

CONTENTS

Preface	vii
<i>Frederick M. Fowkes</i> , Sprague Electric Co., North Adams, Mass.	
1. Relation of Equilibrium Contact Angle to Liquid and Solid Constitution	1
<i>William A. Zisman</i> , U. S. Naval Research Laboratory, Washington 25, D. C.	
2. The Chemical Structure of Solid Surfaces as Deduced from Contact Angles	52
<i>N. K. Adam</i> , Department of Chemistry, University of Southampton, Southampton, England	
3. The Status of Contact Angle as a Thermodynamic Property	57
<i>Arthur W. Adamson</i> and <i>Irene Ling</i> , Department of Chemistry, University of Southern California, Los Angeles 7, Calif.	
4. Theory for the Estimation of Surface and Interfacial Energies. VI. Surface Energies of Some Fluorocarbon Surfaces from Contact Angle Measurements	74
<i>Robert J. Good</i> , Space Science Laboratory, General Dynamics/Astronautics, San Diego, Calif.	
5. Wettability by Heats of Immersion	88
<i>A. C. Zettlemoyer</i> and <i>J. J. Chessick</i> , Surface Chemistry Laboratory, Lehigh University, Bethlehem, Pa.	
6. Dispersion Force Contributions to Surface and Interfacial Tensions, Contact Angles, and Heats of Immersion	99
<i>Frederick M. Fowkes</i> , Sprague Electric Co., North Adams, Mass.	
7. Contact Angle Hysteresis. I. Study of an Idealized Rough Surface	112
<i>Rulon E. Johnson, Jr.</i> , and <i>Robert H. Dettre</i> , Organic Chemicals Department, Jackson Laboratory, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.	

	Contact Angle Hysteresis. II. Contact Angle Measurements on Rough Surfaces.....	136
	<i>Robert H. Dettre and Rulon E. Johnson, Jr., Organic Chemicals Department, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.</i>	
9	Upper Limits to the Contact Angles of Liquids on Solids <i>Elaine G. Shafrin and William A. Zisman, U. S. Naval Research Laboratory, Washington 25, D. C.</i>	
10	Evidence for Solid-Fluid Interfacial Tensions from Contact Angles..... <i>J. C. Melrose, Field Research Laboratory, Socony Mobil Oil Co., Inc., Dallas, Tex.</i>	
	The Relationship between Wetting and Adhesion	180
	<i>J. R. Huntsberger, Fabrics and Finishes Department, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.</i>	
	<i>Surface Energetics, Adhesion, and Adhesive Joints.</i>	
12.	A Comprehensive Theory of Adhesion..... <i>Louis H. Sharpe and Harold Schonhorn, Bell Telephone Laboratories, Inc., Murray Hill, N. J.</i>	189
13.	Hysteresis of Contact Angles in the System Mercury - Benzene - Water..... <i>Antoine M. Gaudin and August F. Witt, Massachusetts Institute of Technology, Cambridge 39, Mass.</i>	202
14.	The Contact Angle at the Gallium-Mercury Interface on Glass..... <i>Robert J. Good, William G. Givens, and Charles S. Tucek, Space Science Laboratory, General Dynamics/Astronautics, San Diego, Calif.</i>	211
15.	Thermodynamics of Wetting of Solid Oxides..... <i>William H. Wade and Norman Hackerman, Department of Chemistry, University of Texas, Austin, Tex.</i>	222
16.	Chemisorption and Dewetting of Glass and Silica..... <i>Lisbeth Ter-Minassian-Saraga, Laboratoire de Chimie Physique, Faculté des Sciences, Paris, France</i>	
17.	Resistance to Flow in Capillary Systems of Positive Contact Angle..... <i>Anthony M. Schwartz, Charles A. Rader, and Elaine Huey, Harris Research Laboratories, Inc., Washington 11 D. C.</i>	250

W. P. Doyle and A. H. Ellison, Texaco Research Center, Beacon, N. Y.

19. **Electron Microscopic Investigation of the Adsorption of Long-Chain Fatty Acid Monolayers on Glass** 275
L. O. Brockway and R. L. Jones, University of Michigan, Ann Arbor, Mich.
20. **Direct Measurement of Adsorption of Radiostearic Acid onto Vapor-Deposited Metal Films. Effect of Moisture** 295
Donald C. Walker and Herman E. Ries, Jr., Research & Development Department, American Oil Co., Whiting, Ind.
21. **The Wettability of a Homologous Series of Nylon Polymers** 302
Tomlinson Fort, Jr., Fiber Surface Research Section, Textile Fibers Department, E. I. du Pont de Nemours & Co., Inc., Kinston, N. C.
22. ~~An Indication for the Study of~~ **the Wettability of Road Aggregates with Doped Bituminous Binders** 310
R. P. Dron, Laboratoire Central des Ponts et Chaussées, 58 Bd. Lefebvre, Paris 15°, France
23. **Surface Activity at Organic-Liquid Air Interfaces. V. Effect of Partially Fluorinated Additives on the Wettability of Solid Polymers** 317
N. L. Jarvis, R. B. Fox, and W. A. Zisman, U. S. Naval Research Laboratory, Washington 25, D. C.
24. **Prevention of Liquid Spreading or Creeping** 332
Marianne K. Bernett and William A. Zisman, U. S. Naval Research Laboratory, Washington 25, D. C.
25. **Effect of Polar-Nonpolar Additives on Oil Spreading on Solids, with Applications to Nonspreading Oils** 341
Robert L. Cottington, Charles M. Murphy, and Curtis R. Singleterry, U. S. Naval Research Laboratory, Washington 25, D. C.
26. **Dynamic Surface Phenomena in the Spontaneous Spreading of Oils on Solids** 355
Willard D. Bascom, Robert L. Cottington, and Curtis R. Singleterry, U. S. Naval Research Laboratory, Washington 25, D. C.
- Index 381