

Tentative Program			
Monday (September 18)			
18:00 - 20:00	Welcome Reception (Grand Parlor Ballroom - 2nd Floor) Hilton Orrington/Evanston, 1710 Orrington Ave, Evanston, IL 60201		
Tuesday (September 19)			
7:30 - 8:15	Breakfast (Grand Parlor Ballroom - 2nd Floor)		
8:15 - 8:30	Welcome and Remarks (Grand Parlor Ballroom - 2nd Floor)		
8:30 - 9:30	Plenary Session #A (Grand Parlor Ballroom - 2nd Floor) Prof. John Rogers: Manufacturing for 3D Functional Mesosystems: From Neural Interfaces to Environmental Monitors		
9:30 - 10:50	Paper Sessions 1-2-3		
	Additive Manufacturing 1 (Bonbright Room - 9th Floor) (Session chair: Lawrence Kulinsky Co-chair: Anvesh Gaddam)	ECM/EDM (James Room - 9th Floor) (Session chair: Josko Valentincic Co-chair: Peiyao Cao)	Process Sensing and Data Analytics 1 (Rogers Room - 9th Floor) (Session chair: Sixian Jia Co-chair: Michael Kreil)
	Additive Manufacturing of Structures and Electronics: Robotic metamaterials that walk, talk and listen (Xiaoyu Rayne Zheng, invited)	A Shunt-Assisted Silicon Electrode for Micro Electrochemical Machining Yulan Zhu, Guodong Liu, Yong Li*, Hao Tong	Data-Driven Methods for Critical Dimension Inferencing in Nanomanufacturing Zhaoyan Fan, Robert Gao*
		A High Energy Density Pulsed Power Supply for Micro EDM of High Aspect Ratio Holes Peiyao Cao, Yong Li*, Hao Tong	DRDIC: Deep Recurrent Digital Image Correlation for Discontinuous Deformation Measurement in Carbon Fiber Reinforced Composites Ru Yang, Ping Guo*
	Electrokinetic Manipulation of Biological Cells towards Biotechnology Applications Songyuan Yan, Zarya Rajestari, Lawrence Kulinsky*	Experimental Investigation on Material and Debris Removal by Flowing Dielectric Film in Electrical Discharge Machining Asif Tanveer, Shiv G. Kapoor*	Quality Assurance in the Manufacture of Bipolar Plates: Evaluation of Effective Micro-Geometry by Optical Dimensional Metrology Kerstin Zangl*, Reinhard Danzl, Franz Helml, Lukas P. Izelbauer, Michael Kreil
	Laser-Induced Forward Transfer of High Viscosity Graphene for Flexible Electronics Applications Dawood Dilmy*, Anvesh Gaddam, Stefan Dimov, Gerard Cummins	Operational Feasibility of Maglev Micro-EDM Using Coconut Oil Bio-Dielectric for Machining Inconel 625 Superalloy Rajesh Sahoo*, Nirmal Singh, Vivek Bajpai	Physics-Informed Data-Driven Geometric Accuracy Prediction for Hemisphere Structures Produced by Two-Photon Lithography Sixian Jia, Jieliyue Sun, Andrew Howes, Michelle Dawson, Kimani Toussaint, Chenhui Shao*
10:50 - 11:10	Break		
11:10 - 12:30	Paper Session 4-5-6		
	Additive Manufacturing 2 (Bonbright Room - 9th Floor) (Session chair: Martin Jun Co-chair: Yayue Pan)	Micro/nano Composites (James Room - 9th Floor) (Session Chair: Simon Park Co-chair: Ramesh Singh)	Process Sensing and Data Analytics 2 (Rogers Room - 9th Floor) (Session chair: Sylvie Castagne Co-chair: Ming-Chyuan Lu)
	Additively Manufactured Polymer Counter Electrodes for Dye-Sensitized Solar Cells Semih Akin*, Martin Byung-Guk Jun	Magnetically Organized Nanofillers for Multi-Functional Reinforcement of Polymers (Namiko Yamamoto, invited)	Analysis of Signal Features for Tool Wear Monitoring in Ultrasonic-Assisted Machining of Glass Xin Chen, Ming-Chyuan Lu*
