

# Emulsions, Foams, Gels, Surfactants, Colloids, Micelles... and neutrons !

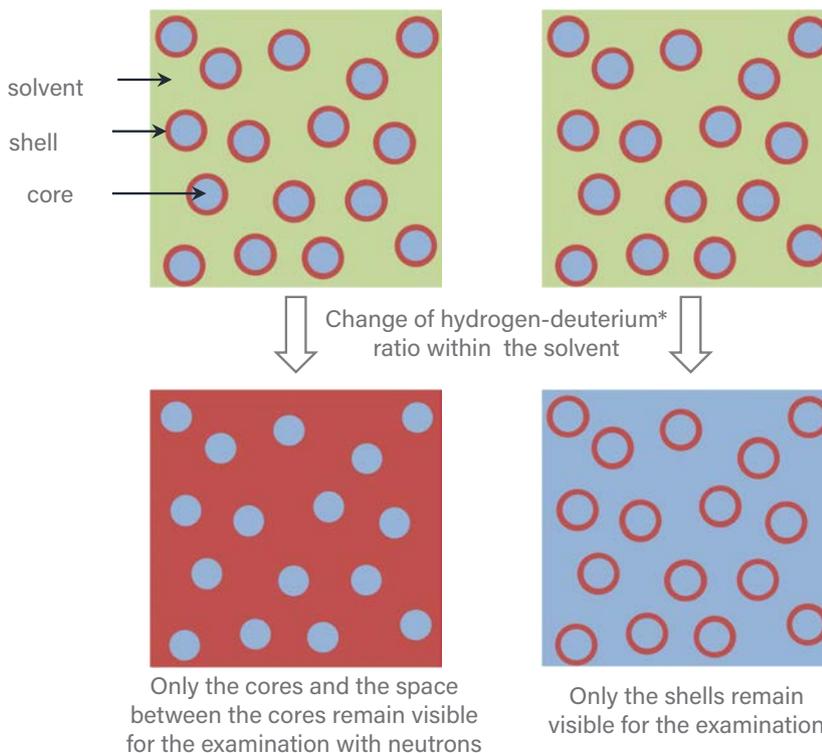
For investigations into liquids or gels composed of particles (e.g. micelles, colloids) within a solvent neutron characterisation techniques can:

- **see what happens to the particles, at the level of the core or the shell, or both**, under various conditions (temperature, shear, concentration);
- **investigate the interaction of the particles with other substances** (pollutants, polymers, etc.), to understand their macroscopic properties.

## Typical areas of study:

- Rheological properties of liquids: optimising viscosity of fluids, resolving concerns with pumping/pouring into vessels and pipes, etc,
- solubility and stability issues,
- complex systems: e.g. colloid-polymer-water, water-alcohol-oil,
- interaction of particles with target components, vectorization,
- interfaces (roughness, thickness, composition, distribution of particles, pores),
- design of active substances.

A unique technique for determining the structure of complex systems: contrast variation



Examples of contrast variation in a study of particles with a core/shell structure (e.g. micelles) within a solvent. By changing the signal coming from the solvent **either the core or the shell of the particle can be studied**.

*\* Deuterium is an isotope of hydrogen with the same chemical properties.*

SINE2020 Industry Consultancy is now open for requests.

# Proof-of-concept experimental beam time is being offered to Industry!

## RAPID ACCESS

Fast-stream processing for industrial applications, optimising result lead times.

## FLEXIBLE SERVICES

In many cases industrial processes and conditions can be re-created in the test laboratory. Final data analysis and reporting are provided.

## CONFIDENTIALITY

Activity covered by non-disclosure agreements. Only company name and measurement type to be published.



## EXPERT CONSULTANCY

Industrial R&D professionals in collaboration with experienced specialists from European neutron centres.

## PARTNERS FROM:

Czech Republic,  
France,  
Germany,  
Hungary,  
Netherlands,  
United Kingdom.



Science & Technology Facilities Council

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