PRELIMINARY PROGRAM

SEVENTH INTERNATIONAL SYMPOSIUM ON CONTACT ANGLE, WETTABILITY AND ADHESION

To be held in Danbury, Connecticut, USA, June 23-25, 2010

In his opening remarks at the first symposium in this series Professor Robert Good pointed out that Galileo in the 17th century was quite likely the first investigator to observe contact angle behavior with his experiment of floating a thin gold leaf on top of a water surface. Since that time contact angle measurements have found wide application as a method for determining the energetics of surfaces. This, in turn, has a profound effect on the wettability and adhesion of liquids and coatings to surfaces.

This symposium will be concerned with both the fundamental and applied aspects of contact angle measurements. Issues such as the applicability and validity of various measurement techniques and the proper theoretical framework for the analysis of contact angle data will be of prime concern.

In addition, a host of applications of the contact angle technique will be explored including but not limited to: wettability of powders, fibers, wood products, papers, polymers and monolayers. Further focus will be on the use of contact angle data in evaluating surface modification procedures, determining relevance of wettability to adhesion, the role of wettability in bioadhesion, ophthalmology, prosthesis and in the control of dust in mining and milling applications. The primary focus of this symposium will be to provide a forum for the discussion of cutting edge advancements in the field and to review and consolidate the accomplishments which have been achieved thus far.

MEASUREMENT METHODS

S. F. Chini and **A. Amirfazli**; Department of Mechanical Engineering, University of Alberta, Edmonton, AB, CANADA T6G 2G8; **A New Method for Measuring the Contact Angle of Asymmetric and Symmetric Drops**

Andrew J. B. Milne and **Alidad Amirfazli**; Department of Mechanical Engineering, University of Alberta, Edmonton, AB, CANADA; **Drop Adhesion to Surfaces Exposed to a Shearing Airflow**

Thomas Bahners; Deutsches Textilforschungszentrum Nord-West e. V., Institut an der Universität Duisburg-Essen Adlerstraße 1, 47798 Krefeld, GERMANY; **The "Do's" and "Donts" of Wettability Characterization in Textiles**

Javier Montes Ruiz-Cabello, Felipe II Guerrero-Barba, **Miguel A. Rodríguez-Valverde** and Miguel A. Cabrerizo-Vílchez; Biocolloid and Fluid Physics Group, Department of Applied Physics, University of Granada, Granada SPAIN; **A New Strategy to Predict the Equilibrium Contact Angle of Rough Homogeneous Surfaces from Contact Angle Hysteresis Measurements**

Shreerang S. Chhatre, Jesus O. Guardado, Joseph M. Mabry, Gareth H. McKinley, and Robert E. Cohen; Department of Chemical Engineering Massachusetts Institute of Technology, Cambridge, MA 02139; **Girifalco – Good Analysis on Perfluorinated SiO_x Surfaces**

Bharadwaj R. Prabhala**, Mahesh V. Panchagnula**, and Srikanth Vedantam; Department of Mechanical Engg., Tennessee Technological University, Cookeville, TN 38501, USA; **Equilibrium Shapes of Drops on Hysteretic Surfaces**

Sonja Richter, Chong Li, Francois Ayello, Xuanping Tang, Win Robbins, Srdjan Nesic; Institute for Corrosion and Multiphase Technology, Department of Chemical Engineering, Ohio University, Athens, OH ; **Contact Angle Measurements for the Assessment of Corrosion Issues in Carbon Steel Pipelines Carrying Crude Oil.**

Konrad Terpiłowski, Małgorzata Bielska , Krystyna Prochaska and Emil Chibowski; Department of Physical Chemistry – Interfacial Phenomena, Faculty of Chemistry, Maria Curie-Sklodowska University, Lublin, POLAND; **Apparent Surface Free Energy of Ultrafiltration Membranes**

SUPERHYDROPHOBIC EFFECT

Wei Xu, Rajesh Leeladhar, and **Chang-Hwan Choi**; Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken NJ; **Effects of Micro and Nano Particles on Wetting Dynamics of Evaporating Droplets on Superhydrophobic Surfaces**

Lutz Prager , Thomas Bahners; Leibniz-Institut für Oberflächenmodifzierung,; **Creating Surperhydrophilic Surfaces by Photo-induced Microfolding**

Jonathan Rothstein; Mechanical and Industrial Engineering, University of Massachusetts, Amherst, MA 01003; **Drag Reduction Using Superhydrophobic Surfaces**

Tamir Stein; Ariel University Center of Samaria, Department of Chemical Engineering and Materials. Bar-Ilan University, Chemistry Department; **Electrostatically Driven Droplets Deposited on Superhydrophobic Surfaces**

CONTACT ANGLE FOR SURFACE CHARACTERIZATION

Costin Anghel and Bernard Riedl; Wood Science Department, Laval University, Sainte-Foy, Quebec G1K 7P4, CANADA; **Contact Angle Measurements for Monitoring Influence of Atmospheric Pressure Plasma on Wood Surfaces**

Y.L. Chow, C.K. Chan and C.W. Kan; Institute of Textile and Clothing, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HONG KONG; **A Study of Grey Cotton Fabric Using Laser Technology and Contact Angle Goniometry**

A. A. Hamouda, University of Stavanger, P. O. Box 8002 Ullandhaug, 4068 Stavanger, NORWAY; **Wettability Alteration of Sand Stone by Nitrogen Based Component and its Effect on the Interfacial Charge Between Asphaltenic Model Oil and Sulfate and Magnesium Ions**

