FOR5044 Summer School 2023

Wednesday	06.09.2023
11:00 - 11:15	**Welcome** Prof. Holger Fritze / TU Clausthal
11:15 - 12:45	**Ferroelectrics: Phenomenology, Theoretical Foundations and Modeling**
11:15	Prof. Marco Bazzan / University of Padova *Introduction to ferroelectric materials: polarization reversal, domains and basic phenomenology*
12:00	Prof. Simone Sanna / JLU Gießen *Atomistic modeling of ferroelectric solid solutions*
13:00 - 14:00	***Lunch***
14:00 - 15:30	**Crystal growth and thin-film deposition**
14:00	Dr. Steffen Ganschow / IKZ Berlin *Bulk crystals*
14:45	Dr. Jutta Schwarzkopf / IKZ Berlin *Epitaxy of polar oxide thin films*
15:30 - 16:00	***Coffee break***
16:00 - 17:30	**Poling and domain structures**
16:00	Prof. Lukas Eng / TU Dresden Dr. Michael Rüsing / TU Dresden *Domain and Domain Wall Engineering*
18:30	***Dinner***

Thursday	07.09.2023
08:30 - 12:00	**Defects and atomistic transport**
08:30	Prof. Mirco Imlau / Osnabrück University *Contactless detection of transport mechanisms of pulse-induced charge carriers in polar oxide crystals*
09:15	*Prof. Harald Schmidt / TU Clausthal* *Ion transport and defect chemistry in metal oxide materials*
10:00 - 10:30	***Coffee break***
10:30	*Prof. Holger Fritze* / TU Clausthal *Electro-acoustic properties of polar oxides at high temperatures*
11:15	*Dr. Yuriy Suhak* / TU Clausthal *Influence of Li-stoichiometry on high-temperature stability of sensing-relevant properties in Li(Nb,Ta)O3*
12:00 - 12:45	***Applications***
12:00	*Dr. Roland Sommer / Kistler AG* *High temperature piezoelectric force and*
13:00 - 14:00	***Lunch***
14:00 - 14:20	**Presentation of the IKZ**
14:00	Prof. Matthias Bickermann / IKZ Berlin *Innovations in Crystalline Materials - Innovations by Crystalline Materials*
14:20 - 16:30	***Poster and coffee***
18:00	***Dinner and excursion***

Friday	08.09.2023
09:00 -09:45	**Promoting of young scientists**
09:00	Dr. Christiane Richter / DFG *Innovations and promoting of young researchers*
09:45-15:30	**Hands-on modelling** Prof. Simone Sanna Modelling electronic and optical properties of ferroelectric solid solutions within DFT
or	**Lab tour**
09:45-12:45	**Hands-on spectroscopy** Prof. Mirco Imlau Czerny-Turner-Spectrograph; Interferometer for Fourier-Transform Spectroscopy, Line- and Point Detection systems, Principles of Optical Adjustments
or	**Lab tour**
13.00 - 14:00	**Lunch**
15:30	**Closing rermarks**
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The Summer School is organized by the DFG Research Unit 5044
Periodic low-dimensional defect structures in polar oxides.
Scientific organization and program: Prof. Holger Fritze, TU Clausthal
On-site organization: Prof. Matthias Bickermann, IKZ Berlin