

9:20-10:00

Soft Interfaces on the Nanometer Scale - how neutrons contribute to a deeper understanding on the supramolecular level

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Current problems in soft matter and biomaterial science often require insight on the nanometer scale. In this contribution we will show how neutron reflectivity contributes to a deeper understanding of systems that are also of biological interest. Topics of increasing complexity and biological relevance will be discussed: Chapter one will focus on the properties of ultrathin polyelectrolyte coatings at a solid-liquid interface [1]. Chapter two will show how these polymer coatings can be utilized as soft cushions for lipid membranes that form in situ by vesicle fusion from the liquid phase (under physiological conditions), or as switchable binding sites for proteins that penetrate from the aqueous solution [2]. Number three will demonstrate the successful in situ assembly of myelin model membranes at a polymer-liquid interface, while number four will focus on the molecular organization within such membranes [3] and their respective degradation upon reduced humidity.

[1] R. Steitz, V. Leiner, R. Siebrecht and R. v. Klitzing, *Colloids and Surfaces A*. 163, 63-70 (2000).

[2] C. Czeslik, G. Jackler, R. Steitz and H.-H. von Grünberg, *J. Phys. Chem. B* 108, 13395 (2004).

[3] H. Haas, M. Torielli, R. Steitz, P. Cavatorta, R. Sorbi, P. Riccio, A. Gliozzi, *Thin Solid Films*, 329, 627 (1998).