

Lecture Series on Surface Forces 33

Organized by New Industry Creation Hatchery Center (NICHe), and
Institute of Multidisciplinary Research for Advanced Materials (IMRAM),
Tohoku University

Date: June 27th, 2018 15:00-16:00

Place: Material Solution Center (MaSC),
Seminar room (1st floor), Tohoku University

Forces in the Presence of Highly Charged Coions: From Multivalent Coions to Polyelectrolytes

Dr. Gregor Trefalt

(University of Geneva, Switzerland)



Abstract: Forces between charged surfaces in the presence of multivalent counterions were extensively studied, however much less attention was focused on systems with multivalent coions. We study the interactions between negatively charged particles with the colloidal probe technique which is based on atomic force microscope. In my talk I will present our recent work, where we explore the influence of multivalent coions on the force profiles. These ions have the same sign of the charge as the surface and they induce non-exponential double-layer force profiles. When the multivalent coions are replaced with like charged polyelectrolytes the effect on double-layer forces is even more dramatic. At higher concentrations of polyelectrolytes and larger distances oscillatory structural forces are observed. In these systems the double-layer forces and structural forces are connected through the phase shift of the structural force.

連絡先：東北大学未来科学技術共同研究センター
栗原和枝

Tel: 022-217-6153

Email: kurihara@tagen.tohoku.ac.jp