UNIVERSITÀ DEGLI STUDI DEL SANNIO Benevento

DING

Decarbonizing thermal energy supply is essential to achieving net-zero targets. However, extending the use of heat pumps to district heating (60-90°C) and industrial processes (100-160°C and above) poses significant thermodynamic and engineering challenges.
In this context, and within the framework of advanced teaching activities funded by the **Department of Excellence 2023-2027**, the Department of Engineering is pleased to host **Prof. Adrián Mota-Babiloni** (Universitat Jaume I, Spain), who will deliver the course entitled:

FROM MODERATE TO HIGH TEMPERATURE HEAT PUMPS FOR SUSTAINABLE HEATING

This 6-hour course provides a research-oriented overview of heat pump technologies, covering thermodynamic fundamentals, system design, and integration strategies for the decarbonization of thermal energy supply. Participants will explore advanced vapor compression cycles for different temperature lifts (cascade, multi-stage, transcritical) and the key challenge of working fluid selection, with a focus on low-GWP and natural refrigerants. The course also addresses system integration through pinch analysis and process optimization, enabling the effective deployment of heat pumps in thermal networks and industrial processes.

12 May	**From 11:00 to 13:00**	**Sala del Consiglio Palazzo Bosco Lucarelli, Corso Garibaldi, 107 82100 Benevento Second floor**
13 May	**From 11:00 to 13:00 and from 14:00 to 16:00**	

Adrián Mota-Babiloni is an Associate Professor in the Mechanical Engineering and Construction Department at Universitat Jaume I (Spain). His research focuses on low-GWP refrigerants, ultra-low-temperature refrigeration, ORC systems, and high-temperature heat pumps for industrial waste heat recovery. He has been ranked among the top 2% of researchers worldwide in Energy since 2019 and has received multiple awards, including the 2023 Young Researcher Medal from the Royal Academy of Engineering, and recognition from the BBVA Foundation (Leonardo Projects, 2023).

Participation in the course is free upon completing this form: https://forms.gle/Um8Etc8ze79Gvj1U7.
For further information, please contact giopallotta@unisannio.it.

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