PROGRAMME AT A GLANCE

Conference organised by:

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Materials Science and Technology

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Wednesday, 14th September

Venue	Empa Akademie	Empa-EAWAG Forum Chriesbach C20
13:30	*Registration*	
14:00	Opening and Plenary session 1 - *chaired by Prof. Thomas Graule*	
14:00	***Introduction*** **- Dr. Francis Cambier, Prof. Thomas Graule, Dr. Michael Stuer**	
14:10	***Shaping the future of sustainable built environment*** **- Prof. Tanja Zimmermann**	
14:30	***The role of rheology in shaping of ceramics for sustainable energy*** **- Prof. Rodrigo Moreno**	
15:00	***DOC-3D-Printing: a European research network on additive manufacturing of ceramics*** **- Prof. Anne Leriche & Dr. David Grossin**	
15:30	*Coffee Break and Poster Session 1*	
16:00	A - AM and prototyping: SLA and DLP Chair: *Dr. Giorgia Franchin*	B - Processing effects on shape or properties Chair: *Dr. Marc Bohner*
16:00	*Shaping of complex ceramic parts using stereolithography and gel casting* - Mr. Pierre Grimaud	Inherent problems in sintering of zirconia nanoparticle compacts - Prof. Martin Trunec
16:20	*Novel approaches of Additive Manufacturing of Multi-Ceramics* - Dr. Christoph Hofstetter	*Influence of filling conditions on dry pressing process for complex near-net-shape production* - Dr. Claudio Ferraro
16:40	*Stereolithography of UV-sensitive polysilazanes: towards 3D customized and complex SiC(O,N) ceramic objects* - Dr. Maxime Balestrat	*Lead-free KNN piezoelectric ceramics – conventional sintering, spark plasma sintering and hot-pressing* - Mrs. Soňa Hříbalová
17:00	*Aqueous photocurable ceramic dispersions for 3D printing of ceramic materials* - Dr. Anna Wieclaw-Midor	*ZrSiO4/ZrO2 based thermal barrier coatings by suspension plasma spraying* - Mr. Eduardo Rosado
17:20	Coffee Break	
17:40	C - AM and prototyping: SLA and DLP Chair: *Dr. Giorgia Franchin*	D - Porous materials, foam structures and their applications Chair: *Dr. Marc Bohner*
17:40	*Additive Manufacturing for Printing Complex and Precise Components from Non-Oxide Ceramics* - Ms. Julia Rabitsch	*Pickering emulsions based on natural clay for 3D printing of porous ceramics* - Dr. Anne Aimable
18:00	*Innovative zirconia-based material shaped by SLA 3D printing* - Mr. Christophe Chaput	*Waste-derived Glass as Precursor for Inorganic Polymers: from Foams to photocatalytic destructors for dye removal* - Dr. Akansha Mehta
18:20	*DLP 3D printing of high strength semi-translucent zirconia ceramics for biomedical implants* - Dr. Dmitrii Komissarenko	*Optimization and scaling up spray granulation process for production of alumina-based ceramic* filters - Dr. N. Sena Yüzbasi
19:00	Welcome reception & Poster Session 2	

Posters

15	*Calcium titanate dielectrics fired by spark plasma sintering* - Prof. Pavel Ctibor	*84*	*Elaboration of 3D bioceramic scaffolds mimicking human bone architecture* - Mr. Paul Danty
21	*Fabrication of Al2O3–RE:YAG (RE=Ce; Ce+Gd) composite ceramic phosphors by reactive SPS* - Dr. Denis Kosyanov	*95*	*Low-temperature method of obtaining UHTCs composite from boron carbide and an intermetallic compound from the Ti-Si system* - Dr. Dawid Kozień
34	*Photocurable ceramic dispersions in the preparation of BST/polymer composites for electronic applications* - Ms. Weronika Bulejak	*106*	*Tape casting of thin glass ceramic electrolytes for battery applications* - Dr. Dörte Wagner
35	*Development of innovative nuclear fuel pellets using additive manufacturing* - Mr. Paul Lemarignier	*113*	*BaTiO3-based thermistor hollow fibers prepared using a phase inversion spinning process for energy efficient gas sorption* - Dr. Jon G. Bell
42	*3D printing of zirconia-alumina composites via Digital Light Processing: optimization of the slurry and the debinding process* - Dr. Barbara Inserra	*114*	*Debinding of additively manufactured parts from spinel nanopowder* - Ms. Paulina Zubrzycka
49	*Ceramic-metal composites fabricated by SLA 3D printing – preparation and characterization* - Ms. Joanna Tanska	*115*	*Complex shaped composite ceramics by slip casting: the case of Y_2O_3–MgO* - Ms. Dariia Chernomorets
57	*Zirconia-graphene composites obtained from colloidal suspensions containing functionalized graphene oxide* - Mr. Michal Kukielski	*116*	*Additive Manufacturing of Porous Ceramic Bodies by Extrusion of Capillary Suspensions* - Ms. Felipe Mello Rigon
58	*Electrodeposition of Protective Ceria Layer on Porous Ferritic Stainless-Steel Substrate for Metal Supported – Solid Oxide Fuel Cells* - Dr. Pradnyesh Satardekar	*117*	*Dynamic Molding: the newest additive manufacturing technology for large-size ceramics and ceramic-based composites* - Dr. Ambra Paterlini
79	*Pressure assisted sintering of metal and ceramic objects produced by robocasting: an innovative approach towards powder technology* - Dr. Riccardo Brucculeri	*118*	*Influence of alumina and kaolinite on the mechanical strength and methane combustion activity of spent battery cathode-based pellets* - Mr. Edwing Alexander Velasco Rozo
82	*Development of high precision pulp-based molds for mass production of hollow high strength alumina spheres* - Dr. Gurdial Blugan		

