OS7: Smart Fluids & Soft Matters and Their Advanced Applications

November 10, 2022
CON-2

OS7-1
9:00-9:30
Magnetic Actuators Based on 3D Printed MR Elastomer *(Invited)*
Xinglong Gong (University of Science and Technology of China, China)

OS7-2
9:30-9:50
Flexible Anisotropic Magneto-Sensitive Elastomer Films for Bionic Actuator
Jingyi Zhang, Yu Wang, Shuaishuai Sun, Bochao Wang, Xinglong Gong (University of Science and Technology of China, China)

OS7-3
9:50-10:10
An Acoustic Metamaterial using Magnetorheological Elastomer for Vibration Isolation
Zexin Chen (University of Wollongong, Australia), Shuaishuai Sun (University of Science and Technology of China, China), Haiping Du, Weihua Li (University of Wollongong, Australia)

OS7-4
10:10-10:30
A Hybrid Isolation System Using MRE and Inerter Technology for Vibration Control
Shida Jin, Haiping Du, Weihua Li (University of Wollongong, Australia), Shuaishuai Sun (University of Science and Technology of China, China)

OS7-5
10:40-11:10
New Liquid-Metal Magnetorheological Elastomer Composites *(Invited)*
Qingtian Zhang, Weihua Li (University of Wollongong, Australia)

OS7-6
11:10-11:30
Stretchable and Recyclable Liquid Metal Droplets Embedded Elastomer Composite with High Mechanically Sensitive Conductivity
Xiaokang He, Jianpeng Wu, Shouhu Xuan, Shuaishuai Sun, Xinglong Gong (University of Science and Technology of China, China)

OS7-7
11:30-11:50
Magnetic Flexible Sensor with Tension and Bending Discriminating Detection
Quan Shu, Huaxia Deng, Shouhu Xuan, Xinglong Gong (University of Science and Technology of China, China)

OS7-8
11:50-12:10
Performance of Shear Thickening Fluids at Low Temperatures
Tongfei Tian (University of the Sunshine Coast, Australia), Vladimir Sokolovski, Weihua Li (University of Wollongong, Australia), Jie Ding (Defence Science and Technology Group, Australia)

OS7-9
13:10-13:40
Are Charge Carriers Responsible for the Electroactivity of Polyurethane? *(Invited)*
Gildas Coativy (Université de Lyon, France), Kaori Yuse (Université de Lyon / Lyon Center, IFS-Tohoku University, France), Gildas Diguet (Tohoku University, Japan), Laurence Seveyrat, Veronique Perrin, Florent Dalmas, Sebastien Livi, Joel Courbon (Université de Lyon, France), Hidemasa Takana (Lyon Center, IFS-Tohoku University / Tohoku University, Japan), Jean Yves Cavaillé (Tohoku University, Japan / Lyon Center, IFS -Tohoku University, France)

OS7-10 13:40-14:10 **Grease Lubrication To Improve Tribological Properties Of Steel / Polymer Contacts** *(Invited)*
Vincent Fridrici (Ecole Centrale de Lyon, France), Takeshi Kunishima (JTEKT Corporation, Japan), Philippe Kapsa (Ecole Centrale de Lyon, France)

OS7-11 14:10-14:40 **Study on Suction Cups Utilizing Magneto-Rheological Fluids** *(Invited)*
Hideyuki Tsukagoshi, Kengo Hama (Tokyo Institute of Technology, Japan), Masami Nakano (Tohoku University, Japan)

OS7-12 14:50-15:20 **MR Effect Enhancement of MR Fluid Porous Composites** *(Invited)*
Masami Nakano, Yutaka Takano (Tohoku University, Japan)

OS7-13 15:20-15:40 **Model Based Characterization of Novel Dry MR Fluid Rotary Damper with Variable Stiffness for Vibration Control of A Building Structure Mode**
Jian Yang (Anhui University, China / Tohoku University, Japan), Shuaishuai Sun (University of Science and Technology of China, China / Tohoku University, Japan), Osamu Taguchi, Masami Nakano (Tohoku University, Japan)

OS7-14 15:40-16:00 **Development of a New MR Vibration Isolation System with Highly Stable and Wide Zero Stiffness Range Characteristics**
Shuaishuai Sun (University of Science and Technology of China, China), Jian Yang (Anhui University, China), Masami Nakano (Tohoku University, Japan), Weihua Li (University of Wollongong, Australia)

OS7-15 16:00-16:20 **Design of a Stiffness-Tunable and Energy-Efficient Hand Exoskeleton for Enhancement of Grip Endurance and Strength**
Xianlong Mai, Shuaishuai Sun (University of Science and Technology of China, China), Jian Yang (Anhui University, China)

OS7-16 16:30-17:00 **Elastocaloric Rubber Based System for New Refrigeration Solutions** *(Invited)*
Gael Sebald (ELyTMaX IRL 3757, CNRS, Univ. Lyon, INSA Lyon, Centrale Lyon, Université Claude Bernard Lyon 1, Tohoku University, Japan), Giulia Lombardi, Atsuki Komiya (ELyTMaX IRL 3757, CNRS, Univ. Lyon, INSA Lyon, Centrale Lyon, Université Claude Bernard Lyon 1, Tohoku University / Tohoku University, Japan), Gildas Coativy, Jacques Jay, Laurent Lebrun (INSA-Lyon, France)

OS7-17 17:00-17:20 **Hill Climbing Characteristics of Self-propelling Drops on Heated Ratchets with Hybrid Wettability Surfaces**
Tomomichi Shirahama, Takahiro Okabe, Minori Shirota (Hirosaki University, Japan)