

Symposium Mechanically Controlled Electrical Conductivity of Oxides (SYCO)

jointly organized by
the Metal and Material Physics Division (MM),
the Crystalline Solids and their Microstructure Division (KFM),
the Surface Science Division (O)
the Chemical and Polymer Physics Division (CPP), and
the Thin Films Division (DS)

Karsten Albe
TU Darmstadt, Fachbereich 11
FG Materialmodellierung

Otto-Berndt-Str. 3
64287 Darmstadt
albe@mm.tu-darmstadt.de

Till Frömling
TU Darmstadt, Fachbereich 11
FG Nichtmetallische-Anorganische
Werkstoffe

Alarich-Weiss-Str. 2
64287 Darmstadt
froemling@ceramics.tu-darmstadt.de

Markus Kubicek
TU Wien
Institut für Chemische Technologien
und Analytik

Getreidemarkt 9/164EC
1060 Wien, Austria
markus.kubicek@tuwien.ac.at

The presence of mechanical fields can affect the electrical conductivity by various mechanisms and is typically considered to be detrimental for the materials performance. The idea to intentionally tune functionality by stress or strain is so far typically limited to interface engineering of thin films. The goal of this symposium is to highlight recent developments in the exploration of mechanical coupling of electrical conductivity in electronic, ionic and mixed conducting oxides. Researchers working on nanomaterials, piezoceramics, photovoltaic and mechanically deformed ion conducting materials will present their most recent results. Identification and modeling of common features will create synergies that will foster future progress towards a scale-bridging understanding of this emerging field

Overview of Invited Talks and Sessions

(Lecture hall H1)

Invited Talks

SYCO 1.1	Mon	9:30–10:00	H1	Dislocation Dynamics and Their Conductivities in Oxides — ●YUICHI IKUHARA
SYCO 1.2	Mon	10:00–10:30	H1	Strain effects in ionic conductivity and electrode processes — ●JÜRGEN JANEK, CARSTEN KORTE
SYCO 1.3	Mon	10:30–11:00	H1	Elastic dipoles of point defects in materials — ●CELINE VARVENNE, THOMAS JOURDAN, EMMANUEL CLOUET
SYCO 1.4	Mon	11:30–12:00	H1	Mapping strain/pressure with ZnO nanowire arrays by piezo-phototronic effect — ●CAOFENG PAN
SYCO 1.5	Mon	12:00–12:30	H1	Bulk and Flexo-photovoltaic effect — ●MARIN ALEXE, MING-MIN YANG, DONG-JIK KIM

Sessions

SYCO 1.1–1.5	Mon	9:30–12:30	H1	Mechanically controlled electrical conductivity of oxides
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Continuation as topical session in MM

MM 11.1–11.7	Mon	15:45–18:30	H46	Mechanically controlled electrical conductivity of oxides (joint session MM/CPP/O)
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