09:00-09:30 **I3D: Keynote** **Chair: A. Sendemir** **Dock Six II**	**Bridging the Future: Development of Bioinks for Clinical Translation** **V. Prasad Shastri** Institute for Macromolecular Chemistry, and BIOSS-Centre for Biological Signalling Studies, University of Freiburg, Freiburg, Germany 79104
09:30-11:00 **Dock Six II**	**I3D: Bioprinting I** **Chair: A. Sendemir**
09:30-10:00 **INVITED**	**Optimizing Flow Rates of an Integrated Microfluidic Pumping System for Peptide-Based 3D Bioprinting using a Predictive Machine Learning Model** **C. Hauser** King Abdullah University of Science and Technology, Saudi Arabia
10:00-10:30 **INVITED**	**Laser bioprinting current advancements and challenges** ***I. Zergioti*[1, 2]** [1]*School of Applied Mathematical and Physical Sciences, National Technical University of Athens, Heroon Polytechneiou 9, 15780, Athens, Greece* [24]*PhosPrint P.C., Attika Technology Park Lefkippos, Agia Paraskevi, Athens, Greece*
10:30-10:45	**Design of a Printed Matrix for Composite Bone Implants using 3D Printing Techniques** **A. Orfanos**[1], K. Tsimenidis[1], V. Karagkiozaki[1] [1]*BL Nanobiomed P.C., 20th Km Thessaloniki – Tagarades Road, Thessaloniki, Greece, 57001*
10:45-11:00	**Pro-angiogenic hydrogel formulation allowing the 3D printing of cancer cells scaffolds and response on the chick chorioallantoic membrane (CAM)** ***M.-A. Fortin*[1,2]*, Z. Liu[1,2], J. Oh[3], R.C.-Gaudreault[4], S. Gobeil[4]* [1]Laboratoire de Biomatériaux pour l'Imagerie Médicale (BIM), Axe Médecine Régénératrice, Centre de Recherche du Centre Hospitalier Universitaire de Québec –Université Laval, Québec, QC, Canada [2]Département de Génie des Mines, de la Métallurgie et des Matériaux, Université Laval, Québec, QC, Canada [3]Department of Chemistry, Concordia University, Montréal, QC, Canada [4]Département de Médecine Moléculaire, Faculté de Médecine, Université Laval, Québec, QC, Canada
11:30-13:30 **Dock Six II**	**I3D: Bioprinting II** **Chair: V. Prasad Shastri**
11:30-12:00 **INVITED**	**Development of a Co-axial 3D Bioprinted Blood Vessel for Self-Sustaining Oxygenation** F. N. Kutlu[1], B. Gulicli[1], Z. Demirel[1], M. Conk Dalay[1,2], B. O. Gurses[3], **A. Sendemir**[1,2,4] [1]*Department of Bioengineering, Graduate School of Natural and Applied Sciences, Ege University, Izmir, Türkiye* [2]*Department of Bioengineering, Faculty of Engineering, Ege University, Izmir, Türkiye* [3]*Department of Mechanical Engineering, Faculty of Engineering, Ege University, Izmir, Turkey* [4]*Department of Biomedical Technologies, Graduate School of Natural and Applied Sciences, Ege University, Izmir, Türkiye*
12:00-12:15	**Laser Induced Forward Transfer bioprinting of cells inside Extracellular matrices in controlled depth.** **S. Elezoglou**[1], A. Hatziapostolou[4], M. Chliara[1], I. Theodorakos[1], A. Klinakis[2,3], I. Zergioti[1,3] [1]*National Technical University of Athens, School of Applied Mathematical and Physical Sciences, Athens, Greece* [2]*Biomedical Research Foundation of the Academy of Athens, Athens, Greece* [3]*PhosPrint P.C., Attika Technology Park Lefkippos, Greece* [4]*Department of Naval Architecture, School of Engineering, University of West Attica, Athens, Greece*
