

# GiTe2024 Program

Tuesday 13 February 2024

**10:00 Registration**

**10:20 Institutional welcome and introduction by the AIT President**

## S1 - Keynote Talk

**Chair:** Cristina Artini

**10:30** Francesco d'Acapito – CNR-IOM-OGG c/o ESRF LISA CRG Grenoble  
*Synchrotron radiation and X-ray spectroscopy: Two precious tools in the study of thermoelectric materials*

## S2 - Theory

**Chair:** Carlo Fanciulli

**11:30** Alessandro Difalco – University of Turin and NIS  
*The effect of point defects on the electronic properties and half-metallicity of  $\text{Co}_2\text{ZrSn}$  and  $\text{Co}_2\text{HfSn}$  Heusler compounds through ab-initio computation*

**11:50** Matteo Barduzzi – University of Modena and Reggio Emilia  
*Ab-initio study of transport properties in InAs heterostructure for thermoelectric applications*

**12:10** Patrizio Graziosi – CNR ISMN, Bologna  
*Band anisotropy can allow for ultra-high thermoelectric power factors in metals, semimetals and narrow gap materials*

**12:30** Dario Narducci – University of Milano-Bicocca  
*Stationary and dynamic efficiency at maximum power of thermoelectric generators operated under general boundary conditions*

**12:50 LUNCH**

## S3 - Devices 1

**Chair:** Francesco Rossella

**14:15** Carlo Fanciulli – CNR ICMATE, Lecco  
*Critical issues associated to thermal power density in the development of thermoelectric systems*

**14:35** Giovanni Pennelli – University of Pisa  
*On-chip silicon-based thermoelectric devices*

**14:55** Stefano Boldrini – CNR ICMATE, Padova  
*Multistage TEG development at ICMATE: first steps on a long and complex route*

**15:15** Antonio Mazzacua – University of Milano–Bicocca  
*Space-resolved temperature and heat sensing by thermoelectrics*

**15:35 COFFEE BREAK**

**16:00 General assembly of AIT – Associazione Italiana di Termoelettricità**

**20:00 SOCIAL DINNER**

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**S4 – Nanostructured Materials**

**Chair:** Marcella Pani

**9:00** Alberta Carella – University of Modena and Reggio Emilia  
*V-doped SnCr<sub>2</sub>S<sub>4</sub> for thermoelectrics: from the bulk to the nanoscale*

**9:20** Andrea Reale – Tor Vergata University of Rome  
*Low dimensional perovskites and graphene composites for TE applications*

**9:40** Federico Giulio – University of Milano Bicocca  
*Embedding and metal contacts deposition on crystalline silicon nanofelts for thermoelectric applications*

**S5 – Materials**

**Chair:** Dario Narducci

**10:00** Alberto Castellero – University of Turin and NIS  
*The role of vacancies on structural, transport, magnetic and half-metallic properties of Co<sub>2</sub>ZrSn Heusler alloy*

**10:20** Eleonora Ascrizzi – University of Turin and NIS  
*Crucial role of Ni-points defects and Sb-doping in tailoring thermoelectric properties of ZrNiSn and TiNiSn half-Heusler alloys*

**10:40** Cecilia Piscino – University of Genoa  
*Studies of Fe/Ni-based skutterudites with growing complexity*

**11.00** **Material Research Society – 1<sup>st</sup> Italian Chapter in Genova**

**11:10** **COFFEE BREAK**

## S6 - Devices 2

**Chair:** Giovanni Pennelli

**11:30** Daniele Maria Trucchi – CNR-ISM, Rome  
*Solar thermionic–thermoelectric generator: Integration of high-temperature TEGs*

**11:50** Fabio Puglia – ISC SRL  
*A novel thermoelectric generator for enhanced low-grade heat sensing*

**12:10** Tanguy Bernard – University of Trento  
*Environmentally friendly p-type CTS-based thin film thermoelectric generator*

**12:30 LUNCH**

## S7 - Films

**Chair:** Alberto Castellero

**14:00** Francesca Di Benedetto – ENEA, Brindisi  
*Copper iodide thin film: a promising transparent thermoelectric material for thermal energy harvesting in smart building*

**14:20** Muhammad Isram – University of Modena and Reggio Emilia  
*Structural and thermoelectric properties of sputtered AZO thin films with varying al doping ratios*

**14:40** Matteo d'Angelo – Politecnico di Milano  
*Laser annealing of p-type bismuth telluride-based thick films*

**15:00** Fabiola Liscio – CNR-IMM, Bologna  
*Enhancing organic thermoelectric materials through local control wetting: a leap towards high-performance flexible thermoelectric generators*

**15:20 Best Junior Talk Award**

**15:30 Round Table**

**16:30 End of the conference**

