

Giornate sulla Termoelettricità – Pisa, 2022

Programma della Conferenza

Mercoledì 16 febbraio 2022

- 10:00** Registrazione dei partecipanti
10:30 Benvenuto istituzionale e introduzione del presidente dell'AIT

Invited lecture

- 10:50** Simone Fabiano - Linköping University, Sweden
Unconventional thermoelectric materials for energy harvesting and sensing application

Sessione 1: Thermoelectric generators and devices (I)

Chair: Francesco Rossella

- 11:50** Elisabetta Di Maggio - Università di Pisa
Thermoelectric devices based on nanostructured silicon, the ideal material for thermoelectric applications
- 12:10** Federico Giulio - Università degli Studi di Milano-Bicocca
Exceptional thermoelectric power factor in hyperdoped, fully dehydrogenated nanocrystalline silicon thin film
- 12:30** Valeria Demontis - Scuola Normale Superiore di Pisa
Drastic reduction of thermal conductivity in InAsSb periodic twinning nanowires
- 12:50** Giovanni Pennelli - Università di Pisa
Electrical and thermal optimization of energy-conversion systems based on thermoelectric generators
- 13:10 - 14:30** Pranzo

Sessione 2: Thermoelectric materials: design and characterization

Chair: Valeria Demontis

- 14:30** Cristina Artini - Università di Genova/CNR ICMATE
Effects of deposition and annealing temperature on the electrical properties of skutterudite $\text{Sm}_y(\text{Fe}_x\text{Ni}_{1-x})_4\text{Sb}_{12}$ thin films
- 14:50** Stefano Boldrini - CNR ICMATE
Ultrafast sintering of Mg_2Si

- 15:10** Alessandro di Falco - Università di Torino
Half-metallicity, itinerant magnetism and electronic properties of Co_2ZrSn and Co_2HfSn Heusler alloys: an experimental and ab-initio combined study
- 15:30** Antonella Rizzo - ENEA, Brindisi Research Centre
Al:ZnO-based thin films: a thermoelectric material for room temperature applications
Francesca di Benedetto/Antonella Rizzo - ENEA, Brindisi Research Centre
Comparative study on the thermoelectric properties of p-type CuI thin films
- 16:00 - 16:25** Coffee break

Sessione 3: Thermoelectrics in enterprise applications

Chair: Valeria Demontis

- 16:25** Bruno Lorenzi - GemaTEG Italia Srl, Perugia
Cogeneration by a plug-in thermoelectric device integrated within a conventional solar-thermal system
- 16:45** Fabio Puglia - ISC_Oversonic srl
Application of thermoelectric tegs to functional safety systems of anthropomorphic robots
- 17:05** Assemblea dei soci dell'AIT
- 20:00** Cena Sociale

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Sessione 4: Computational approaches to materials design and investigation

Chair: Simone Fabiano

- 10:00** Dario Narducci - Università degli Studi di Milano-Bicocca
Strange Thermoelectrics
- 10:20** Eleonora Ascrizzi - Università di Torino
Ab initio study of bulk and defective ZrNiSn half-Heusler alloys
- 10:40** Alberto Castellero - Università di Torino
Role of defects and secondary phases on the electronic structure and transport properties of thermoelectric $\text{TiNi}_{1-x}\text{Sn}$ half-Heusler
- 11:00** Paolo Sebastiano Floris - Institut de Ciència de Materials de Barcelona, Spain
Impact of doping on the thermal conductivity of PEDOT and PEDOT:PSS through Molecular Dynamics simulations

- 11:20** Coffee break
- 11:40** Patrizio Graziosi - CNR ISMN
ElecTra: A Boltzmann Electronic Transport simulator for complex bandstructure thermoelectric materials
- 12:00** Himanshu Nautiyal - Università di Trento
First principles investigation of transport properties of 2D SnX₂ (X=S, Se) and Janus SnSSe monolayer
- 12:20 - 14:00** Foto di gruppo nella scalinata del Palazzo della Carovana e Pranzo
- 14:00** Binayak Mukherjee - Università di Trento
Topological Anderson Insulator in Cation-Disordered Cu₂ZnSnS₄

Sessione 5: Thermoelectric generators and devices (II)

Chair: Dario Narducci

- 14:20** Ketan Lohani - Università di Trento
Facile and low-cost fabrication of Cu/Zn/Sn-based ternary and quaternary chalcogenides thermoelectric generators
- 14:40** Caterina La Terra - Politecnico di Milano
Modelling and characterization of thermal transfer in a thermoelectric generator based on catalytic combustion
- 15:00** Discussione su collaborazioni, progetti e prossime conferenze nel campo della termoelettricità (Coordina: Dario Narducci)
- 16:30** Fine della Conferenza