12:15-12:30	***In vitro* and *in silico* Modeling of Shear Stress and Pressure Applied on Cells with Different Nozzle Types and Printing Speeds in 3D Bioprinting** B. Gulicli[1], Z. G. Morcimen[1], F. Nur Kutlu[1], B. O. Gurses[2], **A. Sendemir**[1,3,4] [1]*Department of Bioengineering, Graduate School of Natural and Applied Sciences, Ege University, Izmir, Türkiye* [2]*Department of Mechanical Engineering, Faculty of Engineering, Ege University, Izmir, Türkiye* [3]*Department of Bioengineering, Faculty of Engineering, Ege University, Izmir, Türkiye,* [4]*Department of Biomedical Technologies, Graduate School of Natural and Applied Sciences, Ege University, Izmir, Türkiye*
12:30-12:45	**DLP as a Manufacturing Method for Transdermal Drug Delivery Composites** **D. Tomczak**[1], R. Wichniarek[2], W. Kuczko[2], T. Osmalek[3], M. Wojtylko[3] [1]*Faculty of Chemical Technology, Poznan University of Technology, Poland* [2]*Faculty of Mechanical Engineering, Poznan University of Technology,Poland* [3]*Department of Pharmaceutical Technology, Poznan University of Medical Sciences, Poland*

09:00-11:00 **Dock Six II**	**I3D 3D Printing** **Chair: Wen Feng Lu**
9:00-9:30 **INVITED**	**3D Fabrication of Metasurfaces: Methods and Applications in Microwaves** **Z. Viskadourakis**[1] and G. Kenanakis[1], *[1] Institute of Electronic Structure and Laser (IESL) – Foundation for Research and Technology-Hellas (FORTH)* *N. Plastira Ave. Vassilika Vouton, Heraklion 70013, Greece*
9:30-9:45	**A Circular Economy Approach of Recycled Polyester Textiles for 3D Printing Flexible Textiles** **L. Hu**, S. Jiang *School of Fashion and Textiles, The Hong Kong Polytechnic University, Hung Hom, Kowloon, 999077, Hong Kong, China*
9:45-10:00	**Effectiveness of Graphene and Carbon Nanotubes for the Design of Printable Multifunctional Polymer Nanocomposites** **R. Kotsilkova**[1], E. Ivanov[1,2], V. Georgiev[1,2], T. Batakliev[1,2], G. Spinelli[1,3] *[1]Open Laboratory on Experimental Micro & Nanomechanics, Institute of Mechanics, Bulgarian Academy of Sciences, Bulgaria* *[2]NanoTechLab Ltd., Acad. G. Bonchev Str., Bl. 4, 1113 Sofia, Bulgaria 3University Giustino Fortunato, Italy*
10:00-10:15	**Development of a magnetron sputtering source made out of additively manufactured components** **T. Schumpa**[1], M. Herold[2], M. Top[3] *Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, Germany*
10:15-10:30 **YRA Candidate**	**Improving Performance of Aerosol Jet Printing using Machine Learning-Driven Optimization** **P. Pandey**, S. Ziesche *Fraunhofer Institute for Ceramic Technologies and Systems IKTS* *Winterbergstr. 28, 01277 Dresden, Germany*
10:30-10:45	**Revealing the relationship of 3D matrices and their composite fillers using Secondary Electron Hyperspectral Imaging and X-ray ptychography.** **N.T.H. Farr**[1], D. Gregory[1], A. Mele[1], N. Sengökmen Özsöz[1], P. Li[2], J.M. Rodenburg[3], C. Majewski[4], F. Claeyssens[1], I.Roy[1], C. Rodenburg[1] *[1]Department, University, Compan Department of Materials Science and Engineering, University of Sheffield, Sheffield, UK* *[2]Diamond Light Source Ltd, Harwell Science and Innovation Campus, Didcot, UK [3]Department of Electronic and Electrical Engineering, University of Sheffield, UK [4]Department of Mechanical Engineering, University of Sheffield, Sheffield, UK*
