Spectroscopic investigations on liquid–liquid interfaces

Satoshi Tsukahara

Published online: 30 August 2009
© Springer-Verlag 2009

Liquid–liquid interfaces have played essential roles in analytical chemistry, colloidal chemistry, separation chemistry, and biological chemistry. Liquid–liquid interfaces provide a favorable reaction field between hydrophobic and hydrophilic substances, and they also have important functions for transporting substances between two phases.

The thickness of the liquid–liquid interface is considered to be only a few nanometers, and only very small amounts of substances exist in such a thin space. Liquid–liquid interfaces are flexible and cannot be fixed at a spatial position. Furthermore, the organic or aqueous phase prevents any physical contacts with the liquid–liquid interface. These restrictions have hindered the development of studies on liquid–liquid interfaces.

Historically, the interfacial tension technique was the only method applied to the investigation of the liquid–

liquid interface for a long time; this method is a fundamental one for studies on the interface even now. Recently, the growth and spread of spectroscopy have led to the development of many new direct analytical methods and the discoveries of various specific reactions and phenomena at the liquid–liquid interface.

It is from this perspective that we have compiled this special issue focusing on spectroscopic investigations on liquid–liquid interfaces. As guest editor, I hope this issue will contribute to further investigations on liquid–liquid interfaces. I thank all authors and referees for their kind cooperation in achieving the publication of this special issue.

Satoshi Tsukahara is Associate Professor in the Department of Chemistry at the Graduate School of Science, Hiroshima University, where he performs in situ microscopic investigations on reactions and studies phenomena occurring at liquid–liquid interfaces.

S. Tsukahara (✉)
Laboratory of Analytical Chemistry, Department of Chemistry,
Graduate School of Science, Hiroshima University,
1-3-1, Kagamiyama,
Higashi-Hiroshima 739-8526, Japan
e-mail: tsukahara@hiroshima-u.ac.jp