Thursday, 15th September

Venue	*Empa Akademie*	*Empa-EAWAG Forum Chriesbach C20*
08:00	Registrations	
09:00	Plenary Session 2 - *chaired by Dr. Francis Cambier*	
09:00	***An Analysis of Rapid Volumetric Heating and Sintering of Shaped Ceramics*** **- Prof. Gary Messing**	
09:30	***Mechanical Meta-Ceramic for New Possibilities*** **- Prof. Zhe Zhao**	
10:00	Coffee break, Poster Session 3 and Exhibition	
11:00	E - AM and prototyping: SLA and DLP Chair: *Prof. Vincent Pateloup*	F - Plastic forming: Extrusion, injection moulding and tape casting - Chair: *Dr. Pawel Falkowski*
11:00	*Tomographic Volumetric Additive Manufacturing of Silicon Oxycarbide Ceramics* - Mr. Jorge Madrid-Wolff	CIM process: New challenges in changing customer demands - Mr. Stephan Jegust
11:20	*Laser additive manufacturing of SiC based composite ceramic* - Dr. Jan Huebner	Extrusion of an ecofriendly hard metal paste based on water and celluloseether - Mr. David Werner
11:40	*Additive Manufacturing of Silicon Carbide complex structures* - Dr. Marco Pelanconi	Processing of ceramic silicate-based sodium superionic conductors shaped with tape-casting - Mr. Aikai Yang
12:00	*Development of a new hybrid additive manufacturing process for the fabrication of ceramic/metal hyperfrequency devices* - Mr. Herbert Knoblauch	*Tape-casting of proton conducting ceramic cells* - Dr. Wendelin Deibert
12:20	*Laser deposition and sintering of Barium Titanate as a dielectric component in microelectronic devices* - Dr. Maria Canillas	*Fatigue of flexible zirconia substrates* - Dr. Přemysl Šťastný
12:40	*How to select the right dispersant in your ceramic-filled resin for stereolithography - a practitioner's perspective* - Mr. Wadih Yared	*Stability and tape casting performance of NiO-YSZ suspensions* - Mr. Antonio Alonso
13:00	Lunch	
14:00	Plenary Session 3 *chaired by Dr. Michael Stuer*	
14:00	***Additive manufacturing of ceramics from liquid feedstock*** **- Dr. Giorgia Franchin**	
14:30	***Fundamentals of ceramic shaping for biomedical applications*** **- Dr. Marc Bohner & Dr. Yassine Maazouz**	
15:10	G - AM and prototyping: SLA and curing Chair: *Prof. Zhe Zhao*	H - AM and prototyping: Focus on SLA and direct writing of inks and pastes - Chair: *Prof. Peter Holtappels*
15:10	***UV curing in processing of ceramic materials: capabilities, challenges and forecast*** **- Dr. Pawel Falkowski**	***Modelling and simulation of ceramic green parts 3D printed by stereolithography*** **- Prof. Vincent Pateloup**
15:40	*Development of a 3D simulation model for prediction of curing dimensions, thermally and chemically induced residual stresses in ceramic systems during a stereolithography 3D printing process* - Mr. Dylan Vallet	*Preceramic polymers with tailored rheological properties for Direct Ink Writing* - Mr. Maxime Cheype
16:00	*3D printing investigation of key components for energy applications* - Dr. Nadia EL FELSS	*Shaping of textured ceramics via direct writing of ceramic pastes* - Prof. Elizabeth Kupp
16:20	Coffee Break	
16:40	I - AM and prototyping: 2PP, IJP and BJ Chair: *Prof. Zhe Zhao*	J - AM and prototyping: FDM, robocasting and extrusion Chair: *Prof. Peter Holtappels*
16:40	*Nanometer structured yttria stabilized zirconia via two-photon-polymerization for powder processing* - Dr. Johanna Sänger	*Influence of the filament deposition path on the mechanical properties of alumina parts, printed by robocasting from an environmentally friendly paste* - Ms. Delphine Gourdonnaud
17:00	*Shaping of ceramics by hybrid binder jetting* - Dr. Enrique JUSTE	*Shaping of ceramics by thermoplastic material extrusion-based additive manufacturing methods* - Dr. Frank Clemens
17:20	*Fabrication of composite electrodes for Lithium-ion batteries by inkjet printing* - Ms. Kinga Sztymela	*Production strategies for complex shapes cer-cer structures by microextrusion* - Dr. Andrea Bartoletti
17:40	*Manufacturing Strategies for Active Alumina-based Heterogeneous Catalysts by Binder Jetting* - Ms. Hanh My Bui	*Additive Manufacturing of Large/Complex Ceramic Components Using Filament Based Fused Deposition Modeling* - Dr. Amir Hadian
18:00	*Combination of Layerwise slurry deposition and binder jetting (LSDprint) for the additive manufacturing of advanced ceramic materials* - Dr. Andrea Zocca	*Multimaterial Ceramic FDM 3D Printing* - Dr. René Wick-Joliat
18:20	*Investigation of Inkjet printing (IJP) to develop diffusion barrier layers on Solid Oxide Cell (SOC) interconnects* - Ms. Samaneh Daviran	*Water-soluble Binder development for ceramic material extrusion based additive manufac-turing process* - Mrs. Fateme Sarraf
20:00	Gala Dinner - Restaurant zum Kropf	

