

**Sunday, December 11, 2016**

2:00 PM REGISTRATION BEGINS

**SESSION I: SYNTHESIS I****SESSION CHAIR: RICK LAINE**

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4:00 PM	Welcome and Introductory Remarks Organizing Team	
4:15 PM	Siloxanols as Hydrogen-bonding and Supramolecular Catalysts <b><u>Annaliese Franz, University of California, Davis</u></b>	1
4:45 PM	Synthesis and Characterization of Well-Defined Diphenyl-and Methylvinyl-Containing Polysiloxane Copolymers <b><u>Jamie Messman, DoE Kansas City Plant</u></b>	2
5:15 PM	Nanoclay and Polymer Composite Coatings for Superhydrophobic Surfaces <b><u>Joseph Mates, Air Force Research Laboratory</u></b>	3
5:45 PM	Cage Compounds from $\text{Cl}(\text{CH}_2)_n\text{Si}(\text{OEt})_3$ [ $n = 1, 3$ ] and $\text{Cl}_2\text{CHSi}(\text{OEt})_3$ <b><u>Richard Laine, University of Michigan</u></b>	4

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6:15 PM END DAILY SESSION

6:15 PM WELCOME RECEPTION, sponsored by Gelest



**Monday, December 12, 2016**

7:00 AM **CONTINENTAL BREAKFAST**

**SESSION II: SURFACE CHEMISTRY**

**SESSION CHAIR: ANDREW GUENTHNER**

8:00 AM	Surface Modification of Structured Surfaces via Initiated Chemical Vapor Deposition <b><u>Malancha Gupta, University of Southern California</u></b>	5
8:30 AM	Surface Engineering with Thiol-Ene Photopolymerization <b><u>Derek Patton, University of Southern Mississippi</u></b>	6
9:00 AM	Facile Creation of Superamphiphobic, Superoleophilic/Superhydrophobic and Superoleophobic/Superhydrophilic Surfaces by using Fluoroalkyl end-capped Vinyltrimethoxysilane Oligomer <b><u>Hideo Sawada, Hiroasaki University JAPAN</u></b>	7
9:30 AM	Poly(dimethylsiloxane) Surfaces: "sticky and slippery" Wetting Behavior of Addition Cured Silicones and Quaternary Modification of a Condensation Cured Silicone <b><u>Chenyu Wang, Virginia Commonwealth University</u></b>	8

10:00 AM **BREAK**

**SESSION III: SURFACE PHYSICS**

**SESSION CHAIR: ANISH TUTEJA**

10:15 AM	Water Structuring in Bio-Inspired Glycopolymer-Silicone Hydrogels <b><u>Sarah Morgan, University of Southern Mississippi</u></b>	9
10:45 AM	Polybenzimidazole and Sulfonated POSS Composite Membranes for High Temperature Polymer Electrolyte Membrane Fuel Cells <b><u>Claire Hartmann-Thompson, 3M</u></b>	10
11:15 AM	Conformational Effects in Polysilane Chains in Simple Terms: Why Some are sigma-Delocalized and Some are Not <b><u>Josef Michl, University of Colorado at Boulder</u></b>	11
11:45 AM	Tailoring Surface Properties of High Performing Polymers via Chain End Modifications <b><u>Katrina Knauer, University of Southern Mississippi and BASF</u></b>	12

12:15 PM **LUNCH BREAK ON YOUR OWN**

**Monday, December 12, 2016, cont'd**

**SESSION IV: APPLICATIONS I – ENVIRONMENTAL INTERACTIONS**

**SESSION CHAIR: STEVE CLARSON**

4:00 PM	Designing Durable Icephobic Surfaces <b>Anish Tuteja, University of Michigan</b>	13
4:30 PM	Challenges and New Approaches for Aging & Lifetime Assessment in Complex Polysiloxane Composite Materials <b>James Lewicki, Lawrence Livermore National Laboratory</b>	14
5:00 PM	Synthesis and Application of Silicone Copolymers using Photoiniferter and other Silicone Macromers <b>Ramesh Kumar, 3M</b>	15
5:30 PM	<b>BREAK</b>	

**SESSION V: SURFACE STRUCTURE**

**SESSION CHAIR: RICK LAINE**

5:45 PM	An Overview of Direct Ink Write Additively Manufactured Silicone Microarchitected Materials <b>Thomas Wilson, Lawrence Livermore National Laboratory</b>	16
6:15 PM	MQ Silicones: Synthesis, Modification, and Application <b>Daniel Flagg, University of Massachusetts, Amherst</b>	17
6:45 PM	Formulation of Silicone Inks for Direct Ink Write <b>Jeremy Lenhardt, Lawrence Livermore National Laboratory</b>	18
7:15 PM	Dual Hierarchical Superomniphobic Coatings Based on Fluorodecyl Polyhedral Oligomeric Silsesquioxane (Fluoro-POSS) and a Fluoroelastomer <b>Quoc Truong, U.S. Army Natick Soldier RDE Center</b>	19
7:45 PM	<b>END DAILY SESSIONS, DINNER ON YOUR OWN</b>	

**Tuesday, December 13, 2016**

7:00 AM CONTINENTAL BREAKFAST

**VI: APPLICATIONS II - BIOMEDICAL**

**SESSION CHAIR: STEVE CLARSON**

8:00 AM	Polymeric Photonic Crystals Templated in Porous Silicon Hosts <b>Michael Sailor, University of California, San Diego</b>	20
8:30 AM	Silicones in Wound Care: Developing New Products <b>Janis Matisons, Silar Laboratories</b>	21

