

1. Record Nr.	UNINA9910783226603321
Titolo	Contact angle, wettability and adhesion . Volume 3 // edited by Kash L. Mittal
Pubbl/distr/stampa	Boca Raton, FL : , : CRC Press, an imprint of Taylor and Francis, , 2003
ISBN	0-429-08812-4 1-280-46547-6 9786610465477 1-4175-7780-0 90-474-0332-0
Edizione	[First edition.]
Descrizione fisica	1 online resource (530 p.)
Disciplina	541/.33
Soggetti	Surface chemistry Contact angle Wetting Adhesion
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"This volume chronicles the proceedings of the Third International Symposium on Contact Angle, Wettability and Adhesion held ... in Providence, Rhode Island, May 20-23, 2002"--Pref. "Volume 3."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Contents; Preface; Part 1: General Papers; Part 2: Contact Angle Measurements / Determination and Solid Surface Free Energy; Part 3: Wetting and Spreading: Fundamental and Applied Aspects
Sommario/riassunto	This volume chronicles the proceedings of the Third International Symposium on Contact Angle, Wettability and Adhesion held in Providence, Rhode Island, May 20–23, 2002. A thermodynamic model for wetting free energies of solids from contact anglesA. Buguin, X. Noblin and F. Brochard-WyartA. MarmurAdsorption, evaporation, condensation, and fluid flow in the contact line regionAdsorption isotherms of cationic surfactants on bitumen films studied using axisymmetric drop shape analysisAdvancing, receding and vibrated contact angles on rough hydrophobic surfacesApplication of droplet dynamics analysis for assessment of water penetration resistance of

coatings C.S. Vijapurapu and D.N. Rao C.W. Extrand Characterization of surface free energies and surface chemistry of solids Condensation transport in triple line motion Contact-angle measurements and criteria for surface energetic interpretation D. Geromichalos, M. Kohonen, F. Mugele and S. Herminghaus D.N. Rao D.Y. Kwok and A.W. Neumann Dynamic evolution of contact angle on solid substrates during evaporation Dynamic aspects of wetting in granular matter E. Ruckenstein Effect of adsorbed vapor on liquid-solid adhesion Effects of surface defect, polycrystallinity and nanostructure of self-assembled monolayers on wetting and its interpretation Effect of the physical chemistry of polymeric coating surfaces on fouling and cleanability with particular reference to the food industry Experimental study of contact line dynamics by capillary rise and fall F.M. Etzler G.C.H. Mo, J. Yang, S.-W. Lee, P.E. Laibinis and D.Y. Kwok G.M. Laudone, G.P. Matthews and P. A.C. Gane Indirect measurement of the shrinkage forces acting during the drying of a paper coating layer Inertial dewetting: Shocks and surface waves J. Yang, J. Han, K. Isaacson and D.Y. Kwok J. Zhang and D. Y. Kwok K. Grundke, M. Nitschke, S. Minko, M. Stamm, C. Froeck, F. Simon, S. Uhlmann, K. Pschel and M. Motornov L. Boulang-Petermann, C. Debacq, P. Poiret and B. Cromires L. Muszyski, M.E.P. Wlinder, C. Prvu, D.J. Gardner and S.M. Shaler Light-induced reversible wetting of structured surfaces M. Fabretto, R. Sedev and J. Ralston M.A. Rodriguez-Valverde, A. Pez-Dueas, M.A. Cabrerizo-Vlchez and R. Hidalgo-Ivarez M.E.R. Shanahan M.E. Schrader Merging two concepts: Ultrahydrophobic polymer surfaces and switchable wettability N. Richards, J. Ralston and G. Reynolds P. Woehl and A. Carr P.C. Wayner, Jr. P.-Z. Wong and E. Schffler Part 1: General Papers Part 2: Contact Angle Measurements / Determination and Solid Surface Free Energy Part 3: Wetting and Spreading: Fundamental and Applied Aspects S.K. Barthwal, A.K. Panwar and S. Ray Self-propelled drop movement: Chemical influences on the use of kinetic or equilibrium approaches in reactive wetting The molecular origin of contact angles in terms of different combining rules for intermolecular potentials The concept, characterization, concerns and consequences of contact angles in solid-liquid-liquid systems The effect of rock surface characteristics on reservoir wettability This symposium was held to provide a forum to update and consolidate the research activity on this topic. The world of wettability is very wide as it plays an extremely important role in a legion of technological areas. This volume contains a total of 25 papers covering myriad aspects of contact angle and wettability. All manuscripts were rigorously peer-reviewed and all were revised and properly edited before inclusion in this volume. This book is divided into three parts: General Papers; Contact Angle Measurements/Determination and Solid Surface Free Energy; and Wetting and Spreading: Fundamental and Applied Aspects. The topics covered include: fundamental aspects of contact line region; effect of adsorbed vapor on liquid-solid adhesion; molecular origin of contact angles; various factors influencing contact angle measurements; different kinds of contact angles; various ways to measure contact angles; contact angle hysteresis; determination of solid surface free energies via contact angles; contact angle measurements on various materials (smooth, rough, porous, heterogeneous); factors influencing/dictating wetting and spreading phenomena; ultrahydrophobic polymer surfaces; switchable wettability; reactive wetting; wetting by nanocrystallites; dewetting; wetting of self-assembled monolayers; reversible wetting of structured surfaces; wetting in granular and porous media; relationship between wetting and adhesion; relevance/importance of wetting and surface energetics

in technological applications, including food industry. This volume and its predecessors containing bountiful information will be of great interest and value to everyone interested in the contemporary R&D activity in the fascinating world of contact angles and wettability. The information garnered in these volumes will hopefully serve as a fountainhead for new research ideas and applications. Viscous dissipation and rheological behavior near the solid/liquid/vapor triple line. Application to the spreading of silicone oils. Wetting of a substrate by nanocrystallites. Wetting in porous media: Some theoretical and practical aspects.
