ORGANIZED MEDIA FOR SEPARATION AND SPECTROMETRIC ANALYSIS

Sergei N. Shtykov
Chemistry Department, Saratov State University, Saratov, 410028, RUSSIA

It is well known that along with traditional homogeneous aqueous and non-aqueous solvents there exist some microheterogeneous liquid organized media. Microheterogeneous media refer to single-phase homogeneous solutions on macroscale but two-phase heterogeneous ones on nanoscale. Depending on the nature of composing molecules and the way of formation, organized media can be classified into two main groups:

- media that contain organized self-assembled micellar systems forming their own micropseudophase with another polarity inside;
- media that contain receptor molecules having their own three-dimensional cavity serving as a "host" for an analyte — "guest".

A characteristic feature of organized media is an ability to solubilize (include) substances inside a micellar system or a receptor molecule. Therefore, the main peculiarity determining an unusual influence of such media on spectroscopic, physicochemical and analytical properties of substances is a change of microenvironment of solubilized molecule, i.e. local effect.

In the present communication a classification and peculiarities of organized media, their volumetric properties, and effect on prototropic equilibria, use in photometric, fluorimetric, phosphorimetric analysis, optical sensors based on Langmuir-Blodgett films, and separation methods (micellar extraction, micellar chromatography) have been considered and examined.