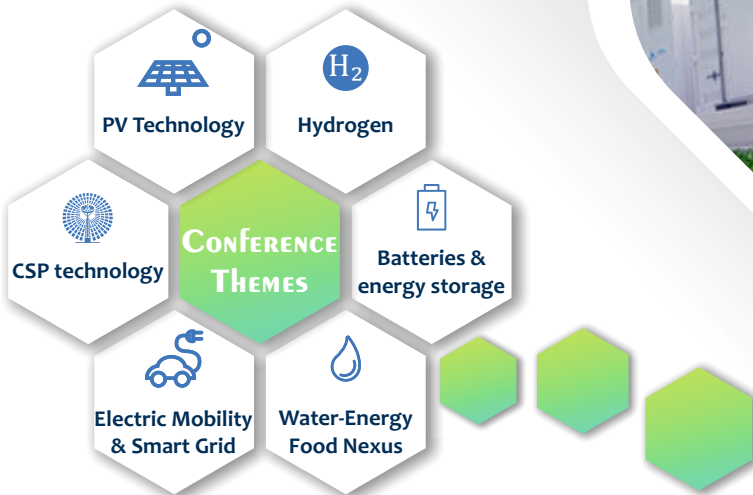




# FIRST INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY SYSTEMS

24 - 25, & 26 APRIL  
**2025**  
 Morocco(Online)



# PROGRAM & USEFUL INFORMATION



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## Welcome message

Dear Respectful Academicians, Researchers, graduate students

On behalf of the chairmen and organizing Committee of the **1st International Conference on Sustainable Energy Systems – Online/Remote Edition**, and as the General Chair of this 1st International Conference - 2025, we cordially invite you to participate and discuss the latest achievements in the advanced field of Sustainable Energy Systems, and related Technological Advancement in the Engineering.

We are confident that this **1st Remote Edition -2025** will be a platform to the participants from industries and academic institutions to share their thoughts and views, bring new ideas and concepts in good agreement with energy transition in our country. Such event is necessary for graduate students to follow up the latest developments in the key areas of Renewable and Sustainable Energy and to **establish scientific networks for research collaborations**.

We hope that you will be online, and you could stimulate a creative exchange of ideas. With your participation, we are willing to make this 1st International Conference-2025, a great success.

Please stay safe, healthy. Thanking you, we remain.

Sincerely,

**Prof. Ahmed ENNAOUI on behalf of organizing committee**



**Prof. Ahmed Ennaoui**

*President of The Scientific Council of IRESEN, Morocco*

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*Mohammed VI Polytechnic University,  
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*Corporate Fellow & Head of Electrification Section  
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## PROGRAM AT A GLANCE - ICOSES'25

DAY 1 / 24, APRIL 2025

TIME ZONE

WELCOME AND INTRODUCTION / ICOSES'25



08:30-09:00

Prof. Ahmed ENNAOUI (5MIN)  
Prof. NN, (5MIN)  
Prof. NN, (5MIN)

### PLENARY SESSION (DURATION 30MIN. INCL. Q/A DISCUSSION)



09:00-09:30



**Prof. Youssef BELMABKHOUT**, Mohammed VI polytechnic University (UM6P), Applied Chemistry and Engineering research (ACER) Centre of Excellence (CoE)

*Title: Advanced concepts for adsorptive based gas/vapor separations/purification with different degree of complexity. Air Capture as a case study*

*Moderator: Prof Ahmed ENNAOUI, and Prof. Abdelilah BENYOUSSEF, NN*



09:30-10:00



**Prof. Mohammad KHAJA NAZEERUDDIN**, Swiss Federal Institute of Technology in Lausanne, EPFL, Switzerland.

*Title: Stable and Efficient Perovskite Solar Cells and Modules by Compositional and Interface Engineering*

