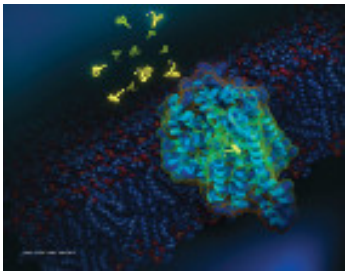

Contribution ID : **19** Type : **not specified**

Keynote 9 - Neutron spin echo spectroscopy as a sensitive tool to study membrane elasticity in microemulsions and lipid membranes

Thursday, 13 September 2018 15:20 (40)

The high energy resolution of Neutron Spin Echo (NSE) Spectroscopy is perfectly suited for studying thermally driven membrane fluctuations in soft matter systems. Measuring membrane fluctuations allows determining the membrane bare bending rigidity of a membrane patch and is complementary to phase diagram measurements and SANS [1]. Adding co-surfactants such as diblock copolymers or homopolymers to a microemulsion modifies the bending rigidity and has been followed with NSE. A recent topic in membrane dynamics was the influence of a rigid interface to a surfactant or phospholipid membrane. Microscopic flat interfaces provided by clay particles [3] as well as macroscopic interfaces were investigated [4]. The latter has been studied in grazing incidence geometry, a new development in NSE Spectroscopy where in analogy to GISANS only the part of the sample at a solid/liquid interface is illuminated with an evanescent neutron wave. Despite the low intensity, a carefully designed low background sample cell together with new neutron optical components such as neutron resonator structures [5] allowed to gather interface specific information and to observe modifications of the undulation dispersion relations in soft membranes such as microemulsions [4] and also phospholipid membranes [6,7].

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Session Classification : Model Biomembranes: Late afternoon session