



FINAL PROGRAM

ELEVENTH INTERNATIONAL SYMPOSIUM ON CONTACT ANGLE, WETTABILITY AND ADHESION

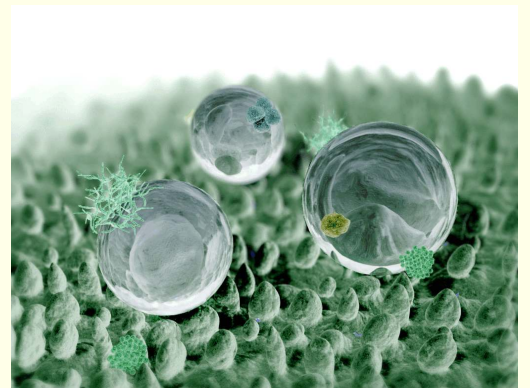
Stevens Institute of Technology,
Hoboken, New Jersey, USA, June 13-15, 2018

SYMPOSIUM HISTORY AND MOTIVATION

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 is 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 are of prime concern.

In addition, a host of applications of the contact angle technique are explored including but not limited to: wettability of powders, fibers, wood products, paper, polymers and monolayers. Further focus is 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.



ORGANIZERS AND CONTACT INFORMATION

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The staff of MST CONFERENCES would like to welcome you to the ELEVENTH INTERNATIONAL SYMPOSIUM ON CONTACT ANGLE, WETTABILITY AND ADHESION. We would also like to thank KRÜSS GmbH, DataPhysics GmbH and EBATCO/KYOWA as industrial sponsors for helping to make this symposium a success. We urge all participants to visit their displays in the lobby during lunch and coffee breaks.



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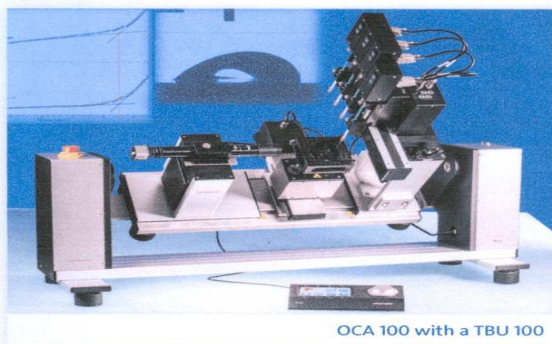
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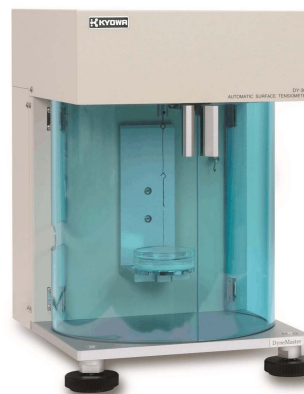
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8:20-8:25: WELCOME AND OPENING
REMARKS BY CONFERENCE DIRECTOR
DR. K. L. MITTAL

8:25-8:35: PROF. CHANG-HWAN CHOI
THE SYMPOSIUM HOST WILL INTRODUCE
DR. JEAN ZU, DEAN OF SCHOOL OF
ENGINEERING AND SCIENCE AT STEVENS
WHO WILL GIVE A WELCOMING ADDRESS

SESSION I: WEDNESDAY JUNE 13, 2018

8:35-9:05: Ridvan Ozbay, Youhua Jiang,
and Chang-Hwan Choi; Department of
Mechanical Engineering, Stevens Institute
of Technology, Hoboken, New Jersey
07030, USA; Contact Line Dynamics of
a Bubble on Superaerophobic Surfaces

9:05-9:35: Thomas Willers, Raymond G.
Sanedrin, Farhad Ismai, Prashant
Waghmare; Krüss GmbH, Borsteler
Chaussee 85, 22453 Hamburg, GERMANY;
CANADA; Theoretical Modeling of the
Novel Liquid Needle Dosing Method for
Contact Angle Measurements

9:35-10:05: Tingyi "Leo" Liu;
Department of Mechanical and Industrial
Engineering, University of Massachusetts
Amherst, MA; Measuring Contact
Angles on Super-repellent Surfaces
with a Consistent Accuracy

10:05-10:35: Chang-Hwan Choi;
Department of Mechanical Engineering,
Stevens Institute of Technology, Castle
Point on Hudson, Hoboken, NJ 07030,
USA; Spontaneous Spreading of a
Droplet on a Solid Surface: the
Fundamental Role of Advancing
Contact Angle

10:35-10:55: COFFEE BREAK

10:53-11:25: Umesh Marathe and
Jayashree Bijwe; ITMMEC, Indian
Institute of Technology, Delhi INDIA;
Exploitation of Contact Angle
Measurement Technique to Quantify
the Removal Process of Sizing Agent
on Graphite Fibres