10:45-11:00	**Nanodroplet Flight Control in Electrohydrodynamic Redox 3D Printing** **M. Menétrey**[1], L. Zezulka[1,2], P. Fandré[1], F. Schmid[1], R. Spolenak[1] *[1] Laboratory for Nanometallurgy (Department of Materials, ETH Zürich)* *[2] Institute of Physical Engineering (Faculty of Mechanical Engineering, Brno University of Technology)*

15:30-18:00 **Dock Six II**	**I3D: 3D-Printing II** **Chair: Z. Viskadourakis**
15:00-15:30 **KEYNOTE**	**3D Printing of Field's Metal for Multi-functional Electronics** Shaohua Ling#[1], Yu Jun Tan[1], Benjamin Tee[2] and **Jerry Y.H. Fuh***[1,3] *[1]Department of Mechanical Engineering,* *[2]Department of Material Science and Engineering, and* *[3]NUS (Chongqing) Research Institute, China*
15:30-16:00 **INVITED**	**Studies of 3D Printed Micro-Lattice Interpenetrating Phase Composites** Guo Xiao, Jerry Fuh, **Wen Feng Lu** *Department of Mechanical Engineering, National University of Singapore*
16:00-16:15	**Surface quality and tool wear evaluation as a function of AM workpiece vibration** **G. Ramírez**[1], M. Ortiz[2], E. Garcia-Llamas[1], E. Vidales[1], N. Cuadrado[1], M. Fuentes[3] *[1] Eurecat, Technological Center of Catalonia, Unit of Metallic and Ceramic Materials, Plaça de la Ciència 2, 08243 Manresa, Spain* *[2]Eurecat, Technological Center of Catalonia, Applied Artificial Intelligence (AAI), Edifici H3, Parc Agrobiotech, Planta baja, 25003 Lleida, Spain* *[3]Grupo Sevilla Control, Aerospace engineering, Machining and Assemblies. R+D+I Department C/Manganeso, 2 – P.I. Calonge, 41007 Seville, Spain*
16:15-16:30	**Contact fatigue behavior of additive manufactured Ti6Al4V subjected to different finish machining conditions.** **N. Cuadrado**[1], G. Ramírez[1], E. Vidales[1], E. Garcia-Llamas[1], M. Fuentes[2] *[1] Eurecat, Technological Center of Catalonia, Unit of Metallic and Ceramic Materials, Plaça de la Ciència, 2, Manresa 08243, Spain.* *[2] Grupo Sevilla Control, Aerospace engineering, Machining and Assemblies. R+D+I Department C/Manganeso, 2 – P.I. Calonge, 41007 Seville, Spain*

I3D POSTER SESSION
Wednesday 5 July to Thursday 6 July: Poster Display
Thursday 6 July (17:30-20:00): Poster Presentation

I3D-1	**Thermally conductive composites for FDM 3D printing** **P. Roudný**[1], T. Syrový[2] Department of Graphic Arts and Photophysics, Faculty of Chemical Technology, University of Pardubice, Czech Republic
I3D-2	**Fabrication of stainless steel filaments for fused deposition modeling printing technology** C. Borriello, **L. Tammaro**, S. Portofino, P. Iovane, S. Galvagno ENEA, SSPT-PROMAS-Nano, Portici Research Centre, P.zzale E. Fermi, 80055 Portici (Na),Italy
I3D-3	**Fabrication of 3D hydrophobic surfaces by fused deposition modeling printing technology** **C. Borriello**[1], L. Tammaro, G. Pandolfi, S. Portofino, P. Iovane, P. Tassini, S. Galvagno ENEA, SSPT-PROMAS-Nano. Portici Research Centre, P.zzale E. Fermi, 80056 Portici (Na), Italy
I3D-4	**Developing 3D Printed Fashion Prototypes with Traditional Chinese Geometric Patterns** **J. Liu**[1], S.X. Jiang[1※] School of Fashion and Textiles, The Hong Kong Polytechnic University, Hung Hom, Kowloon, 999077, Hong Kong, China.
