup>1</sup> The Federal University of Santa Catarina; <sup>2</sup> University of Applied Sciences Cologne                                                                                                                                                                                            |
| 614 [J.I.3]   | INTEGRATION OF NON-CONVENTIONAL RENEWABLE ENERGY SOURCES INTO AN OFF-GRID SYSTEM FOR THE GENERATION OF GREEN ELECTRICITY AND HYDROGEN<br><u>Roberto Leiva-Illanes</u> <sup>1</sup><br><sup>1</sup> Universidad Técnica Federico Santa María                                                                                                                                                                                                                                                                                                                            |
| 663 [F.I.2]   | SIMULATION AND ANALYSIS OF CURRENT RIPPLE IN AN EXPERIMENTAL DC NANOGRID<br><u>João Paulo de Andrade Machado</u> <sup>1</sup> , <u>Victor Parente de Oliveira Alves</u> <sup>1</sup> , <u>Arthur Correa da Fonseca</u> <sup>1</sup> , <u>Wilson Negrão Macedo</u> <sup>1</sup> , <u>Marcos André Barros Galhardo</u> <sup>1</sup><br><sup>1</sup> GEDAE-UFPA                                                                                                                                                                                                           |
| 674 [C.II.9]  | APPLYING FAILURE MODE AND EFFECTS ANALYSIS (FMEA) TO COMMUNITY SOLAR MINI-GRIDS: A PROOF OF CONCEPT<br><u>Omkar Nandkishor Buwa</u> <sup>1</sup> , <u>Anand Bhalchandra Rao</u> <sup>1</sup> , <u>Nadege Versheri</u> <sup>2</sup> , <u>James Katende</u> <sup>2</sup><br><sup>1</sup> Indian Institute of Technology Bombay; <sup>2</sup> Namibia Institute of Science and Technology                                                                                                                                                                                 |
| 682 [C.II.5]  | PERFORMANCE ANALYSIS OF STANDALONE PHOTOVOLTAIC SYSTEMS (SIGFIS) IN THE BRAZILIAN AMAZON<br><u>Valdemar Norberto Sens Neto</u> <sup>1</sup> , <u>Aline Kirsten Vidal de Oliveira</u> <sup>1</sup> , <u>Ricardo Rüther</u> <sup>1</sup><br><sup>1</sup> Universidade Federal de Santa Catarina                                                                                                                                                                                                                                                                          |
| 729 [F.II.12] | DEVELOPMENT AND EMERGENCY APPLICATION ASSESSMENT OF A TRANSPORTABLE BATTERY ENERGY STORAGE SYSTEM WITH FIRST- AND SECOND-LIFE LITHIUM-ION BATTERIES<br><u>Daniel Odilio dos Santos</u> <sup>1</sup> , <u>Helena Flávia Napolini</u> <sup>1</sup> , <u>Aline Kirsten Vidal de Oliveira</u> <sup>1</sup> , <u>Matheus Hohmann</u> <sup>1</sup> , <u>Vinícius Hirassaki</u> <sup>1</sup> , <u>Leonardo Freire Pacheco</u> <sup>2</sup> , <u>Ricardo Rüther</u> <sup>1</sup><br><sup>1</sup> Universidade Federal de Santa Catarina; <sup>2</sup> CELESC Distribuição S.A. |
| 766 [E.II.5]  | APPLICATION OF THE IEC 61850-7-420 STANDARD IN THE MODELING OF DISTRIBUTED ENERGY RESOURCES IN PHOTOVOLTAIC MICROGRIDS<br><u>Amanda Carvalho Alexandre</u> <sup>1</sup><br><sup>1</sup> Universidade Federal do Ceará                                                                                                                                                                                                                                                                                                                                                  |



# Solar World Congress 2025

## SCIENTIFIC PROGRAMME

### POSTER MAP

|      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A.I  | 47  | 52  | 765 | 754 | 886 | 658 |     | 621 | 119 | 590 | 731 | 88  |
| B.I  | 154 | 739 | 538 | 783 | 629 | 723 |     | 902 | 475 | 388 | 167 | 769 |
| B.II | 648 | 138 | 299 | 419 | 606 |     | 884 | 722 | 622 | 624 | 531 | 581 |
| C.I  | 301 | 557 | 742 | 118 | 211 |     | 190 | 445 | 778 | 355 | 74  | 203 |
| C.II | 193 | 898 | 894 | 683 | 682 | 296 |     | 137 | 674 | 109 | 659 | 887 |
| D.I  | 485 | 660 | 757 | 415 | 864 | 863 |     | 247 | 148 | 785 | 470 | 123 |
| D.II | 253 | 159 | 647 | 533 | 999 |     | 889 | 214 | 151 | 51  | 80  | 452 |
| E.I  | 523 | 724 | 494 | 368 | 442 |     | 366 | 561 | 164 | 594 | 295 | 271 |
| E.II | 514 | 333 | 220 | 231 | 766 | 218 |     | 811 | 642 | 241 | 678 | 410 |
| F.I  | 556 | 663 | 799 | 600 | 199 | 258 |     | 709 | 440 | 609 | 644 | 735 |
| F.II | 634 | 279 | 99  | 449 | 899 |     | 459 | 69  | 436 | 222 | 607 | 729 |
| G.I  | 521 | 339 | 597 | 806 | 507 |     | 287 | 870 | 163 | 781 | 791 | 701 |
| G.II | 580 | 144 | 425 | 628 | 372 | 456 |     | 294 | 756 | 704 | 264 | 389 |
| H.I  | 265 | 524 | 237 | 330 | 204 | 776 |     | 713 | 638 | 656 | 601 | 790 |
| H.II | 91  | 487 | 482 | 895 | 752 |     | 726 | 114 | 58  | 359 | 793 | 289 |
| I.I  | 871 | 763 | 617 | 508 | 718 |     | 547 | 708 | 876 | 312 | 747 | 800 |
| I.II | 183 | 789 | 740 | 901 | 244 | 563 |     | 490 | 371 | 413 | 866 | 875 |
| J.I  | 727 | 878 | 614 | 777 | 266 | 103 |     | 341 | 342 | 322 | 555 |     |