

Program for EMN 3CG & Metallic Glasses Meeting

August 7-11, 2017, Berlin, Germany

Monday August 7, 2017

14:00-17:00

Onsite registration & Sign up

Tuesday August 8, 2017

Room A

8:20-8:30

Opening Ceremony

Session: Keynote

Chair: Xiaobin Niu

8:30-9:05

A01: Epitaxial Growth of Dirac and Topological Overlayer on Semiconductor Surface and Strain Engineering

Feng Liu
University of Utah, USA

9:05-9:40

A02: Interface Nanostructures and Kinetic Phase Transitions in Multilayer Epitaxial Growth and Erosion on Crystal Surfaces

Leonardo Golubovic
West Virginia University, USA

Session: Growth of oxide materials and structures I

Chair: Isabella Gallino

9:40-10:05

A03: Crystal growth and structural properties of oxide electrode materials for lithium ion batteries

Junji Akimoto
National Institute of Advanced Industrial Science and Technology, Japan

10:05-10:30

A04: Morphology Controlled Oxide Crystals of ZnO and Cu₂O via Electrochemical Deposition in Aqueous Solutions

Tsutomu Shinagawa
Osaka Municipal Technical Research Institute, Japan

10:30-10:45

Session Break

Session: 3CG General I

Chair: Xiaobin Niu

10:45-11:10

A05: Pattern Formation and Stochastic Resonance in Limestone-Marl sequences: An Example of Geochemical Self-Organized Crystallization Kinetics

Ivan L'Heureux
University of Ottawa, Canada

11:10-11:35	A06: Evaluation of Optical Crystals by Multi-photon Luminescence	Shingo Ono Nagoya Institute of Technology, Japan
11:35-12:00	A07: Synthesis of [Fe]-Hydrogenase Models with Acylmethylpyridyl Ligands	Dafa Chen Harbin Institute of Technology, China
12:00-13:30	Lunch Break	

Tuesday August 8, 2017		
Room A		
Session: Relaxation and Crystallization of Metallic Glasses I		Chair: Dieter Herlach
13:30-13:55	A08: Importance of crystal-liquid interfacial free energy on the formation of Ti-Zr-Ni quasicrystals and Cu-Zr glasses	Geun Woo Lee Korea Research Institute of Standards and Science, Korea
13:55-14:20	A09: Activation energy spectrum for relaxation and liquid-liquid transition in an ultra-viscous metallic glass former	Isabella Gallino Saarland University, Germany
14:20-14:45	A10: Nanoscale effects on crystallization of metallic glasses	Judy J. Cha Yale University, USA
14:45-15:10	A11: β relaxation related bright bands in thin film metallic glasses: localized percolation of flow units captured via transmission electron microscope	Fei Wang Xi'an Jiaotong University, China
15:10-15:25	Session Break	
Session: Nanostructured Metal and Alloys with High Strength and Ductility		Chair: Geun Woo Lee

15:25-15:50	A12: Origin of Uniform Tensile Elongation in Nanostructured Pure Fe Produced by Severe Plastic Deformation	Yoshikazu Todaka Toyohashi University of Technology, Japan
15:50-16:15	A13: Thermal transport properties in amorphous/nanocrystalline metallic composites: a microscopic insight	Valentina Giordano Institut of Light and Matter, France
16:15-16:40	A14: Microstructural and Micromechanical Manipulation Through Rapid Dendrite Growth In Iron Alloys	Ying Ruan Northwestern Polytechnical University, China
17:30	Dinner Social	

Wednesday August 9, 2017		
Room B		
Session: Crystal engineering		Chair: Ivan L'Heureux
8:30-8:55	B01: III-V/Si 3D crystal growth: a thermodynamic description	Ida Lucci FOTON Laboratory - INSA Rennes, France
8:55-9:20	B02: Synthesis and Properties of Coordination Polymers with N-Heterocyclic Carboxylic Acid Ligands	Bowen Hu Harbin Institute of Technology, China
9:20-9:45	B03: The faceted discrete growth and phase differentiation during the directional solidification of 20SiMnMo5 steel	Xiaoping Ma Institute of Metals Research, CAS, China

