

# GiTe 2025 Program

**Tuesday 11 February 2025**

**10:00 Registration**

**10:30 Institutional welcome by Organizers Prof. A. Reale and Dr. D. M. Trucchi and introduction by the AIT President Dr. C. Fanciulli**

## **S1 - Development of Materials / 1**

**Chair: Prof. Andrea Reale**

**10:45** Fabiola Liscio – CNR-ISMN  
*Simultaneous optimization of all thermoelectric parameters in PEDOT:PSS by crystallization in strongly confined environment*

**11:05** Giovanna Latronico – CNR-ICMATE  
*Personal Thermal Management Using Thermoelectric Technology and Textile-based Heat Exchangers*

**11:25 COFFEE BREAK**

**11:55** Alberto Castellero – UniTo  
*Processing of thermoelectric intermetallic compounds for a waste heat harvesting module*

**12:15** Tanguy Bernard – UniTN  
*Sustainable Thin Film Thermoelectric Generator based on  $Cu_2SnS_3$  and  $Cu_{1-x}Ag_xFeS_2$*

**12:35** Giulio Mattoni – CNR-IFN  
*Laser Sintering of Thermoelectric Chalcogenides Nanopowders*

**13:00 LUNCH**

## S2 – Keynote Talk

Chair: Dr. Daniele M. Trucchi

**14:00** Andrey Varlamov – CNR-SPIN  
*Keynote Thermoelectricity: from the iron arc of the epoch of Alessandro Volta to radioisotope thermoelectric generators*

## S3 – Applications

Chair: Dr. Carlo Fanciulli

**14:45** Aniruddha Ray – RGS Development Thermoelectric  
*Modules and Applications: An Industrial Perspective*

**15:05** Elia Villa – GemaTEG  
*Thermal Management for AI Chips: the need of an assembly line optimized for high density thermoelectric modules*

**15:25** Alessandro Bellucci – CNR-ISM  
*The BLAZETEC project: solid-state converters for thermal batteries*

**15:45** **COFFEE BREAK**

**16:15** Matteo Mastellone – CNR-ISM  
*Advancing Thermionic-based Energy Conversion for Efficient Thermal-to-Electric Power Generation*

**16:35** Francesco Rossella – UniMoRe  
*Thermal conductivity measurements on non-thermally insulated nanowires: preliminary results about time-dependent 3omega technique*

**16:55** **General assembly of AIT – Associazione Italiana di Termoelettricità**

**19:30** **SOCIAL DINNER @ Hostaria “Al Boschetto”, Via del Boschetto, 30 - Roma**

# Wednesday 12 February 2025

## S4 - Modelling of Materials

Chair: Dr. Alessandro Bellucci

**10:30** Giuseppe Romano – MIT  
*Invited Differentiable Phonon Hydrodynamic Simulations for Inverse Design and Material Property Extraction*

**11:15** Patrizio Graziosi – CNR-ISMN  
*SiGeSn alloys for chip-temperature thermoelectrics: insight from modelling*

**11:35** **COFFEE BREAK**

**11:55** Yuriy Yerin – CNR-ISMN  
*Anomalous Seebeck effect in carbon nanotubes and graphene: The rise and fall of the Kelvin's and Mott's formulas*

**12:15** Matteo Barduzzi – UniMoRe  
*Ab initio ZT calculation of InAs nanowires speeded up by Machine Learning Techniques*

**12:35** Guanghua Zheng – Hangzhou University  
*Combustion based photon enhanced thermionic emission – gas turbine energy conversion*

**13:00** **LUNCH**

## S5 – Development of Materials / 2

Chair: Prof. Cristina Artini

**14:00** Cecilia Piscino – UniGE  
*Exploring  $(La,Sm)_y(Fe_xNi_{1-x})_4Sb_{12}$  skutterudites to enhance thermoelectric performance: bulk and thin-film investigations*

**14:20** Francesco Rossella – UniMoRe  
*Structure and Thermoelectric Properties of Hydrothermally Grown  $Bi_2Te_{3-x}Se_x$  Nanocrystals*

**14:40** Marcello Franzini – UniTO  
*Engineering Coordination Polymers for Enhanced Thermoelectric Performance*

**15:00** **COFFEE BREAK**

**15.30** Alessandro Difalco – UniTO  
*Characterization of point defects in Heusler alloys via XRD technique*

**15.50** Sajid Muhammad – UniRM2  
*Organic semiconductor composites for low temperature grade energy harvesting: from cell to module*

**16.10** Alberto Giribaldi – UniGE  
*Introduction of Carbon Nanoparticles in spin-coated Al-doped Zinc Oxide thin Films for Thermoelectric Applications*

**16:30** **Round table & discussion**

**17:00** **Best Junior Talk Award**