

第198回化学コロキウムのお知らせ

日時：平成24年5月21日(月) 14:00~16:00

場所：首都大学東京 11号館202室

演者：Michael Gradzielski 教授

(Institut für Chemie, Technische Universität Berlin, Germany)

演題：Interactions between Surface Modified Silica Nanoparticles and Phospholipid Vesicles and Cells

Abstract: The interaction of phospholipid vesicles with hard nanoparticles is of great relevance to the field of nanotechnology, for instance concerning its impact on health and safety matters but also with respect to using such systems for drug delivery. Theoretical studies have shown that the interaction between nanoparticles and vesicles may result in many different scenarios such as surface adhesion, encapsulation of the nanoparticle in the vesicle or within the phospholipid membrane. In that context we studied the interactions between silica nanoparticles (radius: 15-100 nm) and extruded phospholipid vesicles (DMPC or DOPC) of about 50-150 nm radius by means of phase stability studies, electric conductivity, SLS, DLS, ζ -potential, ITC, SANS, SAXS, and cryo-transmission electron microscopy. In addition, the silica particles were functionalized, for instance by means of surface amination, in order to allow for systematic modulation of their interaction with the membranes.

Gradzielski 教授は中性子・X 線小角散乱を用いた界面活性剤集合体の構造および転移過程に関する先駆的な研究で著名な方で、5月13日~18日に仙台で開催される IACIS2012 (<http://iacis2012.org/>) の Keynote Speaker として来日されます。

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