

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 Calabrese Gabriele – CNR-IMM
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 $\text{Cu}_{1-x}\text{Ag}_x\text{FeS}_2$

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 DFT calculations and experimental validation of thermoelectric properties in InAs-InAsSb nanowire heterostructures

12:35 Alleg Abdelkader – Laghouat
Thermoelectric properties of filled skutterudites $\text{ThFe}_4\text{P}_{12}$ and $\text{CeFe}_4\text{P}_{12}$ using DFT calculations

13:00 **LUNCH**

S5 – Development of Materials / 2

Chair: Dr. 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 Muhammad Isram – 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**