11:25-11:55: Prashant Pendyala, Hong
Nam Kim, Sung-Wook Yang, Il-Joo Cho,
Eui-Sung Yoon; Center for
BioMicrosystems, Korea Institute of
Science and Technology (KIST), Seoul
02792, Republic of KOREA; Directional
Wetting Transitions During
Evaporation on Microcavity Surfaces

11:55-12:25: Edward Bormashenko;
Ariel University, Engineering Faculty,
Chemical Engineering, Biotechnology and
Materials Department, P.O.B. 3, 40700,
Ariel, Israel; Plasma Treatment of
Silicone Oil-Infused Surfaces Switches
Impact of Water Droplets from
Bouncing to Tanner-Like Spreading

12:25-2:00: LUNCH

SESSION II: WEDNESDAY JUNE 13, 2018

2:00-2:30: Hongyao Geng and Sung
Kwon Cho, Department of Mechanical
Engineering and Materials Science,
Swanson School of Engineering, University
of Pittsburgh, 538G Benedum Hall,
Pittsburgh, PA 15261; Integration of
Liquid Infused Porous Surface (SLIPS)
with Electrowetting and Liquid
Dielectrophoresis

2:30-3:00: Kaiwu Huang and Roe-Hoan
Yoon; Center for Advanced Separation
Technologies, Virginia Tech, Blacksburg,
VA 24061; Hydrophobic Forces in
Wetting Films: Measurement and
Thermodynamic Analysis

3:00-3:30: Edward Bormashenko and Mark Frenkel; Ariel University, Engineering Faculty, Chemical Engineering, Biotechnology and Materials Department, P.O.B. 3, 407000, Ariel, ISRAEL; Magnetic Field Inspired Contact Angle Hysteresis Drives Floating Polyolefin Rafts

3:30-4:00: Nicola Realdon and Davide Rossi; Department of Pharmaceutical and Pharmacological Sciences, University of Padova, ITALY; Evaluation of *in Vitro* and *in Vivo* Drug Release and Skin Absorption after the Treatment with Formulations for Topical Use by Contact Angle Method.

4:00-4:20: COFFEE BREAK

4:20-4:50: Jure Zigon, Marko Petric and Sebastian Dahle; University of Ljubljana, Biotechnical Faculty, Department of Wood Science & Technology, Jamnikarjeva 101, 1000 Ljubljana, SLOVENIA; Wettability of Wood Surfaces with Waterborne Acrylic Lacquer Stains Adjusted by DBD Plasma in Air at Atmospheric Pressure

4:50-5:20: Katerine Vega, Matthew Cocca, Han Le, Marc Toro, Anthony Garcia, Andrew Fleischer, Joel Shertok, Michael Mehan, Surendra K. Gupta, and Gerald A. Takacs; School of Chemistry and Materials Science, Rochester Institute of Technology, Rochester, NY, USA; Enhancing the Wettability of Polybenzimidazole (PBI) to Improve Fuel Cell Performance

5:20-5:50: Edward Bormashenko; Ariel University, Engineering Faculty, Chemical Engineering, Biotechnology and Materials Department, P.O.B. 3, 40700, Ariel, Israel; New Investigations of Self-Propulsion: Self-Propelled Rotator Driven by the Marangoni-Flow

5:50-6:20: Dong Song, Youhua Jiang, Tsengming Chou, Kaustubh Asawa, and Chang-Hwan Choi; Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, NJ, USA; Water Droplet Impact and Freezing on an Extremely Cold Surface

SESSION III: THURSDAY JUNE 14, 2018

8:30-9:00: Matti Hokkanen, Q. Zhou, R.H.A. Ras; Aalto University, FINLAND; Droplet Adhesion Measurements in the Wetting Characterization of Topographically Complex, Repellent Surface

9:00-9:30: Youhua Jiang, Yujin Sun, Jaroslaw W. Drellich, and Chang-Hwan Choi; Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, New Jersey 07030, USA; Droplet Adhesion on Patterned Hydrophobic Surfaces in a Fakir State: Topography-Dependent Effective Contact Line

9:30-10:00: Chang-Jin "CJ" Kim and Tingyi "Leo" Liu; Micro and Nano Manufacturing Lab; California NanoSystems Institute, Mechanical and Aerospace Engineering Department; Bioengineering Department, University of California, Los Angeles (UCLA); Generalized Dynamic Cassie-Baxter Model

10:00-10:30: Hy Bui; Applied Research, R&I, 111 T, Terminal Ave, Clark 07066, LOREAL USA; *in Vitro* Evaluation Long Lasting Property of Cosmetic Products by Contact Angle Measurement

10:30-10:50: COFFEE BREAK

10:50-11:20: Antonio Bettero and [Davide Rossi](#); Department of Pharmaceutical and Pharmacological Sciences, University of Padova, ITALY; From a Tensiometric Versus Skin (TVS) Modeling to TVS Skin Test

11:20-11:50: [Manuel Chamerois](#); SCR/R&D, TOTAL E&P - Avenue Larribau, 64018 Pau Cedex - FRANCE; Oil Reservoir Wettability Specificities