*Moderator: Prof. Youssef BELMABKHOUT, Prof Ahmed ENNAOUI, NN*



10:30-11:00

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 <p>10:00-10:30</p>		<p><b>Dr. Jaouad EL KHARRAZ</b>, Senior manager, Expert, scientist and advisor in the fields of sustainable development, energy transition, water policies, desalination, and science diplomacy</p> <p><i>Title: <b>Water-Energy nexus: A pathway towards sustainability and Net-Zero</b></i></p> <p><b>Moderator: Prof. Charaf HAJJAJ and Prof. Mohamed AZEROUAL, NN</b></p>
  <p>10:30-11:00</p> <p>11:30-12:00</p>		<p><b>Dr. Diego MARTÍNEZ PLAZA</b>, Managing Director at EU-SOLARIS ERIC</p> <p><i>Title: <b>Concentrating Solar Thermal technologies: A reliable player to the global energy transition</b></i></p> <p><b>Moderator: Prof. Charaf HAJJAJ and Prof. Mohamed AZEROUAL, NN</b></p>
<p><b>SESSION FOR PARTICIPANTS / 14:30-16:00</b></p>		
<p><b>PLENARY SESSION (DURATION 30MIN. INCL. Q/A DISCUSSION)</b></p>		
 <p>16:00-16:30</p>  <p>10:00-10:30</p>		<p><b>Dr. Ilias BELHAROUAK</b>, Corporate Fellow &amp; Head of Electrification Section at Oak Ridge National Laboratory / Oak Ridge, Tennessee, United States Editor / Journal of Power Sources</p> <p><i>Title: <b>Is the Moroccan LFP Li-ion battery industry ready for takeoff?</b></i></p> <p><b>Moderator: Prof. Ismael SAADOUNE, Adjunct Prof. Alae AZOUZOUTE, NN</b></p>

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  <p>16:30-17:00 11:30-12:00</p>		<p><b>Dr. Saad Y. JASIM</b>, SJ Environmental Consultants (Windsor) Inc. Past President of the International Ozone Association (IOA), 2020-2022</p> <p><i>Title: <b>Water Reuse to Enhance Water Security and Sustainability and reduce impacts of Climate Change</b></i></p> <p><b>Moderator: Dr. Ilias BELHAROUAK, Prof. Charaf HAJJAJ, NN</b></p>
  <p>17:00-17:30 09:00-09:30</p>		<p><b>Prof. Sarah KURTZ</b>, University of California Merced Senior Research Fellow Emeritus at National Renewable Energy Laboratory, in Golden, CO</p> <p><i>Title: <b>Will the Energy Transition Drive Solar? Or, Will Solar Drive the Energy Transition?</b></i></p> <p><b>Moderator: Prof. Charaf HAJJAJ, Prof. Abdellatif BOUAICHI, NN</b></p>
  <p>17:30-18:00 09:30-10:00</p>		<p><b>Prof. Sabre KAIS</b>, Goodnight Distinguished Chair in Quantum computing, the department of electrical and computer engineering, North Carolina State University</p> <p><i>Title: <b>Quantum Energy Teleportation on a Quantum Computer</b></i></p> <p><b>Moderator: Prof. Ahmed ENNAOUI, Adjunct Prof. Alae AZOUZOUTE</b></p>
<b>WRAP-UP AND TAKEAWAY (20 MIN.) / ALL KEYNOTE SPEAKERS PRESENT</b>		
<b>SESSION FOR PARTICIPANTS / 18:00-19:30</b>		
<b>END OF THE FIRST DAY</b>		

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DAY 2 / 25, APRIL 2025

PLENARY SESSION (DURATION 30MIN. INCL. Q/A DISCUSSION)




 09:00-09:30  10:00-10:30		<p><b>Prof. Ivan GORDON</b>, Department Director IMOMEC at imec/Energyville - Vice-Director IMO at Hasselt University Professor Digital Photovoltaics at TU Delft.</p> <p><i>Title: Crystalline-Silicon solar cells: State-of-the-art and future challenges</i></p> <p><b>Moderator:</b> Prof. Mohamed AZEROUAL, Prof. Charaf HAJJA, NN</p>
 09:30-10:00  11:30-12:00		<p><b>Prof. Raşit TURAN</b>, Center for Solar Energy Research and Applications (ODTÜ-GÜNAM); Department of Physics, Middle East Technical University, 06800, Ankara-Turkiye</p> <p><i>Title: TOPCon Crystalline Si Solar Cell Technologies and Beyond</i></p> <p><b>Moderator:</b> Prof. Charaf HAJJA, Dr. Massaab EL YDRISSI</p>
 10:00-10:30		<p><b>Prof. Saleh KHAMLICH</b>, Research Centre of Excellence, UM6P - Mohammed VI Polytechnic University</p> <p><i>Title: Nanofluids and Their Advances Towards Renewable Energy Applications</i></p> <p><b>Moderator:</b> Prof. Mohamed AZEROUAL, Prof. Charaf HAJJA, NN</p>