Halim Kusumaatmaja; MPI of Colloids and Interfaces, Am Muhlenberg 2, D-14476, Golm/Potsdam, GERMANY; **Wetting on Membranes**

Y.L. Lam, C.W. Kan, C.W.M. Yuen and C.H. Chui; Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, CHINA; **Surface Physical and Chemical Analysis of Plasma-treated Cotton Fabric Subjected to Wrinkle-resistant Finishing**

Marko Petrič and Milan Šernek; University of Ljubljana, Biotechnical Faculty, Department of Wood Science & Technology, amnikarjeva 101, SI-1000 Ljubljana, SLOVENIA; **Contact Angle Measurements on Wood And Calculation of Its Surface Free Energy**

L. Mazzola, M. Sebastiani, E. Bemporad and F. Carassiti; Mechanical and Industrial Engineering Department, University "Roma Tre", Rome, ITALY **An Innovative non Contact Method to Measure Surface Free Energy on Micro Areas**

P.G. Rouxhet, M.J. Genet, J. Landoulsi, S. Fleith, S. Derclaye, Y. Adriaensen; Unité de chimie des interfaces, UCLouvain, Croix du Sud 2/18, B-1348 Louvain-la-Neuve, BELGIUM; **How clean is a cleaned surface ?**

CONTACT ANGLE FOR ADVANCED MATERIALS DEVELOPMENT

Laurence Boulangé and Flora Sterczynski; EIFFAGE Travaux Publics, Centre d'Etudes et de Recherches de Corbas, FRANCE; **Physico Chemical Study of Environment-friendly Emulsifiers for the Road Industry Using Drop Shape Analysis**

Yu Fu and W. H. Zhong; School of Mechanical and Materials Engineering, Washington State University, Pullman, WA 99164; **Effects of Nano-additives on Dynamic Wetting Behavior and Flowability of Epoxy Resins**

Adam J. Meuler, Kyoo-Chul (Kenneth) Park, Joseph M. Mabry, Gareth H. McKinley, and Robert E. Cohen; Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139; **Towards Practical Omniphobic Coatings**

Masataka Murahara; Professor Emeritus of Tokai University, JAPAN; **Plasma Pre-treatment Effect for Photo-chemical Modification and Patterned Functional Group Substitution onto Low Wettable Materials**

Niklas Nordgren; Department of Fibre and Polymer Technology, Coating Technology, KTH Royal Institute of Technology, Teknikringen 56-58, SE-100 44 Stockholm, SWEDEN; **Tailored Interfacial Properties by Surface Grafting: From Tunable Biofiber Adhesion to Superhydrophobic Cellulose**

G.C. Pirlot, O. Debaisieux, A. Goeldel, A. Lacroix, B. Nysten, **P.G. Rouxhet**; Unité de chimie des interfaces, UCLouvain, B-1348 Louvain-la-Neuve, BELGIUM; **Surface Modification of Bi-oriented Polypropylene Films Used for Food Packaging**

Andreas Wego and Thomas Bahners; Deutsches Textilforschungszentrum Nord-West e.V.; **Photochemical Functionalization of Carbon Fibers for Enhanced Matrix Adhesion**

ADVANCED INVESTIGATIONS

Edward Bormashenko; Ariel University Center of Samaria, Applied Physics Faculty, Ariel, Israel, 40700, P.O.B. 3; **Novel Investigations of Liquid Marbles**

Augustin Karasangabo and Bernhard Christian; University of Leoben, Franz-Josef-Straße 18, A- 8700 Leoben, AUSTRIA; **Investigation of the Nature of Liquid Steel – Alumina Interfacial Interactions from Sessile Drop Measurements: Cases of Fe-Ti and Fe-P Alloys**

Kyoo-Chul (Kenneth) Park, Shreerang S. Chhatre, Wonjae Choi, Robert E. Cohen, and Gareth H. McKinley; Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139; **Robustness Analysis of Non-Wetting Surfaces Based on Distorted Liquid-Air Interfaces of Droplets**

J. R. Moffat, K. Sefiane and **M. E. R. Shanahan**; Laboratoire de Mécanique Physique (LMP)-UMR CNRS 5469, Université Bordeaux 1, 351 Cours de la Libération, 33405 TALENCE Cedex, FRANCE; **Wetting Hysteresis as Induced by Liquid Nano Suspensions**

Rafael Tadmor, Prashant Bahadur, Aisha Leh, Hartmann E. N'guessan, Rajiv Jaini, Lan Dang and Dan F. Smith Department of Chemical Engineering, Lamar University, Beaumont TX 77710; **The Influence of Normal Force on the Lateral Force at the Interface Between a Liquid Drop and a Surface**

Peichun Amy Tsai, Christophe Pirat, Detlef Lohse, Alisia M. Peters , Rob Lammertink, Matthias Wessling, Sergio Pacheco and Leon Lefferts; Physics of Fluids Group, University of Twente, THE NETHERLANDS;
Wetting Transition, Drop Impact, and Micro-flows upon Hydrophobic Microstructures

This symposium is being organized under the direction of Dr. K. L. Mittal, Editor-in-Chief, Journal of Adhesion Science and Technology by MST Conferences. All presenters will be invited to publish their work in the Journal of Adhesion Science and Technology. Please notify the conference chairman of your intentions to present a paper as early as possible.

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