I3D-5	**A 3D-Printed Cell-laden Hydrogel Model for the Evaluation of Radiotherapeutic Implants for the Treatment of Eye Cancer** **M.-A. Fortin**[1,2], M. Akbari[1,2], S. Lemay[1,2], J.Roy[1,2], J.Bérubé[3], S. Landreville[3] [1]Laboratoire de Biomatériaux pour l'Imagerie Médicale (BIM), Axe Médecine Régénératrice, Centre de Recherche du Centre Hospitalier Universitaire de Québec –Université Laval, Québec, QC, Canada [2]Département de Génie des Mines, de la Métallurgie et des Matériaux, Université Laval, Canada; [3]Centre Universitaire en Ophthalmologie (CUO)- Recherche, Hôpital du Saint-Sacrement, Centre de Recherche du CHU de Québec – Université Laval (CR-CHUQ-UL) and Département d'Ophtalmologie, Faculté de Médecine, Université Laval, Québec, Québec, Canada
I3D-6	**Fatty acid – functionalized cellulose nanocomposites for vat photopolymerization** M. Maturi[1], **C. Spanu**[1], N. Fernàndez-Delgado[2], S. I. Molina[2], M. Comes Franchini[1],*, E. Locatelli[1],*, A. Sanz de Leòn[2],* [1]Department of Industrial Chemistry "Toso Montanari", University of Bologna, Italy [2]Department of Materials Science, Metallurgical Engineering and Inorganic Chemistry, I. M. y Q. I., IMEYMAT, Science Faculty, University of Càdiz, Spain
I3D-7	**The application of filaments made from waste products of bread production in 3D printing** **W. Ciesielski***, T. Girek, D. Kulawik *Jan Dlugosz University in Czestochowa, 13/15 Armii Krajowej Ave., 42-200 Czestochowa, Poland*
I3D-8	**3D printed biocarriers from innovative modified pillared aluminosilicates** **EA. Economou**[1], V. Tziakas[1], S. Koltsakidis[2], D. Tzetzis[2], G. Romanos[3], T. Sfetsas[1] *1. QLAB Private Company, Research & Development, Quality Control and Testing Services, 57008 Thessaloniki, Greece; t.sfetsas@q-lab.gr* *2. Digital Manufacturing and Materials Characterization Laboratory, School of Science and Technology, International Hellenic University, Thermi, Greece* *3. Institute of Nanoscience and Nanotechnology, National Center of Scientific Research "Demokritos", Agia Paraskevi, Athens, 15310, Greece,*
I3D-9	**Parametric Computer Aided Design and 3D Printing of Ceramic Biocarriers for Wastewater Treatment** **T. Profitiliotis**[1], D. Tzetzis[1], EA. Economou[2], S. Tziakas[2], T. Sfetsas[2] *[1]. Digital Manufacturing and Materials Characterization Laboratory, School of Science and Technology, International Hellenic University, Thermi, Greece* *[2]. QLAB Private Company, Research & Development, Quality Control and Testing Services, 57008 Thessaloniki, Greece*
I3D-10	**Development of a 3D Printed Bioinspired Esophageal Stent to Address Migration Issues in Palliative Treatment of Esophageal Cancer** **T. Profitiliotis**[1], S. Koltsakidis[1], D. Tzetzis[1] *[1] Digital Manufacturing and Materials Characterization Laboratory, School of Science and Technology, International Hellenic University, Thermi, Greece*
I3D-11	**Experimental Investigation on the Mechanical Behavior of H13 Hot Work Tool Steel produced by the Selective Laser Melting (SLM) Additive Manufacturing Technology** **E. Giarmas**[1], V. Tsakalos[1], E. Tzimtzimis[1], N. Kladovasilakis[1], M. Drakaki[1], D. Tzetzis[1] *[1]School of Science and Technology, International Hellenic University, Digital Manufacturing and Materials Characterization Laboratory, Thermi, Greece*
I3D-12	**Reviving History through 3D Technologies: Redesigning an Anglo-Saxon Lyre for Acoustic Excellence using 3D Printing Prototypes and Modal Analysis** A. Papoutsis[1], **E. K. Tzimtzimis**[1], N. Koumartzis[2], K. Tsongas[1,3], D. Tzetzis[1] *[1]Digital Manufacturing and Materials Characterization Laboratory, International Hellenic University, Thermi, Greece* *[2]Luthieros Music Instruments Ltd, Thessaloniki, Greece* *[3]Department of Industrial Engineering and Management, School of Engineering, International Hellenic University, Greece*
I3D-13	**Enhancing 3D Printing Technology, through Machine Learning Approaches: Exploring Support Structures using Multimedia Data Analysis** **E. Tzimtzimis**[1], R. Kotsakis[2], T. Profitiliotis[1], D. Tzetzis[1] *[1] School of Science and Technology, International Hellenic University, Thermi, Greece* *[2] Department of Information and Electronic Engineering, School of Engineering, International Hellenic University, Greece*