	Study of the Immersed Microfluidic Spinning Toward Tissue Engineering Applications Zarya Rajestari, Joseph Kalas, Lawrence Kulinsky*		Development of an In-Situ Acoustic Emission Monitoring Method for Femtosecond Laser Micromachining of Stainless Steel Kerim Yildirim*, Yam Alcaraz, Balasubramanian Nagarajan, Tegoeh Tjahjowidodo, Sylvie Castagne
	Direct Ink Writing on a Rotating Mandrel Additive Lathe Micro-Manufacturing Yayue Pan*, Anupam Ajit Deshpande	Investigation of 3D Printed Nanocomposite Parts with Sensing Capabilities Alaa Alawy, Angela Le*, Advait Deshmukh, Simon Park	Real-Time Cutting State Monitoring for Micro-Volume Fine Milling Using MTConnect Framework Based on Sound and Convolutional Neural Network (CNN) Eunseoob Kim, Junyi Yuan, Lee Jiho, Huitaek Yun, Michael Fassnacht, Sang Won Lee, Martin Byung-Guk Jun*
	Multiphysics Analysis and Verification of Jet Flight in Electrohydrodynamic Printing for Near-Field Electrospinning Applications Sanjana Subramaniam, Jian Cao, Ehmann Kornel*	Immersed Electrohydrodynamic Direct-Writing As an Advance Fabrication Method for Fiber-Reinforced Polymer Composites Yunzhi Xu, Ange-Therese Akono, Ping Guo*	Investigating Process-Property Relationships in Microscale Selective Laser Sintering Using Electrical Resistivity Measurements Farzana Tasnim*, Joshua Grose, Obegi Georgina Dibua, Aaron Liao, CS Foong, Michael Cullinan
12:30 - 13:30	Lunch (Grand Parlor Ballroom - 2nd Floor)		
13:30 - 14:30	Plenary Session #B (Grand Parlor Ballroom - 2nd Floor) Prof. Adam Clare: Metal Additive Manufacturing: A Future?		
14:30 - 15:50	Paper Session 7-8-9		
	Additive Manufacturing 3 (Bonbright Room - 9th Floor) (Session chair: Xiangfan Chen Co-chair: Lawrence Kulinsky)	Micro Forming (James Room - 9th Floor) (Session chair: Massimiliano Annoni Co-chair: Irene Fassi)	Process Sensing and Data Analytics 3 (Rogers Room - 9th Floor) (Session chair: Ramesh Singh Co-chair: Chenhui Shao)

	3D Printing of Nd: YAG Ceramic with Optical-Gain Properties Via CLIP Luyang Liu, Xiangfan Chen*	An Experimental Study of Cold Microdrawing of Pure Mg-Based Capillary Structures for Biomedical Applications Margherita Pizzi*, Francesco De Gaetano, Marco Ferroni, Francesco Arleo, Matteo Strano, Federica Boschetti, Massimiliano Annoni	A Physics-Informed SPC Approach to Machine Health Monitoring for Two-Photon Lithography Sixian Jia, Chenhui Shao
	Direct 3D printing miniature optical components and systems Cheng Sun	Numerical Modeling, Experimental Investigation and Optimization of a Micro Hot Embossing Process PARTHA PROTIM MONDAL*, Placid M. Ferreira, Shiv G. Kapoor, PATRICK BLESS	Geometric Photometric Stereo Networks Enabling Normal and Depth Estimation for Smart Metrology Yahui Zhang, Ru Yang, Ping Guo*
	Direct Printing of Hierarchically-structured Multimaterial Films Using Acoustic Assembly Photopolymerization (Yayue Pan)	Effect of CoCrMo Die with Nanotexture Applied on Micro-Extrudability of Micro Backward Extrusion of AA6063 Tatsuya Funazuka*, Syunsuke Horiuchi, Kuniaki Dohda, Tomomi Shiratori	Investigation of Deep Temporal Neural Networks for Pulse Classification in Micro-Electrical Discharge Machining Long Ye*, Krishna Kumar Saxena, Jun Qian, Dominiek Reynaerts
		Investigating the manufacturability of pure copper micro-parts via Extrusion based Additive manufacturing: a preliminary study Lara Rebaioli*, Francesco Modica, Vito Basile, Irene Fassi	Comparative Data Analytics of Measurement Sensors for Instability Detection Efficacy in High-Speed Micromilling Suraj Kumar*, Rinku Kumar Mittal, Ramesh Singh
