

## SELECTIVE AND SENSITIVE METHOD FOR THE COLORIMETRIC DETECTION OF ANIONIC SURFACTANTS IN WATER

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Since the formulation of supramolecular principles, chemists have been developing systems with enhanced functionalities. The blending of chemical sensors and inorganic systems has recently resulted in the preparation of hybrid organic-inorganic materials with new patterns of selectivity. [1-2]

Anionic surfactants are of widespread importance in the detergent industry, lubrication, and so on, and widely employed. Many well-know methodologies for determination require tedious procedures or use of relatively large amounts of chlorinated solvents there are not readily biodegradable.

We present here a new sensing protocol based in the use of organic-inorganic hybrid materials. The envisioned sensing protocol is schematically shown in Figure 1 and involves two steps. In the first, there is a coordination of the anionic surfactants by an imidazolium-functionalised cationic surface (S1) that would result in a superficial self-assembly organization of the tensoactives giving rise a monolayer of long alkyl chains pointing toward the bulk solution. This layer would be remarkably hydrophobic and would extract, in a second step, a suitable dye (i.e methylene blue) from water, i.e. colorimetrically signalling the presence of the colourless anionic surfactants.

This new colorimetric method for the determination of anionic surfactants in water based on supramolecular and self-assembly concepts on functionalized surfaces is a modern interpretation, based in green chemistry concepts, of an old analysis.[3]

### References:

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### Figures:

