



yCAM 2025

YOUNG CERAMISTS ADDITIVE MANUFACTURING FORUM  
INP ENSIACET • TOULOUSE • 23-25 APRIL

# PROGRAMME AT A GLANCE

Organised by



## Wednesday 23<sup>rd</sup> April 2025

**08:15** Registration

**OPENING** -- Chaired by: Anna De Marzi, Johanna Sanger and Sarah Diener

**09:00** Welcoming

**09:15** Sponsors Pitch

**Material Jetting** -- Chaired by: Aljaž Ivekovic and Sarah Diener

09:40 Porosity-Graded FGMs via Binder Jetting: A Study on Ceramic Materials -- **Francesco Bertolini**

10:00 Influence of powder granulometry on the properties of Binder Jetting AlN parts -- **Fanny Pruvost**

**10:20** Coffee break

**Vat Photopolymerization** -- Chaired by: Garima Thakur and Charlie Clark

10:50 Optimizing DLP AM of Lunar Regolith Ceramics via Magnetic Beneficiation -- **Maxim Isachenkov**

11:10 Vat photopolymerization of aluminum nitride based thermal management systems -- **Lilit Baghdasaryan**

11:30 Fabrication of SiOC(Fe) structures by Vat photopolymerization -- **Milan Vukšić**

11:50 Fabrication of Hydroxyapatite Microneedles for Dental Applications using the LCM-DLP 3D Printing Technique -- **Lus Pereira**

12:10 Additive manufacturing of porous glass-ceramic photocatalytic 3D structures for wastewater treatment -- **Mansi Dua**

**12:30** Lunch

**Technology I** -- Chaired by: Andrea Zocca and Maximilian Staudacher

13:30 Pressureless Spark Plasma Sintering of Additively Manufactured Ceramics -- **Andraz Kocjan**

14:00 AI-assisted elastic control of 3d printing by micro-extrusion -- **Julien Gerhards**

14:20 Ceramic/metal multi-material parts by 3D extrusion printing and sintering: experiments and FEM modeling of the sintering stage -- **Elsa Nouguier**

**14:40** Poster Session I and Coffee break

**Technology II** -- Chaired by: Andrea Zocca and Maximilian Staudacher

16:10 Development of Zirconia Slurry for Vat Photopolymerization and Supercritical Carbon Dioxide Extraction -- **Nonna Nurmi**

**Emerging, hybrid and multi-material** -- Chaired by: Daorong Ye and Romani Trihan

16:30 3D printing of silica glass -- **Ins Laurent**

16:50 Printing and characterization of multiscale porosity hydroxyapatite bone scaffold by dynamic molding -- **Isaline Lalanne**

17:10 Study of the 3D printing of advanced ceramics with acoustic waves -- **Cloe Benoit**

17:30 Effects of water content and surfactant/acrylate ratio on 3D printed cordierite lattice structures by hybrid direct ink writing of silicone emulsions -- **Valeria Diamanti**

**18:00** Welcome reception

yCAM 2025 is sponsored by:



## Thursday 24<sup>th</sup> April 2025

### Applications I – Chaired by: Mathilde Maillard and Johanna Sanger

09:00	From research to production: How to get to a serial production of parts by Ceramic AM – <b>Sarah Diener</b>
09:30	Direct-ink writing of cobalt-zirconia monolithic catalysts for hydrogen production – <b>Seyed Ali Razavi</b>
09:50	Alumina microdevices produced from a derived slip-casting technique for medical applications – <b>Romain Trihan</b>
10:10	Additive manufacturing at help for manned Moon exploration – <b>Julien Granier</b>
<b>10:30</b>	<b>Coffee break</b>

### Applications II – Chaired by: Mathilde Maillard and Johanna Sanger

11:00	Direct Ink Writing of high-performance structural elements based on alkali-activated Lunar regolith – <b>Marco D’Agostini</b>
11:20	Vat photopolymerization for fabricating novel components for thermal management – <b>Lisa Mikiss</b>
11:40	3D Printing of Ceramic Substrates for Coral Larvae Settlement – <b>Matthew Drane</b>
<b>12:00</b>	<b>Lunch</b>