15:50 - 16:10	Break		
16:10 - 17:10	Round Table Discussion 1 (Grand Parlor Ballroom - 2nd Floor): Emerging Areas in Micro and Nano Manufacturing Bruno Azeredo, Xichun Luo, Yayue Pan, Rayne Zheng (Moderator: Sylvie Castagne)		
18:00 - 18:30	I2M2/IFMM/4M Executive Committee Meetings		
18:30 - 19:00	Joint Executive Committee Meeting		
Wednesday (September 20)			
7:30 - 8:15	Breakfast (Grand Parlor Ballroom - 2nd Floor)		
8:15 - 8:30	Welcome and Remarks (Grand Parlor Ballroom - 2nd Floor)		
8:30 - 9:30	Plenary Session #C (Grand Parlor Ballroom - 2nd Floor) Prof. Fujio Tsumori: Multi-scale Patterning of Ceramic or Glass Sheet by Micro-/Nano-Imprint Process		
9:30 - 10:50	Paper Session 10-11-12		
	Micro-structured Surface 1 (Bonbright Room - 9th Floor) (Session chair: Michael Cullinan Co-chair: Lara Rebaioli)	Micro Machining 1 (James Room - 9th Floor) (Session chair: Macio Bacci da Silva Co-chair: Rinku Kumar Mittal)	Mechanics and Modeling 1 (Rogers Room - 9th Floor) (Session chair: Irene Fassi Co-chair: Fu-Chuan Hsu)
	Deterministic Fabrication of Functional Superhydrophobic Microstructure by Nanosecond Laser (Xichun Luo, invited)	Micromilling of Carbon-Fiber Epoxy Composite Wayne Hung*	Development of a Multiple Mechanism Based Constitutive Model Coupled with Damage Criterion for Investigating the Deformation of Polycrystalline Steel with μm to Sub- μm Grain Size Shuai Zhu, Emmanuel Brousseau*
		A Comparative Machinability Assessment of Wrought and Additively Manufactured SS316L Via High-Speed Micromilling Debottam Bhowmik, Suraj Kumar, Ramesh Singh, Sajan Kapil, Rinku Kumar Mittal*	The DEM-FEM Simulation of Micro Particle Bombarding (MPB) for Surface Integrity of M2 High Speed Steel and 316L Stainless Steel Fu-Chuan Hsu*, Jing-Lin Kao, Li-Jie Chen, Chih-Hao LIN, Chong-Tyan Lin, TsungJen Cheng, Meng-Hsiu Tsai, Ho-Chung Fu
	Development of Joint Manufacturing and In-Line Metrology System for the Patterning of 3D Holographic Structures in Roll-To-Roll Processes Barbara Groh*, Kwon Sang Lee, Michael Cullinan, Chih-Hao Chang	Influence of Feed Rate on Micromilling of 316L Stainless Steel Manufactured by Casting and Laser Directed Energy Deposition Milla Gomes, Macio Bacci da Silva*, Wayne Hung	Fracture of Highly Entangled Polymer Networks (Junsoo Kim)
	Multi-Scale Textured Surface Designs with Passive Anti-Frosting Capabilities Christian Machado, Haiyue Huang, Ben Stern, Jiaying Huang, Kyoo-Chul Park	Freeze Micromilling of Eutectic Gallium Indium for Soft and Stretchable Circuits Toygun Cetinkaya, Burak Ozdoganlar*	Mechanics of Origami and Kirigami Made by Additive Manufacturing (Nicolas Alderete, Horacio Espinosa)
10:50 - 11:10	Break		
11:10 - 12:30	Paper Session 13-14-15		
	Micro-structured Surface 2 (Bonbright Room - 9th Floor) (Session chair: Numpon Mahayotsanun Co-chair: Mariangela Quarto)	Micro Machining 2 (James Room - 9th Floor) (Session chair: Tatsuhiko Aizawa Co-chair: Takashi Matsumura)	Mechanics and Modeling 2 (Rogers Room - 9th Floor) (Session chair: Shih-Ming Wang Co-chair: Ping Guo)
	Efficiency Enhancement of Microstructuring on Sputtered Glass and Polymer Substrates Using Maskless Lithography and Lift-Off Dalina Dler Boya, Rebecca Vornweg*, Florian Janek, Thomas Guenther, Andre Zimmermann	Direct Observations of Tribological Behavior in Cutting with Micro Textured Cutting Tool (Tatsuya Sugihara, invited)	The Method to Pre-Compensate Tool Path in Single Point Diamond Turning BoRu Lin, Yao-Yang Tsai*, SHIH-MING WANG