11:50-12:20: [Meenakshi Annamalai](#) and T Venkatesan; Nanoscience and Nanotechnology Institute (NUSNNI) – Nanocore, 5A Engineering Drive 1, T-Lab Building, National University of Singapore, Singapore 117411; On the Nature of Wettability of Rare-Earth Oxide Thin Films

12:20-2:00: LUNCH

SESSION IV: JUNE 14, 2018

2:00-2:30: [Frank M. Etzler](#); School of Pharmacy, Lake Erie College of Osteopathic Medicine, 1858 W. Grandview Blvd., Erie, PA 16509; Statistical Considerations for the Determination of Surface Free Energy Components Using Contact Angles and Inverse Gas Chromatography

2:30-3:00: [P. Cherukupally](#), A. Kondor, D. R. Williams, A. M. Bilton, and C. B. Park; University of Toronto, 5 Kings College Rd, Toronto M5S 3G8 - Ontario - CANADA; Inverse Gas Chromatography for Porous Media Characterization: Surface Heterogeneity and Surface Energy Profiles

3:00-3:30: [Davide Rossi](#), Paola Pittia, Nicola Realdon; Department of Pharmaceutical and Pharmacological Sciences, University of Padova, ITALY; Determination of the Surface Free Energy of Water Solutions by Solid like Method

3:30-4:00: [J. Lawrence](#) and D.G. Waugh; School of Mechanical, Aerospace and Automotive Engineering, Faculty of Engineering, Environment and Computing, Coventry University, Gulson Road, Coventry, CV1 2JH, UK; Surface Engineering for the Control of Polyethylene Terephthalate (PET) Wettability Characteristics Using Laser Beam Wavelength

4:00-4:20: COFFEE BREAK

4:20-4:50: Wilfried Konrad, Christoph Neinhuis, Jörg Adam and Siegfried Konietzko; Technische Universität Dresden, Institute for Botany, Zellescher Weg 20 B, 01062 Dresden, GERMANY; To Melt or Not to Melt - High Temperature Application Based on Structured Surfaces

4:50-5:20: [Daniel Lewis](#); Materials Research Center, Room 110, Rensselaer Polytechnic Institute, 110 8th Street, Troy, NY 12180; A Framework to Study Heterogeneous Factors that Influence Grain Growth

5:20-5:50: Aleksey Baldygin, Ryan Baily, Ali-Reza Salehi, Muhammed Khan, Md Farhad Ismail, Megnath Ramesh, Nigel [Rodrigues](#), [Thomas](#), [Prashant R. Waghmare](#); Interfacial Science and Surface Engineering Lab (ISSELab), Department of Mechanical Engineering, University of Alberta, Edmonton, CANADA, T6G 2G8; Drop Deposition Technique under Microgravity Conditions: from Concept to the Working Model

5:50-6:20: A. Irannezhad, M. A. Nobakhti, N. Momtaheni, M. H. Fereydoni, S. F. Chini; Mechanical Engineering Department, University of Tehran, Tehran, IRAN; Huge Enhancement of Lift to Drag Ratio of Hydrofoils Using Piecewise Wettability Change

SESSION V: FRIDAY JUNE 15, 2018

8:30-9:00: Kevin Golovin; Faculty of Applied Science, School of Engineering, UBC-Okanagan EME 4271, CANADA; Designing Durable Icephobic Surfaces

9:00-9:30: Zhiwei Liao; University of Pennsylvania, Chemical and Biomolecular Engineering, Philadelphia PA 19104; Robust Superhydrophilic, Underwater Anti-Oil Fouling Coatings from Spray-coated Assemblies of Polymer Grafted Silica Nanochains

9:30-10:00: Jack Panter; Durham University, Department of Physics, South Road Durham, Durham DH1 3LE UK; Multifaceted Design Optimisation for Superoleophobic Surfaces

10:00-10:20: COFFEE BREAK

10:20-10:50: D.G. Waugh and J. Lawrence; School of Mechanical, Aerospace and Automotive Engineering, Faculty of Engineering, Environment and Computing, Coventry University, Gulson Road, Coventry, CV1 2JH, UK; On the Use of Laser Surface Engineering to Modulate Bacterial Adhesion

10:50-11:20: H. Souzandeh and A. N. Netravali; Dept. of Textiles and Apparel, Cornell University, Martha Van Rensselaer Hall, Room 289, Ithaca NY; Sisal Fiber/Zein Resin Interface: Effect of Plasticizer and Cellulosic Reinforcement

11:20-11:50: Naoto Shiomura, Takashi Sekine and Dehua Yang; Ebatco, 7154 Shady Oak Road, Eden Prairie, MN 55344, USA ; Contact Angle Hysteresis of Pressure Sensitive Adhesives due to Adhesion Tension Relaxation

11:50 PROGRAM CLOSE