### Material Extrusion I – Chaired by: Marco D’Agostini and Larissa Wahl

13:00	Study of the 3D printing process of TiO <sub>2</sub> using DIW for water treatment -- <b>Jose Antonio Padilla Sanchez</b>
13:20	Development of preceramic polymer-based filaments suitable for FFF of functional SiOC ceramics -- <b>Vaibhav Pandey</b>
13:40	Deformation mechanism of CF-PEEK parts manufactured by the FFF technology during the process chain (LSI) to a final CMC -- <b>Wolfgang Freudenberg</b>
14:00	Fast Direct Ink Writing Coupled With Ultra-Fast Sintering -- <b>Flavie Lebas</b>
<b>14:20</b>	<b>Poster Session II and Coffee break</b>

### Analysis – Chaired by: Maximilian Staudacher and Anna De Marzi

15:50	Analysis and categorisation of defects in additive manufacturing of ceramics -- <b>Maximilian Staudacher</b>
16:10	Electron Backscatter Diffraction (EBSD) Analysis on Hybrid Bioceramic 3D-printed Parts -- <b>Sarah Nistler</b>
<b>17:15</b>	<b>Bus Transfer to the Guided Tour</b>
<b>17:45</b>	<b>Guided Tour @ Place d’Armenie, 31000 Toulouse, France</b>
<b>19:30</b>	<b>Gala Dinner @ Flashback Cafe, 5 All. de Brienne, 31000 Toulouse, France</b>
<b>00:45</b>	<b>Bus Transfer</b>

## Friday 25<sup>th</sup> April 2025

### Patent and Funding – Chaired by: Anna De Marzi, Johanna Sanger and Sarah Diener

09:00	Presentation of the Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowships and European Research Council (ERC) Calls (Focus on Starting Grants) -- <b>Isabelle Yu Wai Man</b>
09:25	Lessons Learned from an ERC Project: Insights and Advice for PhD Students and young scientists -- <b>Celine Merlet</b>
09:40	Raising Awareness of Intellectual Property for PhD Students and Early-Career Researchers -- <b>Jean-Marie RIGAUD</b> and <b>Carole Cesar</b>
<b>10:10</b>	<b>Coffee break</b>

### Material Extrusion II – Chaired by: Marco D’Agostini and Wolfgang Freudenberg

10:40	Fabrication of multi-scale porous structures for hydrogen evolution: DIW of strontium titanate pH-responsive emulsion gels -- <b>Zhidong Luo</b>
11:00	Direct ink writing of zeolite porous bodies for atmospheric water generation – <b>Xavier Chouquet</b>
11:20	Environmentally friendly water-based robocasting of complex barium titanate structures – <b>Larissa Wahl</b>
11:40	Material Thermal Extrusion (MTE) of nano TiO <sub>2</sub> -Graphene based photoelectroactive electrodes for green hydrogen generation -- <b>Pablo Ortega Columbrans</b>
<b>12:00</b>	<b>YCN Presentation</b>
<b>12:15</b>	<b>Closing of yCAM 2025</b>