	Fabrication of Microstructured Surface Related to Droplet Shape and Water Repellency Akira Kakuta*		A Penetration Efficiency Model for the Optimization of Conical Microneedles Geometry Leonardo Piccolo, Kristal Aubrey Bornillo*, Sara Micheli, Marco Sorgato, Mauro Ricotta, Elisa Cimetta, Giovanni Lucchetta
	Effect of Roller Surface Patterns on Shear-Compression Performance of Natural Rubber Sheet Sedthawatt Sucharitpwatskul, Numpon Mahayotsanun*, Satit Siriruk, Thipjak Na-Lampang	Cutting Force in Milling of Glass-Resin Laminated Material Takashi Matsumura*, Ken Asano, Ryota Uchiyama	Microscale imaging of heat flow near grain boundaries in polysilicon materials (Oluwaseyi Balogun)
	Surface Quality Implementation Via Micro-EDM for Metal-MEX Samples Mariangela Quarto*, Gianluca D'Urso	Effect of Tool Cutting Edge on Process Affected Area in Punching of Non-Oriented Electrical Steel Sheets Tomomi Shiratori*, Yu Okai, Shunsuke Ohmura, Yohei Suzuki, Tatsuhiko Aizawa	Lower Critical Depth of Scratch at Wafer Edges Pramod Kumar Mahato, Sathyan Subbiah*
12:30 - 13:30	Lunch (Grand Parlor Ballroom - 2nd Floor)		
13:30 - 14:30	Plenary Session #D (Grand Parlor Ballroom - 2nd Floor) Prof. Elisabetta Ceretti: Modeling of Micro Milling Operations: Forces, Tool Run-out Evaluation		
14:30 - 15:50	Paper Session 16-17-18		
	Micro-structured Surface 3 (Bonbright Room - 9th Floor) (Session chair: Stefan Dimov Co-chair: Marco Sorgato)	Micro Machining 3 (James Room - 9th Floor) (Session chair: Chunhui Chung Co-chair: Pavel Penchev)	Machine and Process Design 1 (Rogers Room - 9th Floor) (Session chair: Gandjar Kiswanto Co-chair: Tatsuya Funazuka)
	Harnessing Hydrodynamic Cavitation for Surface Modification and Strengthening Hao Pang, Swadheen Thakar, Gracious Ngaile*	Optimisation of Process Parameter for Fabrication of Micro-Hole in SS304 Using Fiber Laser KALIPADA MAITY*, Ruchir Kumar Pradhan	Development of Single Block Transducer with Forming Force Measurement System on Ultrasonic Vibration Assisted Microforming Gandjar Kiswanto*, Sugeng Supriadi, Siska Titik Dwiyati, Edward Joshua Patrianus Mendrofa, Raditya Aryaputra Adityawarman, Hans Thiery Tjong, Wildan Abdurrohman
	Laser Surface Texturing in Single-Point Incremental Sheet Forming Weining Li*, Tahseen Jwad, Stefan Dimov, Khamis Essa	High Quality Laser Drilling of Micro-Holes on Nickel Super Alloy Hoang Le, Vahid Nasrollahi*, Themistoklis Karkantonis, Pavel Penchev, Sundar Marimuthu, Mickey Crozier, Stefan Dimov	Development of a Microsensor Device for Surgical Robots to Measure the Force to Detach Tumors Keigo Sakakibara, Tohru Sasaki*, Bilal Ahmed Mir, Atsushi Shibata, Riku Moriya, Akane Muranaka, Kenji Terabayashi, Akihiro Kiri, Kuniaki Dohda
	Design of a Process Chain for the Manufacturing of Nano-Patterned Bactericidal Plastic Parts Marco Sorgato*, Paola Brun, Enrico Savio, Giovanni Lucchetta	Experimental Study of an Atomization-Based Cutting Fluid Delivery System for Deep Hole Micro-Drilling Processes Chi-Ting Lee, Shiv G. Kapoor*	Developing an Integrated Micro-Milling Machine Tool for Smart Manufacturing Darren Wei Wen Low, Vinodth Paniselvam, Geok Soon Hong, A. Senthil Kumar*