9:45-10:10	B04: Directional solidification Ti-44Al-9(Nb,Cr,V)-(B,Y) alloy by electromagnetic cold crucible and the mechanical properties & hot deformation resistance	Shulin Dong Northeastern University, China
10:10-10:25	Session Break	
Session: Epitaxial thin films and nanostructures I		Chair: Konrad Thurmer
10:25-10:50	B05: Heteroepitaxial growth of complex chalcogenides and pnictides	Hidenori Hiramatsu Tokyo Institute of Technology, Japan
10:50-11:15	B06: Towards the epitaxial stabilization of multiferroic Gd ₂ (MoO ₄) ₃ thin films	Emerson Coy Adam Mickiewicz University, Poland
11:15-11:40	B07: Ion mass and ion energy selective hyperthermal ion-beam assisted epitaxial growth	Jürgen W. Gerlach Leibniz Institute of Surface Modification (IOM), Germany
12:10-13:30	Lunch Break	

Wednesday August 9, 2017		
Room B		
Session: Metallic Glasses General I		Chair: Byeongchan Lee
13:55-14:20	B08: Glass Phase and Other Multiple Liquid-to-Liquid Transitions Resulting from Two Liquid Phase Competition	Robert Tournier The French National Center for Scientific Research, France
14:20-14:45	B09: Tunable deformation mode in amorphous silicon	Lin Tian University of Göttingen, Germany

14:45-15:10	B10: Nano patterning of Metallic Glasses with Directed Irradiation Synthesis	Jean Paul Allain University of Illinois at Urbana-Champaign, USA
15:10-15:40	Poster Session & Break	
Session: Transformation Chair: Robert Tournier		
15:40-16:05	B11: Transformations in metallic glass forming systems studied via fast scanning calorimetry	Stefan Pogatscher Montanuniversitaet Leoben, Austria
16:05-16:30	B12: Internal record of microstructure evolution at shear bands in designed phase-separation metallic nanoglasses	Jie He Institute of Metal Research, CAS, China
16:30-16:55	B13: Nucleation and growth in the metastable liquid miscibility gap in undercooled molten Pd-Ni-P	Yongxing Nie The Chinese University of Hong Kong, Hong Kong
17:30	Dinner Social	

Wednesday August 9, 2017		
Room C		
Session: Relaxation and Crystallization of Metallic Glasses II Chair: Federico Zontone		
8:30-8:55	C01: Studies of crystallization in undercooled melts of glass-forming binary Zr-based alloys	Dieter Herlach German Aerospace Center, Germany
8:55-9:20	C02: Impact of beta-relaxation on tensile elongation in severely deformed bulk metallic glasses	Nozomu Adachi Toyohashi university of Technology, Japan

9:20-9:45	C03: Mechanically-induced Structural Rejuvenation and Relaxation in Zr-based Bulk Metallic Glass	Koichi Tsuchiya National Institute for Materials Science, Japan
9:45-10:10	C04: Study on Thermophysical Properties of Supercooled Liquid States of High-temperature Melting Alloys	Yun-Hee Lee Korea Research Institute of Standards and Science, Korea
10:10-10:25	Session Break	
Session: 3CG General II Chair: Shingo Ono		
10:25-10:50	C05: New TI based heavy scintillators for medical imaging and radiation detection	HongJoo Kim Kyungpook National University, Korea
10:50-11:15	C06: Tetrel Bonding in the Lead(II) Crystal Structures: Experimental and Theoretical Findings	Damir Safin Limited Liability Company "NIOST", Russia
11:15-11:40	C07: Shaping Particles by Chemical Diffusion and Reaction	Yongsheng Han Institute of Process Engineering, CAS, China
12:10-13:30	Lunch Break	

Wednesday August 9, 2017		
Room C		
Session: Epitaxial thin films and nanostructures II Chair: Jürgen W. Gerlach		
13:30-13:55	C08: Low dimensional nanostructures on Si(110)-"16×2" reconstructing surfaces	Hidehito Asaoka Japan Atomic Energy Agency, Japan

