

Program

Monday, 8 March 2021

Thermomagnetic and magnetocaloric harvesting devices

| | | |
|---------------|--|--|
| 08:55 – 09:00 | Gabi Schierning | Opening Remarks |
| 09:00 – 09:45 | Sebastian Fähler | Thermomagnetic harvesting of low grade waste heat |
| 09:45 – 10:30 | Luana Caron | Fundamentals of magnetocaloric materials |
| 10:30 – 10:40 | <u>Offline</u> - COFFEE BREAK | |
| 10:40 – 11:00 | <u>Online</u> - Mingling, in virtual meeting room (Networking) | |

Tunneling devices in temperature gradients

| | | |
|---------------|--------------------------------|--|
| 11:00 – 11:45 | Dietrich Wolf | Tutorial: Irreversible Processes in Quantum Mechanics |
| 11:45 – 11:55 | COFFEE BREAK | |
| 11:55 – 12:40 | Timo Kuschel | Impact of thermal conductivity in oxide tunnel barrier materials on thermally induced spin currents |
| 12:40 – 13:25 | Mark Baxendale | Quantum-tunnelling controlled thermoelectricity in polymers |
| 13:25 – 13:30 | Stefan Jorda | About the Wilhelm and Else Heraeus Foundation |
| 13:30 – 15:00 | LUNCH BREAK | |
| 15:00 – 16:00 | Online Poster Session I | |

Fundamentals of transport

| | | |
|---------------|------------------|---|
| 16:00 – 16:45 | Peter Zahn | Universal Limits of Thermopower and Figure of Merit from Transport Energy Statistics |
| 16:45 – 17:30 | Johannes de Boor | The single parabolic band for electronic transport modelling: usage, limitations and applicability to advanced thermoelectric materials with complex band structures |

Program

Monday, 8 March 2021

17:30 – 17:40 Offline- *COFFEE BREAK*

17:40 – 18:00 Online- *COFFEE BREAK* in virtual meeting rooms

Role of interfaces on electrical and thermal transport

18:00 – 18:45 Mona Zebarjadi **Thermal and Electrical Transport in Layered Materials**

18:45 – 19:30 Jeff Snyder **Grain Boundary Engineering Thermal and Electronic Properties of Materials**

Program

Tuesday, 9 March 2021

Onsager's reciprocity relations: application and limits

11:15 – 12:00 Philipp Bredol **Rectifying Small Currents with Mesoscopic Devices**

12:00 – 13:00 **Online Poster Session II**

13:00 – 15:30 *LUNCH BREAK*

Synthesis of thermoelectric materials

15:30 – 16:15 Stephan Schulz **Thermoelectric Material Synthesis - From Nanoparticles to Epitaxial Thin Films**

16:15 – 17:00 Dave Johnson **Optimization of Thermoelectric Properties Through the Synthesis of Compounds with Designed Nanoarchitecture**

17:00 – 17:10 *Offline- COFFEE BREAK*

17:10 – 17:30 *Online- COFFEE BREAK in virtual meeting rooms*

Thermoelectric materials and devices

17:30 – 18:15 Zhifeng Ren **Thermoelectric Cooling vs. Power Generation**

18:15 – 19:00 Javier Garcia **Fabrication and cooling performance characterization of μ -thermoelectric coolers**

19:00 – 19:10 *Offline- (COFFEE) BREAK*

19:10 – 19:30 *Online- (COFFEE) BREAK in virtual meeting rooms*

19:30 – 20:15 Lane Martin **Pyroelectric Energy Conversion – Overview and Demonstration of Novel Thermal-Energy Conversion**

20:15 – 20:20 Gabi Schierning **Closing Remarks**

End of seminar