	Acicular Microtextured Sheet Device for Heat Radiation with Controlled Unit-Cell Size and Regularity Tatsuhiko Aizawa*, Hiroki Nakata, Takeshi Nasu, Yutaka Mitohka	Effect of Abrasive Shape and Size on Scribing of Single Crystal Silicon with Application to Diamond Wire Sawing A. Kumar, R. Ashley, A.M. Kovalechenko, E.O. Paschenko, and S. N. Melkote	Tool Wear Monitoring System with Acoustic-Based Sensor Fusion for Microdrilling Po-Ting Ho, Hung-Yue Chang*
16:30	Bus leaves for downtown Chicago		
18:00 - 21:30	Boat Banquet		
Thursday (September 21)			
7:30 - 8:15	Breakfast (Grand Parlor Ballroom - 2nd Floor)		
8:15 - 8:30	Welcome and Remarks (Grand Parlor Ballroom - 2nd Floor)		
8:30 - 9:30	Plenary Session #E (Grand Parlor Ballroom - 2nd Floor) Dr. Khershed Cooper: Advanced Manufacturing and Related Research at NSF		
9:30 - 10:50	Paper Session 19-20-21		
	Surface Treatment (Bonbright Room - 9th Floor) (Session chair: Fu-Chuan Hsu Co-chair: Co-chair: Chunhui Chung)	Tooling (James Room - 9th Floor) (Session chair: Hyung-Wook Park Co-chair: Marcio Bacci da Silva)	Machine and Process Design 2 (Rogers Room - 9th Floor) (Session chair: Josko Valentincic Co-chair: Tohru Sasaki)
	Large-Scale Surface Micro-structuring by Ergodic Control a Mobile Robot (Malachi Landis)	Ultrafast Dressing of Micro Grinding Wheels Internally Grinding Diesel Engine Fuel Pump Cam Rings Mark James Jackson*, Richard Read, Rosemar da Silva, Macio Bacci da Silva, Alisson Machado	A Preliminary Study on Soft Tooling Process Chain for Injection Moulding of a Micromixer Izidor Sabotin, Josko Valentincic*
	Evaluation of Micro Shot Peening on the Surface Integrity of SKH59 High Speed Steel and S790 Powder Metallurgical HSS by Taguchi Method Li-Jie Chen, Fu-Chuan Hsu*, Chih-Hao LIN, Wei-Yu Chen, Tsung-Jen Cheng, Chong-Tyan Lin, Yun-Han Chang, Hwa-Teng Lee	Experimental Studies on Carbide Coated Tools for Micro Milling of 316 L Stainless Steel Produce by Selective Laser Melting Leticia C Silva, Macio Bacci da Silva*, Alisson Machado, Mark James Jackson, Wayne Hung	Fine Sinter-Forging of Miniature Super-Engineering Plastic Gears for Carbon Fiber Reinforcement Design Tatsuhiko Aizawa*, Tomohiro Miyata, Kiyoyuki Endo

	Surface Treatment of 304 Stainless Steel by Dielectric Barrier Discharge (DBD) Argon Plasma Jet Shayan Bayki, Soham Sanjeev Mujumdar*	Localized Wear Characterization of Ultra-Hard Deposits in Laser Directed Energy Deposition-Based Restoration Sachin Alya, Wazeem Nlshad*, Ramesh Singh	A Study on the Effect of Process Parameters on Feature Resolution in 3D Inkjet Printing Karin J. Chen*, Ahmed Elkaseer, Steffen Scholz
	Coating Tool Assessment in Micromilling of Directed Energy Deposited H13 Tool Steel Wayne Hung*	Analysis of the Tool Wear for a Large Pulsed Electron Beam (LPEB) Irradiated Cutting Tools in the Turning Process of Ti-6Al-4V Sangmin Yang, Hyung Wook Park*, Do Young Kim	Direct Structural Color Image Printing in Micro-scale of Metal-insulator-metal Structure Yingjun Quan, Sung-Hoon Ahn
10:50 - 11:10	Break		
11:10 - 12:10	Round Table Discussion 2 (Grand Parlor Ballroom - 2nd Floor): Future of Micro Nano Manufacturing: Challenges and Opportunities Elisabetta Ceretti, Khershed Cooper, John Rogers, Shreyes Melkote (Moderator: Stefan Dimov)		
12:10	Boxed Lunch		
13:00 - 15:00	Optional: Campus and Lab Tour		