13:55-14:20	C09: 2D- and 3D nucleation during the growth of crystalline ice	Konrad Thurmer Sandia National Laboratories (CA), USA
14:20-14:45	C10: Fabrication of self-organized epitaxial Ag nanodots by using a Ti seed layer	Masao Kamiko The University of Tokyo, Japan
14:45-15:10	C11: Energy dissipation mechanism in the MOCVD epitaxial growth of GaN and surface morphology control	Zhiyuan Gao Beijing University of Technology, China
15:10-15:40	Poster Session & Break	
Session: Growth of oxide materials and structures II Chair: Raffaella Lo Nigro		
15:40-16:05	C12: Oxidation-induced crystallization in metallic glasses	Isabella Gallino Universität des Saarlandes, Germany
16:05-16:30	C13: Crystal Growth of (K,Na)NbO ₃ Particles during Hydrothermal Reaction	Jae-Ho Jeon Korea Institute of Materials Science, Korea
16:30-16:55	C14: Fabrication and characterization of tricolor superstructure of amorphous oxide layers	Yasushi Hotta University of Hyogo, Japan
17:30	Dinner Social	

Thursday August 10, 2017		
Room B		
Session: Nanomaterials I Chair: Simas Rackauskas		
8:30-8:55	B14: Synthesis of nanocrystalline CoMn ₂ O ₄ spinel and its application as supercapacitor electrode	Tseung-Yuen Tseng National Chiao-Tung University, Taiwan

8:55-9:20	B15: Synthesis of energy storable nano particle and its characteristics	Shuhei Inoue Hiroshima University, Japan
9:20-9:45	B16: Crystallization of alkyl-chain-modified semiconductors at air/oil interface using Gibbs adsorption	Satoshi Watanabe Kumamoto University, Japan
9:45-10:10	B17: InAs/GaAs quantum dots grown using As ₂ source in molecular beam epitaxy for near-infrared broadband light source application	Nobuhiko Ozaki Wakayama University, Japan
10:10-10:25	Session Break	
Session: Nanomaterials II Chair: Satoshi Watanabe		
10:25-10:50	B18: In situ observation of metal oxide nanowire growth by environmental TEM	Simas Rackauskas University of Torino, Italy
10:50-11:15	B19: Cellulose Nanocrystals from Sulfuric Acid Hydrolysis and Tempo-Mediated Oxidation for Use in Highly Transparent All-Cellulose Nanopaper	Qinglin Wu Louisiana State University AgCenter, USA
Session: Crystal Growth for Renewable Energy and Energy Storage I Chair: Gennady Cherkashinin		
11:15-11:40	B20: Crystal Growth of Mg ₂ Si for Thermoelectric Applications by the Liquid Encapsulated Vertical Gradient Freezing Method	Hiroshi Katsumata Meiji University, Japan
11:40-12:05	B21: Progress in Rare Earth Doped Low Phonon Energy MPb ₂ Hal ₅ Compounds (M = K, Tl Hal = Cl, Br) and Their Applications	Siva Ram Swaminathan Brimrose Technology Corporation, USA
12:10-13:30	Lunch Break	

Thursday August 10, 2017

Room B

Session: Metallic Glasses General II

Chair: Robert Tournier

13:55-14:20	B22: First principles study of local structures in liquid Ti	Byeongchan Lee Byeongchan Lee, Korea
14:20-14:45	B23: Challenges by commercializing of metallic glasses	Hamed Shakur Shahabi Heraeus Deutschland GmbH & Co., Germany
14:45-15:10	B24: Experimental research and FEM Analysis on the Self-sharpening Behavior of Tungsten-fiber / Metallic Glass Matrix Composite Long Rod	Xiaowei Chen Beijing Institute of Technology, China
15:10-15:25	Session Break	
Session: Growth of oxide materials and structures III		Chair: Jae-Ho Jeon
15:25-15:50	B25: Growth of dielectric oxides thin films by Atomic Layer Deposition	Raffaella Lo Nigro Istituto per la Microelettronica e Microsistemi (IMM), CNR, Italy
15:50-16:15	B26: Exploration of ternary semiconducting oxides by compositionalscreening	Holger von Wenckstern Universit ä Leipzig, Germany
16:15-16:40	B27: Growth of Oxide Nanocrystals and Nano-composites for Energy Applications	Kazuyoshi Sato Gunma University, Japan
17:30	Dinner Social	

