

The 7th International Conference on  
Active Materials and Soft Mechatronics



# AMSM 2024

October 27 - 30, 2024 | Songdo ConvensiA, Incheon, Korea

Abstract e-Book

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- 0626** Triboreactive Touch Point Sensors  
Minjun Song, Younghoon Lee  
Gachon University, Korea
- 0648** Ionic Spiderwebs for Multifunctions Including Adhesion, Sensing, and Actuating Based on Electrostatics  
Jiwon Jang, Younghoon Lee  
Gachon University, Korea

### 3-4. Robotics and AI in Medicine

18:30-20:00, Monday, October 28

Grand Ballroom C

- CHAIR** Seung-Kyun Kang (Seoul National University, Korea)
- 0576** Research on New Antidote Candidates for Novichok Agent  
Seongchan Lee, Sojeong Bae, Doo-Hee Lee  
CBRN Defense Research Institute, Korea

### 4-1. Extreme Bio/Nanomaterials and Applications

18:30-20:00, Monday, October 28

Grand Ballroom C

- CHAIR** Jihyeon Yeom (Korea Advanced Institute of Science and Technology, Korea)
- 0388** Enhanced Performance of Multilayered Foam Coatings: Sequential Deposition of Organic-Inorganic Layers for Flame Retardancy and Antimicrobial Properties  
Alemtehay Tesfay Reda, Yong Tae Park  
Myongji University, Korea
- 0459** The Effect of Cellulose Nanofibers (CNFs) on the Mechanical Properties of Liquid Silicon Infiltration (LSI)-derived C/SiC  
Sangwon Lee<sup>1</sup>, Shiwoo Lee<sup>1</sup>, Soo-Hyun Kim<sup>2</sup>, Sang-Eui Lee<sup>1</sup>  
<sup>1</sup>Inha University, Korea, <sup>2</sup>Korea Institute of Energy Research, Korea
- 0931** Development of Photo-crosslinked Anti-Adhesion Hydrogel for Peripheral Nerve Regeneration  
Ji-Woo Park, Jun-Kyu Kang, So-Jung Gwak  
Wonkwang University, Korea
- 0935** Development of COPPER-doped Graphitic Nanoplatelets for Antimicrobial  
Jun-Kyu Kang, Juyeon Lee, Seojeong Yoon, In-Yup Jeon, So-Jung Gwak  
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- 0988** The Correlation between Electrical Properties and Quantitative Defect Analysis as a Function of Electrode Junction Type of Amorphous Indium-Tin-Zinc Oxide Thin Film Transistor  
Dong Yeob Shin<sup>1</sup>, Jinyoung Go<sup>1</sup>, Kwangsik Jeong<sup>2</sup>, Kwun-Bum Chung<sup>1</sup>  
<sup>1</sup>Dongguk University, Korea, <sup>2</sup>Yonsei University, Korea

- 1127** Development of an Elastic Artificial Esophagus Structure Using a 3D Dragging Printing Technique  
Jae-Seok Kim<sup>1</sup>, Hun-Jin Jeong<sup>1,2</sup>, Hyoryung Nam<sup>3,4</sup>, Jinah Jang<sup>4</sup>, Seung-Jae Lee<sup>1</sup>  
<sup>1</sup>Wonkwang University, Korea, <sup>2</sup>Columbia University, USA, <sup>3</sup>Daegu Catholic University, Korea, <sup>4</sup>Pohang University of Science and Technology, Korea

### 4-2. Active/Extreme Aerospace Materials and Devices

18:30-20:00, Monday, October 28

Grand Ballroom C

- CHAIR** Jihyeon Yeom (Korea Advanced Institute of Science and Technology, Korea)
- 0420** UV-irradiation Effect on Atomic Oxygen Resistance of Polymer Matrix in Low Earth Orbit Environment  
Jiwon Jung<sup>1</sup>, Jongkwung An<sup>1</sup>, Seunghwan Kwon<sup>1</sup>, Eunhye Lee<sup>2</sup>, Gunjin Yun<sup>1</sup>  
<sup>1</sup>Seoul National University, Korea, <sup>2</sup>Agency for Defense Development, Korea
- 1140** Prediction of Mechanical Properties of 3D Printed Composite Materials Using Theoretical Equations  
Sang-Hun Kang<sup>1</sup>, Hyoung-Seock Seo<sup>2</sup>  
<sup>1</sup>University of Ulsan, Korea, <sup>2</sup>Chungnam National University, Korea

### 4-3. Exploring the Uncharted Frontiers: Technology for Extreme Environments

18:30-20:00, Monday, October 28

Grand Ballroom C

- CHAIR** Jihyeon Yeom (Korea Advanced Institute of Science and Technology, Korea)
- 0715** Developing Drill System to Extract Lunar Regolith  
Hee-Chan Jang, Hyeong-Seon Choi, Young-Jun Lee, Joo-Hyung Kim  
Inha University, Korea
- 0834** A Programmable Soft Acoustic Metamaterial Inside Meta-Foams for Smart Homes  
Daniel Saatchi<sup>1</sup>, Saewoong Oh<sup>1</sup>, Hyunjoon Yoo<sup>1</sup>, Mannan Khan<sup>1</sup>, Ji-Seok Kim<sup>1</sup>, Bernd Wicklein<sup>2</sup>, Manmatha Mahato<sup>1</sup>, Myung-Joon Lee<sup>1</sup>, Tushar Prashant Pandit<sup>1</sup>, Il-Kwon Oh<sup>1</sup>  
<sup>1</sup>Korea Advanced Institute of Science and Technology, Korea, <sup>2</sup>Materials Science Institute of Madrid, Spanish National Research Council, Spain
- 0843** Suggestions of the Environmental Qualification Method of Non-metallic Parts in Mechanical Equipment by Comparing IEEE Std 323 and ASME QME-1 Appendix QR-B Standards  
Kyungheum Park<sup>1</sup>, Sungyoon Jung<sup>1</sup>, Sungyoon Cho<sup>2</sup>  
Korea Hydro and Nuclear Power Co., Ltd., Korea