

OS7: Smart Fluids & Soft Matters and Their Advanced Applications

October 27, 2021

ROOM4

- OS7-1 **Disassembling Blood Cots and Improving Blood Oxygenation With Magnetorheology For Covid-19 Patients** (*Invited*)
9:20-9:50 Rongjia Tao (Temple University, USA)
- OS7-2 **A New Type of Artificial Muscle with Fast Response Characteristics**
9:50-10:10 Shuaishuai Sun (University of Science and Technology of China, China), Jian Yang (Anhui University, China), Masami Nakano (Tohoku University, Japan), Ruizhe Chang (University of Science and Technology of China, China), Weihua Li (University of Wollongong, Australia)
- OS7-3 **3D Printing-assistant Method for Magneto-active Pulse Pump**
10:10-10:30 Xufeng Cao, Xinglong Gong (University of Science and Technology of China, China)
- OS7-4 **Motion of a Soft Dumbbell Microswimmer in Oscillating Shear Flow and Random Linear Flow**
10:30-10:50 Akira Doi, Toshihiro Omori, Takuji Ishikawa (Tohoku University, Japan)
- OS7-5 **Sensing Capabilities of Hybrid Liquid-Metal Magnetorheological Composites** (*Invited*)
11:10-11:40 Qingtian Zhang, Guolin Yun (University of Wollongong, Australia), Shi-Yang Tang (University of Birmingham, UK), Weihua Li (University of Wollongong, Australia)
- OS7-6 **Optimization of 3D Printing Flexible Ferromagnetic Composites With the Magnetophoresis Assistant**
11:40-12:00 Ziyin Xiang (Chinese Academy of Sciences, China), Minh Quyen Le (INSA-Lyon, France), Benjamin Ducharne (INSA-Lyon, France / ELYTMAX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Van-Cuong Nguyen (INSA-Lyon, France)
- OS7-7 **A Flexible Viscoelastic Coupling Cable with Self-Adapted Electrical Properties and AntiImpact Performance toward Shapeable Electronic Devices**
12:00-12:20 Fang Yuan, Xinglong Gong (University of Science and Technology of China, China)

- OS7-8 **MagnetoRheological Foams for Energy Harvesting**
 12:20-12:40 Gildas Diguët (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / Tohoku University, Japan), Gael Sebald (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Masami Nakano (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / Tohoku University, Japan), Mickael Lallart (INSA-Lyon, France), Jean Yves Cavaille (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / Lyon Center, IFS-Tohoku University, Université de Lyon, France)
- OS7-9 **Smart Shear Stiffening Material: Rate-dependent Mechanical Properties, Mechanism and Practical Applications** (*Invited*)
 13:30-14:00 Xinglong Gong (University of Science and Technology of China / Zhengzhou University, China)
- OS7-10 **Synthesis and Characterisation of Magnetorheological Shear Thickening Fluids**
 14:00-14:20 Tongfei Tian (University of the Sunshine Coast, Australia), Vladimir Sokolovski, Weihua Li (University of Wollongong, Australia), Jie Ding (Defence Science and Technology Group, Australia)
- OS7-11 **Conductive Shear Thickening gel/Kevlar Wearable Fabrics: A Flexible Body Armor with Mechano-Electric Coupling Ballistic Performance**
 14:20-14:40 Chunyu Zhao, Shouhu Xuan, Xinglong Gong (University of Science and Technology of China, China)
- OS7-12 **Molecular Simulations of Neat and Aqueous Polyelectrolytes Having Low Molecular Weights**
 14:40-15:00 Patrick A. Bonnaud (Research Organization for Information Science and Technology / University of Tsukuba, Japan), Hiroshi Ushiyama, Syogo Tejima (Research Organization for Information Science and Technology, Japan), Jun-Ichi Fujita (University of Tsukuba, Japan)
- OS7-13 **Development of Multi-disk Type Automotive Brake using Dry MR Fluid of TiO₂ Coated CI Particles** (*Invited*)
 15:20-15:50 Masami Nakano, Osamu Taguchi, Chuichiro Sato (Tohoku University, Japan), Shuaishuai Sun (University of Science and Technology of China, China / Tohoku University, Japan)
- OS7-14 **Development and Characterization of Dry MR Fluid Rotary Damper with Variable Stiffness**
 15:50-16:10 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)
- OS7-15 **Vibration Control of a Seat Suspension System using Variable Damping and Stiffness Magnetorheological Dampers**
 16:10-16:30 Lei Deng, Haiping Du (University of Wollongong, Australia), Shuaishuai Sun (University of Science and Technology of China, China), Weihua Li (University of Wollongong, Australia)

- OS7-16 **The Influence of Squeeze on the Electrical Conductive and Mechanical Properties of Magnetorheological Fluid**
16:30-16:50 Xiaohui Ruan, Jun Zhao, Huiting Bian (Zhengzhou University, China), Xinglong Gong (Zhengzhou University / University of Science and Technology of China, China)
- OS7-17 **Elastocaloric Cooling Using Natural Rubber: Material Properties, Heat Transfer and Heat Losses Effects on Proof of Concept Performances**
17:10-17:40 *(Invited)*
Gael Sebald (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Giulia Lombardi, Lilian Maury (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / Tohoku University, Japan), Jacques Jay (INSA-Lyon, France), Atsuki Komiya (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / Tohoku University, Japan), Xuen Sze Way (Tohoku University, Japan), Gildas Coativy, Hiba Haissoune, Laurent Lebrun (INSA-Lyon, France)
- OS7-18 **Microscopic Mechanical Behavior of Physically Cross-linked Flexible Elastomers**
17:40-18:00 Ruiqi Zhao, Yu Wang, Sheng Wang, Chunyu Zhao, Xinglong Gong (University of Science and Technology of China, China)