Indo-German Workshop on Thermoelectric devices for Emerging Applications

Venue: IISER Thiruvananthapuram, India

Venue: Chemical Sciences Block, Seminar hall.

Day 1 : 26th Feb 2024		
Inauguration and IGSTC session	10.00 - 10.30 am	Opening Remarks by **Prof. S. Srinivasula Murthy** Deputy Director, IISER Thiruvananthapuram Brief overview of R&D activities at IISER TVM by **Dr. R. S. Swathi,** Associate Dean (R&D, Consultancies), IISER TVM
	10.30 -11.00 am	**IGSTC session: Dr. Lalitha P. V** Funding opportunities with Indo-German Center
Group photo		
11.00 - 11.30 am		Tea / Coffee break
Session 1 **Chair: Surjeet Singh** **Disruptive developments in TE Material and Applications**	11.30 - 12.00 noon	**Kanishka Biswas, JNCASR, Bangalore** Enhanced Atomic Ordering Leads to Ultra-High Thermoelectric Performance
	12.00 - 12.30 pm	**Dennis Hohlfeld, University of Rostock** Fabrication and Characterization of a TEG for Electrically Active Implants
12.30 - 1.30 pm		Lunch break
Session 2 **Chair: Titas Dasgupta** **Modelling and simulation in TE devices I**	1.30 -2.00 pm	**Chandan Bera, INST Mohali** Theoretical and Computational Studies of Thermoelectric Nanomaterials
	2.00 - 2.30 pm	**Amrita Bhattacharya, IIT Bombay** First principles approach to predict the stability and transport properties of Heusler compounds for thermoelectric applications
2.30 - 2.45 pm		Tea / Coffee break
Session 3 **Chair: Surjeet Singh** **TE in engineered 2D hybrids**	2.45 - 3.15 pm	**Bivas Saha, JNCASR Bangalore** Functional Nitride Thin Films and Superlattices for Thermoelectric Application
	3.15 - 3.45 pm	**Arindam Ghosh, IISc Bangalore** Flow of charge and heat in high-quality graphene and hybrids.
3.45 - 4.00 pm		Tea / Coffee break
Session 4 **Chair: Saskia Fischer** **Recent advances TE materials and application**	4.00 - 4.30 pm	**Peter Woias, IMTEK, Albert-Ludwigs-Universität Freiburg (online)** Thermoelectric energy harvesting: From generator design to system application
	4.30 -5.00 pm	**Tanmoy Maiti, IIT Kanpur** Oxide composites: A viable route for high temperature thermoelectric power generation
7.00 - 9.00 pm Venue: Hotel Rohini international, Vithura		Cultural program and Conference Dinner

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Day 2: 27th Feb 2024		
Session 5 **Chair: Johannes de Boor** **TE Measurement and Metrology**	9.30 - 10.00 am	**Saskia Fischer, HU Berlin** Influence of geometry and size on transport processes: Considerations for thermoelectric device design
	10.00 - 10.30 am	**Joy Mitra, IISER Thiruvananthapuram** Measuring thermal and electrical transport of anisotropic nanocomposites
	10.30 -11.00 am	**Vincent Linseis, Linseis Messgeräte GmbH** Thermoelectric Metrology: A Comprehensive Review from a Manufacturer's Perspective
11.00 - 11.30 am Tea / Coffee break		
Session 6 **Chair: Biswapriya Deb** **Talks on Industry TE research**	11.30 12.00 noon	**Ravi Golani, Tata Steel, Jamshedpur** Harnessing High-temperature Radiant Waste Heat from Hot Steel Slab using Thermoelectric Generator at Tata Steel Ltd
	12.00 - 12.30 pm	**Nils Katenbrink, Quick-Ohm Küpper & Co.** Thermoelectric Cooling – Applications, Challenges and Potentials
	12.30 - 1.00 pm	**Sivaprahasam D., ARCI, Chennai** Fabrication and characterization of P-type the rigid thermoelectric devices composed of NaxPb1-xTe – Mg2Si1-xSnx, BixSb1-xSe-(Bi1-x-ySbxMy)Te3 compounds
1.00 to 2.00 pm Lunch break		
2.00 - 2.30 pm		**Discussion: industrial ventures, possible collaborations,** project specific requirements and looking for a certain expertise.
Session 7 **Chair: Dennis Hohlfeld** **Modelling and simulation in TE devices II**	2.30 - 3.00 pm	**Titas Dasgupta, IIT Bombay** Multi-band Modelling of Thermoelectric Materials: Applications in Materials and Devices
	3.00 -3.30 pm	**Rekha Varma, IIIT Allahabad** Electron-phonon coupling and related transport properties in two-dimensional semiconductors
3.30 – 4.00 Tea / Coffee break		
Session 8 **Chair: Deepshikha Jaiswal-Nagar** **Recent advances: TE alloys composites and TE application**	4.00 – 4.30 pm	**Ran He, IFW (Online)** High performance Te-free thermoelectric materials and modules for Low-T applications
	4.30 – 5.00 pm	**Surjeet Singh, IISER Pune** Enhancing Thermoelectric Performance through Innovative Strategies in Defective Half-Heusler Alloys
	5.00 – 5.30 pm	**Johannes de Boor, DLR** Mg_2Si-based thermoelectric materials and devices: progress and challenges, in particular interdiffusion phenomena
7.00 - 9.00 pm Dinner and Networking Session Venue: River County Restaurant.		

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Day 3 : 28th Feb 2024		
Session 9 **Chair: Rekha Varma** **Material challenges for TE devices**	9.30 -10.00 am	**Vijaykumar, NIIST Thiruvananthapuram** Thiophene-based Organic Thermoelectric Materials: Insights into Structure-Property Relationships and Doping Mechanisms
	10.00 - 10.30 am	**Vinayak Kamble, IISER Thiruvananthapuram** Thermoelectric energy harvesting using chalcogenide thin films.
10.30 - 10.45 am Tea / Coffee break		
Session 10 **Chair: Nils Katenbrink** **Printed and Flexible TE devices**	10.45 – 11.15 am	**Biswapriya Deb, NIIST Thiruvananthapuram** Polymer composites for Lightweight Thermoelectric Generators
	11.15 -11.45 am	**Mofasser Mallick, KIT** Ag2Se/Sb1.5Bi0.5Te3-based fully printed origami thermoelectric module for low-grade thermal energy harvesting
Session 11 **Chair: Vinayak Kamble** **Industry talk**	11.45 - 12.00 noon	**Subash Pai,** Excel Instruments, India Our encounters with TEG and related instrumentation
12.00 - 1.00 pm Lunch break		
Special Talk (online)	1.00 -1.30 pm	**Tamara Bechtold, Jade University of Applied Sciences (Online)** Multi-physical modeling of microsystems and system-level simulation
Session 12 **Chair: Ravi Golani** **Young Researchers session**	1.30 pm	**Rajasekhar P. VIT Vellore.** Thermoelectric Properties of Higher Manganese Silicide Synthesized through Molten Salt Shielded Synthesis Method
	1.45 pm	**Pintu Singha, IISER TVM** Thermoelectric and magneto transport properties of Bismuth Chalcogenide topological insulator
	2.00 pm	**Nithin P., IFW** Geometry optimization of micro thermoelectric devices
	2.15 pm	**Sanyukta Ghosh, DLR** Magnesium Silicide-based Composites: Correlating Composition with Transport Properties at the Micro and Nano-Scale for Effective Energy Filtering
2.30 to 3.00 pm		**Concluding session and vote of Thanks**