

OS21: Smart Fluids & Soft Matters and Their Advanced Applications

November 12, 2025

EX-3A

- OS21-1
13:30-14:00 **Dual-modulus 3D Printing Technology for Magnetorheological Metamaterials**
(Invited)
Xinglong Gong (University of Science and Technology of China, China)
- OS21-2
14:00-14:20 **Bidirectionally Adaptive Band Gap of Magnetorheological Metamaterials**
Hongyao Wang, Xinyu Lian (University of Science and Technology of China, China), Huaxia Deng (University of Science and Technology of China / Chinese Academy of Sciences, China), Xinglong Gong (University of Science and Technology of China, China)
- OS21-3
14:20-14:40 **Design and Vibration Control Application of Magnetorheological Poly-Stable Metastructure with Tunable Potential Barriers**
Xinyu Lian, Huaxia Deng, Xinglong Gong (University of Science and Technology of China, China)
- OS21-4
14:40-15:00 **Direct Ink Writing of Gradient Shear-Stiffening Elastomer for Enhanced Toughness and Impact Resistance**
Liping Gong (University of Wollongong, Australia), Chunyu Zhao (University of Science and Technology of China, China), Hongda Lu, Qingtian Zhang, Zexin Chen (University of Wollongong, Australia), Junjie Yang, Jinyu Yang (University of Science and Technology of China, China), Shuaishuai Sun, Haiping Du, Weihua Li (University of Wollongong, Australia)
- 15:00-15:15 BREAK
- OS21-5
15:15-15:45 **Heat to Power Energy Conversion using Thermomechanical Polymers: an Experimental Proof of Concept** *(Invited)*
Gael Sebald, Giulia Lombardi (ELyTMaX IRL 3757, CNRS, Univ. Lyon, INSA Lyon, Centrale Lyon, Université Claude Bernard Lyon 1, Tohoku University, Japan), Gildas Coativy (INSA Lyon, France), Atsuki Komiyama (ELyTMaX IRL 3757, CNRS, Univ. Lyon, INSA Lyon, Centrale Lyon, Université Claude Bernard Lyon 1, Tohoku University / Tohoku University, Japan)
- OS21-6
15:45-16:05 **Simulation and Analysis of Mechanical Properties of Magnetic Fluids Based on Spherical Chain Particle Model**
Bing Liu, Kang Wang, Huaxia Deng, Xinglong Gong (University of Science and Technology of China, China)
- OS21-7
16:05-16:25 **An Omni-Directional Magnetorheological Semi-active Inerter for Vibration Control**
Kim Thach Tran, Lei Deng, Weihua Li (University of Wollongong, Australia)
- OS21-8
16:25-16:45 **An Innovative Rotary Magnetorheological Inerter Featuring Negative Stiffness and Variable Damping**
Wenlang Xie, Lei Deng, Weihua Li (University of Wollongong, Australia)

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- OS21-9
9:20-9:50 **Controllable Liquid Metal Microparticle Production with Filter-Sieve Generators**
(Invited)
Qingtian Zhang, Hongda Lu, Weihua Li (University of Wollongong, Australia)
- OS21-10
9:50-10:10 **Optimization Characterization Method for Piecewise Parametric Modeling of Magnetorheological Dampers**
Jiahao Li, Bing Liu, Xinyu Lian, Shuaishuai Sun, Xinglong Gong (University of Science and Technology of China, China)
- OS21-11
10:10-10:30 **Investigation of Wheel-Rail Wear Reduction by Using MRF Rubber Joints with Bidirectional Adjustable Stiffness**
Ning Gong (University of Science and Technology of China, China), Jian Yang (Anhui University, China), Shuaishuai Sun (University of Science and Technology of China, China)
- 10:30-10:45 BREAK
- OS21-12
10:45-11:15 **Research and Application of Negative Stiffness Characteristics in Active Vehicle Suspension** *(Invited)*
Liyang Pan, Lan Jiang, Tao Hu, Jiahao Li, Ning Gong, Xinglong Gong (University of Science and Technology of China, China), Masami Nakano (SmartTECH Lab. Inc., Japan), Shuaishuai Sun (University of Science and Technology of China, China)
- OS21-13
11:15-11:35 **Hybrid Torque Control Strategy with Gaussian Process Feedforward for a Novel MRF Dual-Clutch of an Electric Vehicle Transmission**
Huan Zhang, Lei Deng, Weihua Li, Haiping Du (University of Wollongong, Australia)