Friday, 16th September

Venue	Empa Akademie	Empa-EAWAG Forum Chriesbach C20
09:00	Plenary Session 4 - *chaired by Prof. Thomas Graule*	
09:00	***Combining synthesis and shaping: a route to advanced ceramics for electrochemical energy conversion and storage technologies* - Prof. Peter Holtappels**	
09:40	K - Slurry and sol-gel based processing Chair: *Prof. Anne Leriche*	L - DIW, Raw materials synthesis and treatment Chair: *Prof. Rodrigo Moreno*
09:40	*Centrifugal casting of ceramic-metal composites with a gradient structure* - Prof. Paulina Wiecinska	*Direct ink writing of porous geopolymers for thermochemical energy storage* - Ms. Camille Zoude
10:00	*Tape casting and die pressing of large flat Na-b"-Al2O3 solid electrolytes for planar Na-Batteries* - Dr. Natalia Kovalska	*Synthesis of UHTC powders and preparation of high concentration UHTC slurry* - Dr. Sea Hoon Lee
10:20	*Lead-free Electrospun Ferroelectric Ceramic Nanofibers and Their Applications* - Dr. Arun Ichangi	*Geopolymer plates as flame retardant materials* - Prof. Sylvie Rossignol
10:40	Coffee Break and Exhibition	
11:10	M - AM and prototyping: Laser and hybrid shaping Chair: *Prof. Anne Leriche*	N - Colloidal dispersion and surface modification Chair: *Prof. Rodrigo Moreno*
11:10	*Combination of robocasting and Porogenes for highly porous ceramics scaffolds with hierarchical porosity* - Dr. Laurent Gremillard	*Composites obtained by colloidal processing: challenges and perspectives* - Prof. Mikolaj Szafran
11:30	*Inconel 625 – WC composites obtained by laser additive manufacturing* - Prof. Dariusz Kata	*Colloidal self-assembly in ceramic shaping processes* - Dr. Manuella Cerbelaud
11:50	*Customized ceramic granules for laser powder bed fusion of crack-reduced complex-shaped alumina composite components* - Mr. Stefan Pfeiffer	*Shaping of alumina beads by drop-casting of the water-based and photopolymerizable suspension into silicone oil and UV curing* - Mr. Radosław Zurowski
12:10	*Shaping using additively printed soluble molds and support material* - Prof. Dirk Penner	*Ceramic composites reinforced with graphene or metallic particles* - Dr. Piotr Wiecinski
12:30	*Effect of Alkali Activation on 3D Printed Waste Pharmaceutical Glass for Dye Adsorption Process* - Mr. Mokhtar Mahmoud	
13:00	Lunch	
14:30	Optional High Performance Ceramics Laboratory Visit (Max. 30 participants)	

Don't miss our next events!

young Ceramists Additive Manufacturing Forum - yCAM 2022

yCAM is a symposium and a forum on Additive Manufacturing of Ceramics dedicated to young scientists. **yCAM 2022** will be organised **from 9th to 11th November 2022** at the **University of Barcelona in Spain!** Extended deadline for early bird registration is 30th September 2022. More information: **euroceram.org/2022-ycam-forum-in-barcelona**

The **XVIIIth Conference and Exhibition of the European Ceramic Society** will take place in **Lyon, France, from 2nd to 6th July 2023**. More information: **ecers2023.org**