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 10:30-11:00		<p><b>Dr. Mounia KARIM</b>, Senior Researcher in Solar Energy and Zero Carbon, University of Derby, Angleterre, Royaume-Uni.</p> <p><u>Title:</u> <i>Local community acceptability of Solar power plants: Challenges and Opportunities?</i></p> <p><u>Moderator:</u> Prof. Abdellatif BOUAICHI, Prof. Mohamed AZEROUAL, NN</p>
 10:30-11:00		<b>SESSION FOR PARTICIPANTS / 11:00-12:30</b>

P L E N A R Y   S E S S I O N (DURATION 30MIN. INCL. Q/A DISCUSSION)		
 14:00-14:30		<p><b>Prof. Thomas HANNAPPEL</b>, Head of the department “Fundamentals of Energy Materials” Dean of the Master course “Renewable Energy Techniques” at the Institute of Physics, Technische Universität (TU) Ilmenau</p> <p><u>Title:</u> <i>Critical points of III-V semiconductor device structures for sustainable photoelectrochemical solar fuels production</i></p> <p><u>Moderator:</u> Prof Ahmed ENNAOUI, Prof. Abdelilah BENYOUSSEF, NN</p>
 15:00-15:30		

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 <p>14:30-15:00</p>		<p><b>Prof. Laila MANDI</b>, International Institute for Sustainable Transition in Africa, Marrakech, Morocco Faculty of Sciences Semlalia, Cadi Ayyad University, Marrakech, Morocco.</p> <p><u>Title:</u> <i>Water Resources and Sustainability: Towards a Greener Future</i></p> <p><u>Moderator:</u> <i>Adjunct Prof. Alae AZOUZOUTE, NN, NN</i></p>
 <p>15:00-15:30</p>		<p><b>Prof. Ismael SAADOUNE</b>, Mohammed VI Polytechnic University, Applied Chemistry &amp; Engineering Research, Morocco.</p> <p><u>Title:</u> <i>Recent Progress in Li- and Na- Phosphate-Based Electrodes for High- Efficiency Li- and Na-Ion Batteries</i></p> <p><u>Moderator:</u> <i>Prof. Abdellatif BOUAICHI, Prof. Charaf HAJJAJ, NN</i></p>
<p><b>SESSION FOR PARTICIPANTS / 15:30-17:00</b></p>		
  <p>17:00-17:30</p> <p>09:00-09:30</p>		<p><b>Dr. Greg P. SMESTAD</b>, PI at Sol Ideas Technology Development, California / Editor Emeritus for Solar Energy Materials and Solar Cells</p> <p><u>Title:</u> <i>Solar Energy-Related Engineering and Entrepreneurship in Emerging Market Countries</i></p> <p><u>Moderator:</u> <i>Dr. Leonardo MICHELI, NN, NN</i></p>
<p><b>WRAP-UP AND TAKEAWAY (20 MIN.) / ALL KEYNOTE SPEAKERS PRESENT</b></p>		
<p><b>SESSION FOR PARTICIPANTS / 17:30-19:00</b></p>		
<p><b>END OF THE SECOND DAY</b></p>		

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DAY 3 / 26, April 2025

PLENARY SESSION (DURATION 45MIN. INCL. Q/A DISCUSSION)

Keynote of, Prof. Leonardo Micheli

	09:00-09:45		<p><b>Prof. Leonardo MICHELI</b>, “Rita Levi Montalcini” Assistant Professor (RTDB) Dept. of Astronautical, Electrical and Energy Engineering (DIAEE) Sapienza University of Rome, Italy</p> <p><i>Title: Large-scale impacts of dust storms on the national photovoltaic capacity</i></p>
	10:00-10:45		