### Session I • Wednesday 23rd April • 14:40

- 131 Direct ink writing of geopolymers based on metakaolin and ceramic waste – **Carlotta Pacente**
- 129 Reaction bonded technical ceramics via binder jet 3D printing -- **Philipp Koberg**
- 109 LSD-print of multicolored dental restorations by lithium disilicate and zirconia -- **Janett Hilgenfeld**
- 101 Thermal evolution of preceramic polysiloxanes for Digital Light Processing (DLP) to silicon oxycarbide (SiOC) -- **Zofia Kucia**
- 97 Preparation of the High-Entropy Ceramic suspensions suitable for Digital Light Processing technique -- **Erik Ščasnovič**
- 96 Binder Jetting of 3D alumina ceramic – **Rémi Perin**
- 89 Residual stress profiles in complex 2-materials ceramic shapes produced through Vat-Photopolymerization -- **Martina Colombo**
- 85 Synthesis of preceramic polymers for Digital Light Processing 3D printing of SiOC materials -- **Wojciech Wieczorek**
- 79 Microstructural Study of Porosity in Composite 3D Printed Scaffolds for Spinal Fusion -- **Eliska Siska Viragova**
- 76 Topology Optimization and Mechanical Characterization of Triply Periodic Minimal Surface (TPMS) Structures in Tricalcium Phosphate and Hydroxyapatite for Bone Tissue Engineering -- **Giulia Verlato**
- 75 Aspects of Ceramic Slurry Preparation for Vat-Photopolymerization Additive Manufacturing -- **Jošt Oblak**
- 73 Binder removal process in large 3D printed parts effect of different atmospheres -- **Přemysl Šťastný**
- 68 Stereolithographic 3D-printed zinc oxide structures for efficient wastewater remediation -- **Nana Brguljan**
- 65 3D-Printed Bioactive Glass-Glass/Ceramic Based Scaffolds: Advances in Bone Tissue Engineering for the #ReBone Project -- **Maria Erato Pianou**
- 48 Crystallographic texturing of barium titanate by combination of 3D printing and templated grain growth -- **Jan Pišťák**
- 42 Innovative 3D Printing of Acid-Activated Geopolymers: Rheological Insights -- **Gabriel Tochetto**
- 30 Integrating additive manufacturing and powder sintering techniques for fabricating advanced transparent 3D glass structures – **Garima Thakur**
- 18 3D Printed composite scaffolds for bone regeneration -- **Liana Mkhitarian**
- 11 Reinforcing the comprehension of deformations in FFF printing for silicon carbide materials -- **Maëlys Gauthé**
- 143 Mechanical Properties of Hybrid Zirconia Dental Implant -- **Luís Pereira**
- 142 Rheology of photocurable zirconia suspensions as quality factor DLP printing -- **Patrik Sokola**

### Session II • Thursday 24th April • 14:20

- 139 Fabrication of ceramics complex part using pellets additive manufacturing (PAM) -- **Pierre Grimaud**
- 137 Study of TiO<sub>2</sub>-HCl inks to evaluate chemical sintering in 3D printing processes using DIW for water treatment -- **Mariona Roura**
- 128 Rheological analysis of alternative magnesium cement for its suitability for additive manufacturing – **José Antonio Padilla Sánchez**
- 117 Life Cycle Assessment of Alumina sheets obtained by FDM and SLA -- **Joaquim Serra-Rada**
- 100 Properties and Limitations of Hydroxyapatite-Based Microscaffolds -- **Roman Fialka**
- 99 Performance evaluation of new polymer additives for technical ceramic shaping processes – **Ismail Mbarki**
- 87 Preparation of nickel/silica heterogenous catalysts obtained by Direct Ink Writing 3D printing -- **Łukasz Wilk**
- 86 Thermal processing of nickel/silica scaffolds prepared by Direct Ink Writing 3D printing -- **Jakub Marchewka**
- 80 Optimizing BaTiO<sub>3</sub>-Filled PLA Filaments for FDM: Toward Printable Piezoelectric Materials -- **Soufyane Satha**
- 55 Application of additive manufacturing to produce innovative UO<sub>2</sub> nuclear fuels -- **Ivan Mestrallet**
- 49 Laser powder bed fusion (L-PBF) manufacturing of multi-material metal-ceramic devices -- **Maria Camila Zapata Lopez**
- 47 Preparation of Implants Combining 3D Printing and Direct Foaming Method -- **Pavína Šárky**
- 37 Advancements in Additive Manufacturing of ferroelectric ceramic super-structures with unique metamaterial response -- **Kyriakos Didilis**
- 20 Development of reactive robocasting applied to calcium phosphate compounds in the field of bone repair -- **Bertille Belleville**
- 6 Fused Deposition Modelling of Carbon Fibre-reinforced SiC Ceramic Matrix Composites -- **Daorong Ye**
- 4 3D-Printed  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> scaffolds for catalytic applications -- **Gemma Cruz Ortega**
- 1 Carbon fiber/SiOC ceramic matrix composite truss-based structures fabricated via UV-assisted robot direct ink writing -- **Anna De Marzi**
- 141 Combining rheology, image analysis and machine learning to evaluate the printability of particle-loaded suspensions -- **Enrica Luzzi**
- 110 Direct ink writing of zeolite porous bodies for atmospheric water generation -- **Xavier Chouquet**