

# GRK 2516 Soft Matter Seminar

Nov. 11, 2021 at 10:15 a.m.  
None

Research seminar of the DFG Research Training Group GRK 2516 (<https://grk2516.uni-mainz.de>).

Syuji Fujii  
Osaka Institute of Technology, Japan

## **Liquid marble: From Fundamental to Application**

Over the past decade or so, there has been increasing interest in the adsorption of colloidal particles at the air/water, oil/water and solid/water interfaces. This emerging field has led to new concepts and materials in soft dispersed systems such as "colloidosomes", "armored bubbles", "dry water" and "liquid marbles", with potential applications being suggested in microencapsulation and biotechnology. The soft dispersed systems stabilized with inorganic particles (e.g. silica, alumina and graphene) have been mainly studied for a long time, and recently those stabilized with organic particles, including synthetic polymer particles, start to gain interest.

Here, I will give a talk on our research related to liquid marbles (dry liquids) that are stabilized by polymer particles. The polymer particles have been demonstrated to be particularly attractive as the stabilizer for the soft dispersed systems, because they can be readily designed with specific surface chemistries using various functional monomers and by post surface modifications. Successful particle synthesis would inspire the construction of well-defined and functionalized particle-stabilized liquid marble systems. In this talk, liquid marbles (water-in-air dispersed system) stabilized solely with polymer particles will be presented in detail. The stabilities, microstructures and movements of these dispersed systems can be controlled by external stimuli: liquid marbles can be disrupted and/or move on demand.

About the speaker: Prof. Syuji Fujii graduated from Kobe University (Ph.D. 2003). His postdoctoral studies were carried out at University of Sussex (UK) from 2003 to 2004 and at University of Sheffield (UK) from 2004 to 2006. He joined Osaka Institute of Technology as a Lecturer in 2006 and was promoted to Associate Professor in 2013 and Professor in 2017. His major research interests focus on synthetic polymer chemistry, design and characterization

of polymer-based particles, biomimetics, and particle-stabilized soft dispersed systems including emulsions, foams, liquid marbles and dry liquids.

Contact:  
[cosarins@uni-mainz.de](mailto:cosarins@uni-mainz.de)

