

Summer School on Electric and Magnetic Field-assisted Processing of Inorganic Materials

14. – 16. September 2020, Online

AGENDA

Venue:	Online Video Conference
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Time	Subject	Speaker + affiliation
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Monday, 14.09.2020 (Time: Central European Summer Time, GMT+2)

08:45 – 09:15	Introduction and agenda of the school	Olivier Guillon, Vincenzo Sglavo, Martin Bram
Topic I: “Defect Chemistry in Ionic Solids: Charge and Mass Transport”		
09:15 - 10:15	Introductory lecture Title: “An Introduction to Defect Chemistry: The Perfect Way of Treating Imperfections”	Roger A. De Souza RWTH Aachen University, Germany
10:15 - 10:45	Focus lecture I Title: “Memristive Devices: Ions at Work”	Stefan Menzel Forschungszentrum Jülich GmbH, Germany
10:45 - 11:00	Short coffee break	
11:00 - 11:30	Focus lecture II Title: “Role of oxygen defects in metal oxides mass transport”	Vincenzo Esposito Technical University of Denmark
11:30 - 12:00	Focus lecture III Title: “Mass transport in presence of fields/currents”	Umberto Anselmi-Tamburini, Università degli Studi di Pavia, Italy
12:00 - 13:30	Lunch Break	
13:30 - 14:45	Poster Pitch and introduction (2 minutes each)	
14:45 - 15:45	Time for open discussion with the speakers. Each speaker will be assigned their virtual chat room.	
15:45 - 16:00	Day 1 closing remarks	Olivier Guillon, Vincenzo Sglavo, Martin Bram

Day 1 Time at different locations					
Europe	Europe-UK	USA-California	USA-Colorado	China	Japan
08:45 -16:00	07:45-15:00	23:45(-1)-7:00	00:45-08:00	14:45-22:00	15:45-23:00

Tuesday, 15.09.2020 (Time: Central European Summer Time, GMT+2)

Topic II: "Use of magnetic fields for the manipulation of materials"		
09:00 - 10:00	Introductory lecture Title: "Hysteresis Design of Magnetic Materials for Efficient Energy Conversion"	Oliver Gutfleisch Technical University of Darmstadt, Germany
10:00 - 10:30	Focus lecture I Title: "Material processing in High Magnetic Field: From Phase Equilibria to Improved Functionalities"	Sophie Rivoirard Institut NEEL CNRS/UGA Grenoble, France
10:30 - 10:45	Short coffee break	
10:45 - 11:15	Focus lecture II Title: "Magnetic field assisted processing of functional magnetic materials"	Konstantin Skokov Technical University of Darmstadt, Germany
11:15 - 11:45	Focus lecture III Title: "A modeling approach to control grain boundaries in thin films by magnetic fields"	Axel Voigt Technical University of Dresden, Germany
11:45 - 12:45	Time for open discussion with the speakers. Each speaker will be assigned their virtual chat room.	
12:45 - 13:30	Lunch Break	
13:30 - 15:00	Poster discussion	
15:00 - 16:00	Long break (waiting for the speakers from the USA)	

Day 2 Time at different locations					
Europe	Europe-UK	USA-California	USA-Colorado	China	Japan
09:00-15:00	08:00-14:00	00:00-06:00	01:00-07:00	15:00-21:00	16:00-22:00

Topic III: "Electric Current/Field-assisted material processing"		
Local time in California, USA: 07:00-09:00 and in Colorado, USA: 08:00-09:30		
16:00 - 17:00	Introductory lecture Title: "Overview of field-assisted sintering - history, technologies, and mechanisms"	Ricardo Castro University of California, Davis, USA
17:00 - 17:30	Focus lecture I Title: "In-situ techniques to study field-assisted sintering"	Rishi Raj University of Colorado Boulder, USA
17:30 - 18:30	Time for open discussion with the speakers. Each speaker will be assigned their virtual chat room. Discussion with Rishi Raj and Ricardo Castro.	
18:30 - 18:40	Closure and final feedback	Olivier Guillon, Vincenzo Sglavo, Martin Bram

Wednesday, 16.09.2020 (Time: Central European Summer Time, GMT+2)

Topic III: “Electric Current/Field-assisted material processing”		
Japan time: 16:00-16:30		
09:00 - 09:30	Focus lecture II Title: “Electroplasticity and shaping”	Yoshida, Hidehiro University of Tokyo, Japan
Local time in China: 15:30-16:00		
09:30 - 10:00	Focus lecture III Title: “Flash Spark Plasma Sintering of advanced ceramics”	Salvatore Grasso Southwest Jiaotong Univ. Chengdu, China
10:00 - 10:15	Short coffee break	
10:15 - 10:45	Focus lecture IV Title: “What are electric fields doing to grain growth and sintering? Space charge, electromigration and some electrochemistry”	Wolfgang Rheinheimer Technical University of Darmstadt, Germany
Japan: 17:45-19:15 China: 16:45-18:15		
10:45 - 11:45	Time for open discussion with the speakers. Each speaker will be assigned their virtual chat room. Discussion with Salvatore Grasso and Wolfgang Rheinheimer.	
11:45 - 12:15	Closure, final feedback and future prospective of the school (at University Trento)	Olivier Guillon, Vincenzo Sglavo, Martin Bram