

Contact Angle, Wettability and Adhesion, Volume 4

This volume chronicles the proceedings of the 4th International Symposium on Contact Angle, Wettability and Adhesion held in Philadelphia, PA, June 2004. The world of wettability is very wide and it plays a crucial role in many and varied technological areas ranging from microfluidics to biomedical to agriculture to welding. This volume contains a total of 31 papers covering many ramifications of contact angle, wettability and adhesion. All manuscripts were rigorously peer-reviewed and revised, and properly edited before inclusion in this book. The topics covered include: fundamental aspects of contact line region; evaporative behavior of sessile drops; various factors influencing contact angle measurements; different kinds of contact angles; various ways to measure contact angles; contact angle hysteresis; contact angle measurements on various materials (smooth, rough, porous, heterogeneous); effect of electric field on contact angle (electrowetting); wetting and spreading on heterogeneous surfaces; factors influencing wetting/spreading phenomena; determination of solid surface free energy via contact angle measurements; application of AFM in determining solid surface tension at the nano-scale; ultralyophobic surfaces; surface modification and wettability; multiphase flow dynamics in porous media; thin film coatings for textile materials; bio-fouling resistant coatings; relationships between wetting and adhesion; and relevance/importance of wetting and surface energetics in technological applications, including cleaning of flooring materials, kinetics of oil removal from coating materials, cell adhesion, and mold compound- metal adhesion in semiconductor packaging.

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