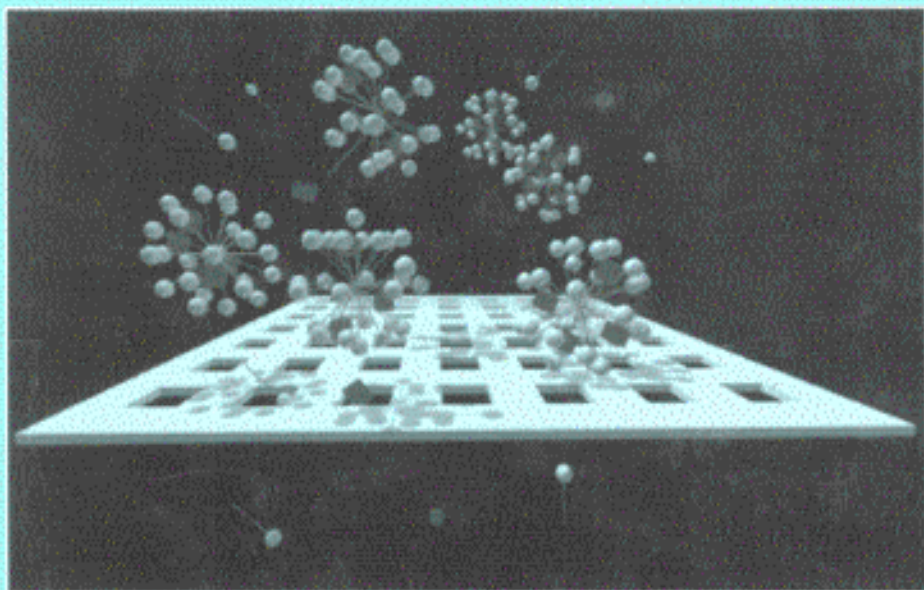


ACS SYMPOSIUM SERIES 740

Surfactant-Based Separations

Science and Technology



EDITED BY

John F. Scamehorn and Jeffrey H. Harwell

Contents

Preface	xiii
1. Current Trends and Future Developments in Surfactant-Based Separations John F. Scamehorn and Jeffrey H. Harwell	1
SURFACTANT-ENHANCED SOIL REMEDIATION	
2. Phase Behavior of Perchloroethylene with Mixtures of Sulfosuccinate Surfactants V. Weerasooriya, W. H. Wade, and G. A. Pope	16
3. Integrated Demonstration of Surfactant-Enhanced Aquifer Remediation with Surfactant Regeneration and Reuse V. Weerasooriya, S. L. Yeh, G. A. Pope, and W. H. Wade	23
4. Soil Remediation with Microemulsions: Basic Properties F.-H. Haegel, F. Dierkes, S. Kowalski, K. Mönig, M. J. Schwuger, G. Subklew, and P. Thiele	35
5. Separation of Volatile Organic Compounds from Surfactant Solutions by Pervaporation L. M. Vane, E. L. Giroux, F. R. Alvarez, and L. Hitchens	57
6. The Use of Liquid-Liquid Extraction in Hollow Fiber Membrane for the Removal of Organic Contaminants from Aqueous Surfactant Streams B. Kitiyanan, J. H. O'Haver, Jeffrey H. Harwell, and D. A. Sabatini	76
MEMBRANE-BASED SEPARATIONS	
7. Block Copolymer Micelles for Water Remediation Jos T. F. Keurentjes	92
8. Wastewater Remediation: Utilization of Environmentally Responsive Polymeric Surfactants for the Sequestration of <i>p</i>-Cresol R. Scott Armentrout, Michael F. Richardson, and Charles L. McCormick	113

9. Resolution of Enantiomers Using Enantioselective Micelles in Ultrafiltration Systems	123
P. E. M. Overdeest, Jos T. F. Keurentjes, A. van der Padt, and K. van 't Riet	
10. Surfactant-Based Colloidal Particles as the Extracting Phase for the Removal of Metal Ions from Aqueous Environments: Kinetic and Applied Aspects	139
Christian Tondre	
11. Micellar-Enhanced Ultrafiltration in a Spiral Wound Ultrafiltration Module and Comparison with Stirred Cell Performance	158
Bruce L. Roberts, John F. Scamehorn, and Sherril D. Christian	
12. Crossflow Microfiltration Characteristics of Surfactants: The Effects of Membrane Physical Chemistry and Surfactant Phase Behavior on Gel Polarization and Rejection	175
G. Akay, P. T. Odirile, B. Keskinler, and R. J. Wakeman	
13. Organic Compounds Removal by Vesicle-Enhanced Ultrafiltration	201
Masahiko Abe and Yukishige Kondo	

ADSORPTION- AND FLOTATION-BASED SEPARATIONS

14. Nonionic Surfactants as Collectors for the Flotation of Oxidized and/or Low-Rank Coal	230
Douglas W. Fuerstenau, Guy H. Harris, and Renhe Jia	
15. Flotation of PAH-Contaminated Dredged Sludge	248
Huib Mulleneers, Suzan Roubroeks, Harry Bruning, Wim Rulkens, and Luuk Koopal	
16. Studies of Adsorption and Aggregation of Cationic Surfactants on Silica Surfaces Using EPR	260
Martin G. Bakker, Gregory L. Turner, John Matthews, and Kunliang Zhang	
17. Speciation of Metal-Containing Compounds Found in the Environment by Micellar Liquid Chromatography Interfaced to Inductively Coupled Plasma Mass Spectrometry	276
M. P. Dziewatkoski	

- | | | |
|-----|---|-----|
| 18. | Selectivity in Micellar Liquid Chromatography:
Surfactant-Bonded Phase Associations in Micellar Reversed
Phase Liquid Chromatography | 290 |
| | Barry K. Lavine, Sumar Hendayan, William T. Cooper,
and Yifang He | |
| 19. | Determination of Distribution Ratios of Aromatic Compounds
between Aqueous Solution and Surfactant-Covered Silica
by a Chromatographic Method | 314 |
| | Stefan Holzheu, Thilo Behrends, and Reimer Herrmann | |
| 20. | Atmospheric Pressure Chemical Ionization–Mass
Spectrometry and Capillary Electrophoresis for the Analysis
of Chemical Warfare Agent Degradation Products | 329 |
| | A.-E. F. Nassar, S. V. Lucas, P. B. W. Smith,
and L. D. Hoffland | |
| 21. | Particulate Removal from Oxygen Systems Using Surfactant-
Enhanced Fluorinated Solvents | 351 |
| | Gerard K. Newman, Jeffrey H. Harwell, Bijo Mathew,
Greg Caudill, Christy Crowe, Marc Powers, and Bharu Gunturi | |

EXTRACTION AND DEINKING PROCESSES

- | | | |
|-----|--|-----|
| 22. | Reversed Micelles as Novel Protein Refolding Media | 374 |
| | Masahiro Goto, Tsutomu Ono, and Shintaro Furusaki | |
| 23. | Deinking of Papers Printed with Water-Based Inks:
An Overview | 384 |
| | John K. Borchardt | |

INDEXES

- | | |
|---------------|-----|
| Author Index | 422 |
| Subject Index | 423 |