Thursday August 10, 2017

Room C

Session: Relaxation and Crystallization of Metallic Glasses III

Chair: Geun Woo Lee

8:30-8:55	C15: Stimulated atomic dynamics in metallic glass membranes under in-situ hydrogenation	Federico Zontone European Synchrotron Radiation Facility, France
8:55-9:20	C16: Sub-Tg enthalpy relaxation in both metallic and non-metallic glasses far from equilibrium	Yuanzheng Yue Aalborg University, Denmark
Session: Single crystals I Chair: Linda Pastero		
9:20-9:45	C17: Ice nucleation in the atmosphere	Claudia Marcolli ETH Zurich, Switzerland
9:45-10:10	C18: Single crystal growth of Na-Si clathrates	Haruhiko Morito Tohoku University, Japan
10:10-10:25	Session Break	
Session: Single crystals II Chair: Claudia Marcolli		
10:25-10:50	C19: Cooperative effects of anionic macromolecules and Mg(II) on the morphology of calcite	Il Won Kim Soongsil University, Korea
10:50-11:15	C20: How Ca-carbonates affect morphology and structure of apatite crystals during growth	Linda Pastero Università degli Studi di Torino, Italy
Session: 3CG General III Chair: HongJoo Kim		
11:15-11:40	C21: An overview on Yb-doped ceramic laser materials	Angela Pirri Institute of Applied Physics, IFAC; National Research Council, CNR, Italy
11:40-12:05	C22: Microfluidic synthesis of full-color emitting CdSe quantum dots with high monodispersity	Jianhong Xu Tsinghua University, China
12:10-13:30	Lunch Break	

Thursday August 10, 2017

Room C

Session: Single crystals III

Chair: Il Won Kim

13:55-14:20

C23: The determination of the control parameters in the Bridgman directional solidification process

Yuanyuan Lian

Xi'an Jiaotong University, China

Session: Metallic Glasses Technologies and Mechanical Properties

Chair: Valentina Giordano

14:20-14:45

C24: Elevated temperature, in-situ SEM based micromechanical testing methods to explore fracture and plastic deformation mechanisms of metallic glasses

Johann Michler

Swiss Federal Laboratories for Materials Science and Technology, Switzerland

14:45-15:10

C25: Metallic glasses/composites prepared by powder metallurgy route and their mechanical properties

Dong-Jun Wang

Harbin Institute of Technology, China

15:10-15:25

Session Break

Session: Crystal Growth for Renewable Energy and Energy Storage II

Chair: Siva Ram

Swaminathan

15:25-15:50

C26: Li-ion thin film electrode materials: correlation between structure, electronic properties and electrochemical activity

Gennady Cherkashinin

Technische Universität Darmstadt, Germany

15:50-16:15

C27: The role of Mg content and interface on the band alignment and structural properties of ZnO based layers grown on Si

Ramon Schifano

Institute of Physics, PAS, Poland

16:15-16:40

C28: Single crystal growth of new energy storage materials

Martin Valldor

Leibniz Institute for Solid State and Materials Research, IFW, Germany

17:30

Dinner Social

August 11

Touring&Sightseeing

Wednesday August 9, 2017

15:10-15:40

Poster Session

P01	Logical Speculation on Metal-Organic Framework Structure on the Basis of Its Unique Growth Behavior and Morphological Characteristics	Sora Choi Yonsei University, Korea
P02	Colloidal Approach for Nano-structured LSCF/GDC Cathode of Solid Oxide Fuel Cells	Chizuru Iwata Gunma University, Japan
P03	Scintillation Properties of Ce doped Tl ₂ GdCl ₅ Scintillator	Sunghwan Kim Cheongju University, Korea
P04	Design and Fabrication of Various Nanostructures of Transition Metal Compounds	Tong Liu Beihang University, China