

# 14<sup>th</sup> International Seminar on Thermodynamic Engineering of Fluids (14ISTEF)

July 23<sup>rd</sup> – 24<sup>th</sup>, 2025. Tarragona (Spain)

## Presentation

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

## Preliminary program

### Wednesday 23<sup>rd</sup> July

9:00	Welcome to the participants
9:05	<b>Session 1. Doctoral Programme of Thermodynamic Engineering of Fluids</b> Overview and annual summary of activities of the Interuniversity doctoral Programme of Thermodynamic Engineering of Fluids. Coordinators at the Universidad de Valladolid, Universidade de Santiago de Compostela, Universidad de Burgos and Universitat Rovira i Virgili
9:15	<b>Session 2. Thermophysical Properties of Materials and Fluids</b> <i>Sabrina Belén Rodríguez (URV-AGACAPE), Multiscale modelling tools for the design and recovery of refrigerants</i>
9:35	<i>Juan Diego Arroyave (UVA), Solubility of Nitrous Oxide and Carbon Dioxide in an aqueous mixture of 2-(Dimethylamino)ethanol + N-Methyl-1,3-propanediamine.</i>
9:55	<i>Abdurahman H. Assagaf (URV), Methodology to select metal hydrides for different applications.</i>
10:15	Coffee break
11:00	<b>Session 3. Refrigeration and Heat Pumps</b> <i>C. Amaris (U.I. Santander, Colombia), Energy and Environmental Potential of a Heat Pump for Steam Generation using R744 and R290</i>
11:20	<i>M. Reda Haddouche (URV), Characteristics and performance assessment of a CO2 Liquid piston refrigeration system</i>
11:40	<i>Zakaria Agantar (URV), Design configurations of near-isothermal compression CO2 refrigeration systems</i>
12:20	<i>Yosra Ounis (U. Gabes, Tunisia), Assessment of working fluids for absorption systems in Renewable DHC networks</i>
13:00	Lunch break
14:30	<b>Session 4. Hydrogen and Renewable Fuels</b> <i>Canan Acar (U. Twente, Netherland) The Role of Hydrogen in Integrated Energy Systems: From Concept to Implementation</i>
14:50	<i>Tegen D. Tessema (URV), Physical based Hydrogen storage for Fuel cell Vehicle Refueling applications</i>
15:10	<i>Waseem Abbas (URV), Modelling of hydrogen storage using metal hydrides</i>
15:30	<i>Caterine Donoso (URV-EPN, Ecuador), Maximizing the production of hydrogen from biomass and plastic waste mixtures</i>
15:50	<i>Nourhan Elhaddad (Cairo U.), The Hydrogen Refueling Stations (HRS) Safety Issues.</i>
16:10	Closing



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## Thursday 24<sup>th</sup> July

### Session 5. Energy integration and Efficiency

9:00	<i>Ruslan Kotegov (URV)</i> , Data-Driven Simulation and Multi-Objective Optimization of Solar District Energy Systems with Battery and Thermal Storage
9:20	<i>Nataly Alejandra Castro (UVA)</i> , Nitric oxide recovery from hydrogen combustion streams. A clean pathway for the sustainable production of nitrogen compounds.
9:40	<i>Alwi A. Al Muhdar (URV)</i> , Phase Change Materials for Integration in a Portable Cold Storage Driven by a Photovoltaic system.
10:00	<i>Ali Ghaemian (URV)</i> , <i>Energy-Integrated Gasification for the Conversion of Olive Waste into Valuable Products.</i>
10:20	Coffee break
10:40	<i>Mushayyed M. Ali Khan (URV)</i> , Metal Hydrides characterization for emerging energy applications
11:00	<i>Hussain Tariq (URV)</i> , Impact of Ionic Liquids as anti-crystallization additive in LiBr/Water absorption refrigeration systems
11:20	<i>Adriana Coca (URV)</i> , Solar hybrid PVT collectors: characterization and modelling methodology according to the norm ISO 9806.
11:40	<i>Amin Altamirano (CNAM, France)</i> , Innovative adiabatic falling film absorbers for NH <sub>3</sub> -Salt based absorption systems
12:00	<i>David Latorre (URV-CNAM)</i> , Estimation and experimental determination of thermophysical properties of liquid piston fluids for a CO <sub>2</sub> refrigeration systems
12:20	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)