WORKSHOP ON MODELING SOILING: STATUS, RESOURCES, AND CHALLENGES

	09:45-10:30		<p><b>Dr. Álvaro FERNÁNDEZ SOLAS</b>, Industrial Engineer &amp; Scientific Researcher at DLR (German Aerospace Center). PhD in Photovoltaic Energy</p> <p><i>Title: Introduction to soiling and modelling approaches</i></p> <p><b>Moderator: Dr. Leonardo MICHELI, Mr. Thore MÜLLER, NN</b></p>
	10:45-11:30		
	10:30-11:15		<p><b>Mr. Thore MÜLLER</b>, Co-Founder, serving as Chief Executive Officer (CEO) at (PVRADAR, Germany)</p> <p><i>Title: Soiling modelling through Python</i></p> <p><b>Moderator: Dr. Leonardo MICHELI, Dr. Álvaro FERNÁNDEZ SOLAS, NN</b></p>
	11:30-12:15		

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  <p>11:15-12:00</p> <p>12:15-13:00</p>		<p><b>Dr.-Ing. Fabian WOLFERTSTETTER</b>, Product Owner Photovoltaics, Volateq GmbH</p> <p><u>Title:</u> <i>Combining Quantitative Soiling Detection and Thermography for Improved Solar Field Performance Optimization</i></p> <p><u>Moderator:</u> <i>Dr. Leonardo MICHELI</i></p>
<b>WRAP-UP AND TAKEAWAY (20 MIN. DISCUSSION) / ALL SPEAKERS PRESENT</b>		

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**TWO HOURS TUTORIAL ON FIRST-PRINCIPLES DENSITY FUNCTIONAL THEORS (DFT) SIMULATION OF VARIOUS NOVEL 2D MATERIALS FOR ENERGY STORAGE AND ADVANCED ELECTROCHEMICAL SOLAR ENERGY CONVERSION TO GREEN HYDROGEN AND CARBONE DIOXIDE REDUCTION: LEARNING FROM THE NATURE**



**Prof. Abdelilah BENYOUSSEF**, Hassan II Academy of Sciences and Technology, Rabat, Morocco LaMCScl, Faculty of Sciences, Mohammed V University, Rabat, Morocco

Title: *First-principles density functional theors (DFT) simulation of various novel 2d materials for energy storage*

**PART 1 / 12:20-13:20**

**PART 2 / 13:35-14:35**



**Moderator: Prof. Ahmed ENNAOUI, NN**



**Prof. Ahmed ENNAOUI**, President of the scientific council of IRESEN, Former head of research group at Helmholtz Center Berlin for Materials and Energy

Title: *Tutorial on advanced electrochemical solar energy conversion to green hydrogen and carbone dioxide reduction: learning from the nature*

**PART 1 / 14:50-15:35**

**PART 2 / 15:50-16:35**



**15:50-16:35**

**16:50-17:35**



**Moderator: Prof. Abdelilah BENYOUSSEF, NN**

**WRAP-UP AND TAKEAWAY (20 MIN. DISCUSSION) / ALL SPEAKERS PRESENT**

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# INDUSTRY TALK PANEL

Moderator: Dipl. Ing. Badr IKKEN



16:55 - 18:55



**Dipl. Ing. Badr IKKEN**, Executive-President of Gi3 / Managing partner of Gi2 / Chairman of the Morocco-Germany Business Council - CGEM Member of the Board of Directors of the German Chamber of Commerce AHK Morocco



**Dr. Ismail AKALAY**, Chief Executive Officer of Sonasid and Former general manager cobalt and base metals general manager cobalt and base metals Managem

**Break (10 min)**

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**Dr. Samir RACHIDI**, Managing Director, Institut de Recherche en Énergie Solaire et Énergies Nouvelles (IRESEN)



**Ms. Najlae YAZGHI**, Managing Director Siemens Gamesa & Siemens Energy Morocco



**Mr. Reda HAMEDOUN**, Executive Vice President at NAREVA HOLDING

**END OF THE THIRD DAY**

**END OF ICOSES'25 CONFERENCE**

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