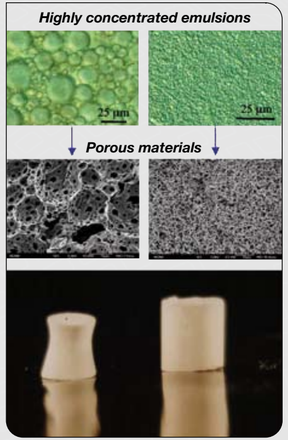
Successful cases

Examples of technology applications:

- Design and improvement of detergent formulations.
- Preparation of nano-emulsions by low-energy methods.
- Preparation of bitumen-in-water highly concentrated emulsions for cold road paving.
- Preparation of high solid content latexes stable to electrolytes.
- Preparation of TiO_2 nanoparticles with catalytic properties for reduction of environmental pollution.

Patented technologies:

- Procedure to obtain nanoparticles by reactions in oil-in-water (O/W) microemulsions.
- Macroporous or meso- and macroporous polymeric materials obtained in concentrated and highly concentrated emulsions.
- Textile compositions with chitosan hydrogels.
- Method for removal of trihalomethanes and/or emerging pollutants by plasma.



L3 Metro: Green (L3) line.
Stop "Palau Reial"

Bus: 30 and 60 lines.
Stop "Jordi Girona"

QCI Centre

Colloid and Interfacial Chemistry Centre

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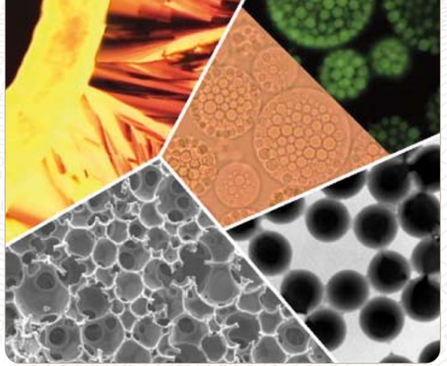
conxita.solans@iqac.csic.es

Contact person:
Dr. Conxita Solans Marsà (Director)



CENTRE QCI
COLLOID CHEMISTRY AND ADVANCED MATERIALS

QCI Centre

Colloid and Interfacial Chemistry Centre

Member of:

TECNIO
Be tech, Be competitive

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CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

iQAC
Institute for Advanced Chemistry of Catalonia

QCI Centre

The mission and vision of QCI Centre is to study colloid surfactant systems, in order to contributing to the development of new technological applications.

The QCI Centre is formed by two consolidated research groups of the Institute for Advanced Chemistry of Catalonia (IQAC), that belongs to the State Agency Spanish Council for Scientific Research (CSIC). The objectives of the QCI Centre are focussed to the development of technological innovation projects in the fields of colloidal chemistry and advanced materials.

The QCI Centre is composed by qualified staff researchers and technical personnel, 30 members, with an important activity in applied research and technology transfer.

The QCI Centre has carried out research projects and technological services for many companies, at both national and international level.

QCI Centre members

This Centre is a member of TECNIO, the brand name created by ACC1Ó to earmark the centres and stakeholders that specialise in applied research and technology transfer in Catalonia. This serves the twofold purpose of enabling businesses to access leading R&D+i skills and of favouring the competitiveness and international outreach of these centres.

Bid Technology

Research Projects:

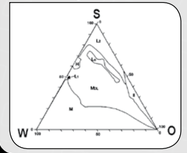
- Studies on phase behavior of surfactant systems.
- Design of tailor-made formulations and improvement of properties (controlled delivery systems of active ingredients, detergents, etc.).
- Preparation of advanced materials from colloidal surfactant systems: nanoparticles, meso- and macroporous materials, hydrogels, etc.
- Surface modification (textiles, polymers, etc.) by plasma treatments and by incorporation of nanostructured materials.

Technology Services:

- Characterization of nanostructured liquids and colloidal systems.
- Characterization of interfaces.

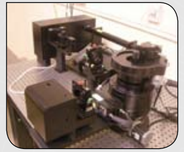
Specific experimental equipment: spectrometers for light (PCS) and X-ray (SAXS/WAXS) scattering, rheometer, tensiometers, optical video microscope, scanning electron microscope (SEM), plasma generator at variable pressure, zeta potential equipment, etc.

Phase diagram



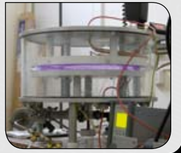
Nano-emulsion

PCS



Rheometer

Plasma generator



Scopes Technology

Chemical Technologies

Materials Technologies

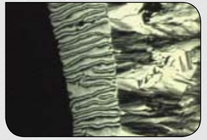
- Design, preparation and characterization of new formulations based on surfactant colloidal systems (emulsions, nano-emulsions, microemulsions, vesicles, etc.).
- Preparation of tailor-made nanoparticles and multifunctional meso- and macroporous materials from colloidal systems.
- Modification of surface properties by plasma treatments at variable pressure.

Sectors

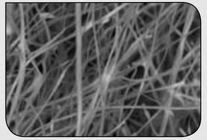
The QCI Centre develops projects and offers technological services to companies of different industrial sectors, some of them are:

- Chemical
- Pharmaceutical and cosmetic
- Detergents
- Textiles and polymers
- Biotechnological and nanomedicine
- Agrofood
- Energy and environment

Liquid crystalline phases



Chitosan hydrogel



Nanoparticles prepared in O/W microemulsions