



# 12<sup>th</sup> International Seminar on Thermodynamic Engineering of Fluids

July 20<sup>th</sup> – 21<sup>st</sup>, 2023 Tarragona (Spain)

## Presentation

The International Seminar on Thermodynamic Engineering of Fluids is an annual meeting of academic - scientific type, which brings together a group of international specialists that deal with various topics of interest in Engineering Thermodynamics. Besides, beyond the seminar program, researchers of the PhD Program on Thermodynamic Engineering of Fluids will present and discuss their research works.

## 1<sup>st</sup> day Program

### Thursday, July 20<sup>th</sup>

#### 9:00 Welcome to the participants

Dr. Carmen Gomez, Vice-rector of Doctoral Studies, Universitat Rovira i Virgili  
Alberto Coronas, Coordinator of the URV doctoral program

#### 9:15 Colaboración Universidad-Empresa en el doctorado: aspectos jurídicos.

Laura M. Meza Parada y Gabriel Berganza Tome, estudiantes del Máster en Derecho de la Empresa y la Contratación de la URV

#### Session 1. Overview and annual summary of activities of the PhD Programme on Thermodynamic Engineering of Fluids

#### 9:45 Coordinators at URV, UVa, USC and UBu

#### Session 2. Keynote lectures (I)

#### 10:00 Ionic liquid + water mixtures: key to sustainable heat transfer and storage engineering fluids?

*Carlos A. Nieto de Castro (Universidade de Lisboa, Portugal)*

#### 10:30 Sustainable Energy Technologies and assessments: Energy Storage Systems.

*Onder Kizilkan (Isparta University of Applied Sciences, Turkey)*

#### 11:00 Coffee break

#### Session 3. Keynote lectures (II)

#### 11:30 PV solar cooling Technologies and Applications.

*Víctor Torres (Solar Cooling Engineering GmbH, Germany)*

#### 12:00 Synthesis and Characterization of Nano Phase Change Material (Nano-PCM): Application for Energy Storage.

*Kamel Agroui (CRTSE, Algeria)*

#### 12:20 Long-distance transport of hydrogen based on toluene/MCH organic hydride

*Antonio Atienza-Márquez (Yokohama National University, Japan)*

#### 13:00 Lunch

#### Session 4. Keynote lectures (III)

#### 14:15 Highlighting the potentials of hybrid rooftop photovoltaic-thermal collectors in the residential energy communities across Tarragona province.

*Adedamola B. Shobo (Universitat Rovira i Virgili, Spain)*

#### 14:35 Influence of transport properties of Ionic liquid absorbents on the absorption refrigeration cycle performance

*Ronny Rives Sanz (Universitat Politècnica de Catalunya, Spain)*

#### 14:55 Dynamic modelling of high temperature heat pumps for industrial applications

*Lorenzo Ferrari (University of Pisa, Italy)*

#### 15:15 Coffee break

#### Session 5. PhD researchers (I)

#### 15:40 Integrating multi-criteria decision analysis and peak finding optimization for solar district energy system optimization

*Ruslan Kotegov (Universitat Rovira i Virgili, Spain)*

#### 16:00 Preliminary study on development of a DC-solar powered cold storage system for preservation of fruits and vegetables in Nigeria

*Adebisi Oluwafemi Adebayo (Universitat Rovira i Virgili, Spain)*

#### 16:20 Deep learning and ai techniques in the development of energy management for hybrid electric vehicles

*Pedro Maroto (Universitat Rovira i Virgili, Spain)*

#### 16:40 Efficiency losses in Photovoltaic systems: Description and examples

*Teodor Pulido (Universitat Rovira i Virgili, Spain)*

#### 17:00 End of the sessions



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## 2<sup>nd</sup> day Program

### Friday, July 21<sup>st</sup>

#### Session 6: PhD researchers (II)

- 9:00** On the stability and thermophysical properties of non-aqueous lubricants containing functionalized nanoparticles  
*Fátima Mariño (Universidade de Santiago de Compostela, Spain)*
- 9:20** Electrical and thermal conductivities of e-Fluids  
*Óscar Giner-Rajala (Universidade de Santiago de Compostela, Spain)*
- 9:40** Heat of dilution of aqueous lithium bromide solutions using ionic liquids as additives for absorption refrigeration and heat pump applications  
*David Latorre-Arca (Universitat Rovira i Virgili, Spain)*
- 10:00** Experimental study on the absorption process with water/(LiBr+IL) flowing on horizontal tubes  
*Hussain A. Tariq (Universitat Rovira i Virgili, Spain)*
- 10:20** Modelling and experimental measurements of CO<sub>2</sub> solubility in aqueous amines.  
*Juan Diego Arroyave (Universidad de Valladolid, Spain)*
- 10:40** A review on comparison of the hydrogen storage technologies for different hydrogen value chains  
*Tegen Dagnev (Universitat Rovira i Virgili, Spain)*

**11:00** Coffee break

#### Session 7: PhD researchers (III)

- 11:20** Performance comparison of vapour compression heat pumps for simultaneous production of cold and heat  
*Daniel Dima (Polytechnics University of Bucharest, Romania)*
- 11:40** Dynamic modeling and simulation of a pv-based hydrogen generation and storage system for off-grid applications  
*Gamze Soy Turk (Isparta University of Applied Sciences, Turkey)*
- 12:00** High-pressure density measurement of an aqueous solution of MEA with CO<sub>2</sub> for carbon capture process  
*Yisel Pérez-Milian (Universidad de Valladolid, Spain)*
- 12:20** Hydrolysis of Sunflower oil in Sub-supercritical water  
*Enkeledo Menalla (Universidad de Valladolid, Spain)*
- 12:40** Solar-powered ammonia-water absorption chiller for dual-function of air conditioning and water heating applications: system configurations and performance analysis  
*Desy Agung (Universitas Indonesia, Indonesia)*
- 13:00** Conversion of CO<sub>2</sub> into formic acid with biomass residues as reducing agent.  
*Maira Ivette Chinchilla (Universidad de Valladolid, Spain)*

**13:20** Closing

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### Publications

A Book of Abstracts will be edited and distributed among the participants

### Location and modality

Sala de Graus, Campus Sescelades, Avda. Països Catalans, 26, 43007, Tarragona  
The seminar can be followed in person or virtually by videoconference (MS Teams)

### Video-conference links

- Thursday 20<sup>th</sup> July: [link](#)
- Friday 21<sup>st</sup> July: [link](#)

