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Laboratory: Frank Laboratory of Neutron Physics (FLNP), YuMo group.

Topic: Small Angle Scattering Method applied to biological macromolecules and colloids.

Project is addressed to 1- 3 students

1. Small Angle Neutron Scattering (SANS) is a relevant technique for the characterization of structures in the nanoscale size range. This covers structures from the near Angstrom sizes to the near micrometer sizes. For that reason this method is widely used to elucidate the structure of different biological macromolecules in solutions like: proteins, DNA-polymer complexes, lipid phase transitions and surfactants.

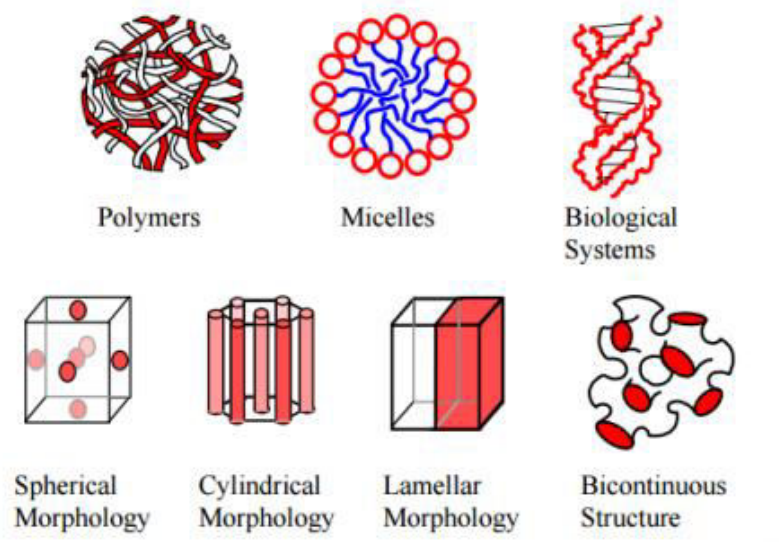

Fig. 1. Different samples investigated by SANS method

To study the structure of the colloidal systems, small angle scattering technique is certainly the more appropriate tool. In various solutions surfactants can created different aggregates depend on their structures as well as the solutions properties

2. The key aim of the Summer Practice for students is
   - to get basic knowledge of SANS method
   - to learn how to design SANS experiment
   - to learn how to described obtained results of aggregates of surfactants

   The results of the work will be presented on the forum of Summer Student Practice' participants.
3. Requirements: people demonstrating "can do attitude", the basic knowledge of self-aggregation processes and structure of proteins DNA surfactants own laptop.
   The investigations will carry out in Frank Laboratory of Neutron Physics (FLNP), at the IBR-2 reactor on the YuMO instrument.