**Tuesday, December 13, 2016, cont'd**

9:00 AM	POSS® Viscoelastic Hemostat <b>Joseph Lichtenhan, Hybrid Plastics</b>	22
9:30 AM	An Overview of New Siloxane Based Dental impression materials - Can they Compete with Scanning? <b>Chris Angeletakis, Proteas Technologies</b>	23

10:00 AM BREAK

**SESSION VII: HYBRIDS AND NANOPARTICLES**

**SESSION CHAIR: ANDREW GUENTHNER**

10:15 AM	Fluoro-Silica Materials: Past, Present, and Future <b>Abby Jennings, United States Air Force Academy</b>	24
10:45 AM	Hybrid Organic Thermosets with Pre-Ceramic Polymers <b>Timothy Pruyn, AFRL Materials and Manufacturing Directorate</b>	25
11:15 AM	Cyclohexasilane (CHS). A Source for Silicon Based Nanorods, Nanowires, Quantum Dots, a Variety of Silicides and 1- Dimensional Polymers <b>Philip Boudjouk, North Dakota State University</b>	26
11:45 AM	Knowledge Transfer Partnership: Collaboratively Producing Organosilicon Materials for the Contact Lens Market and Beyond <b>Elizabeth Smith, Cornelius Specialties and The Open University UK</b>	27

12:15 PM LUNCH BREAK ON YOUR OWN

**SESSION VIII: SYNTHESIS II**

**SESSION CHAIR: JOE MABRY**

4:00 PM	Nanostructured Silica-Surfactant Hybrid Materials Containing Light-Responsive Membrane Proteins <b>Matthew Idso, University of California, Santa Barbara</b>	28
4:30 PM	Moisture Initiated Cure of Cyclic Thiasilanes and Unsaturated Silicon Compounds by Irradiation <b>Jonathan Goff, Gelest</b>	29
5:00 PM	Iono-Supramolecular Silicone Elastomers: In or Out? <b>Francois Ganachaud, CNRS FRANCE</b>	30

5:30 PM POSTER SESSION AND RECEPTION, sponsored by Springer

**SILICON 2016 Best Poster Awards (Two Awards)**, Sponsored by Springer, Awards presented during closing remarks on Wednesday



**Wednesday, December 14, 2016**

7:00 AM CONTINENTAL BREAKFAST

**SESSION IX: FUNCTIONAL MATERIALS****SESSION CHAIR: SCOTT IACONO**

8:00 AM	Preparation of Foamed Silsesquioxanes by Silane Redistribution <b><u>Douglas Loy, University of Arizona</u></b>	31
8:30 AM	Influence of Silica Nanosprings on the Mechanical Properties of 3D Printed ABS Polymers <b><u>Giancarlo Corti, University of Miami (Ohio)</u></b>	32
9:00 AM	Column Separation of Condensed Functionalized Double-decker Shaped Silsesquioxanes <b><u>Andre Lee, Michigan State University</u></b>	33
9:30 AM	Phenylethynyl Silsesquioxanes: Monomer Synthesis, Characterization, Thermolysis, and Thermal Properties <b><u>Timothy Haddad, ERC Incorporated, AFRL</u></b>	34

10:00 AM BREAK

**SESSION X: COATINGS AND DEPOSITION****CHAIR: ANISH TUTEJA**

10:15 AM	Rudiments and Theory of Fluorosilicone Polymers and Fluorosilicone Copolymers <b><u>Stephen Clarson, University of Cincinnati</u></b>	35
10:45 AM	Influence of Silicate Type on the Surface Characteristics of Fluorosilicate/-Poly(Methyl Methacrylate) Mixtures <b><u>Andrew Guenther, AFRL Aerospace Systems Directorate</u></b>	36
11:15 AM	Concluding Remarks and Closing Organizing Team	

11:30 AM MEETING ENDS

**Tuesday, December 13, 2016**

<b><u>Jeffrey Alston</u>, National Research Council/Air Force Research Laboratory</b> Pressure and Heat-Mass Transfer: Applications of Non-Wetting Surfaces in Engineered Applications	1
<b><u>Yoong-Kee Choe</u>, National Institute of Advanced Industrial Science and Technology</b> JAPAN Theoretical Study on Production of Monomeric Si Compounds for Silicone Polymers from Silica	2
<b><u>Kamran Ghiassi</u>, AFRL Aerospace Systems Directorate</b> Crystallographic Analysis of Analogous Silicon-and Carbon-Containing Di(Cyanate Ester)s and Tri(Cyanate Ester)s	3
<b><u>Kevin Greeson</u>, ERC Inc./Air Force Research Laboratory</b> Breakthrough Pressures of Silane-Based Membranes Predicted by the van Oss Three-Component Surface Energy Model	4
<b><u>Ho-Jong Kang</u>, Dankook University KOREA</b> Synthesis and Characterization of Highly Branched Silicon-Containing Cyanate Ester Elastomers	5
<b><u>Takahiro Kosuge</u>, Tokyo Institute of Technology JAPAN</b> Synthesis and Properties of Mechanochromic Polymer/Silica Composites with Dynamic Covalent Mechanophore	6
<b><u>Jason Lamb</u>, ERC Inc./Air Force Research Laboratory</b> Polyhedral Oligomeric Silsesquioxane Diamines as a Methylene Diamine Replacement in PMR-15 Resin	7
<b><u>Kwan-Soo Lee</u>, Los Alamos National Laboratory</b> PDMS-based Ink Development for 3D Printing Applications	8
<b><u>Emeline Lochmaier</u>, United States Air Force Academy</b> Development of New Fluorocyclic-Polyhedral Oligomeric Silsesquioxane Containing Polymers of Varying Architectures	9
<b><u>Joseph Mabry</u>, Air Force Research Laboratory</b> Silsesquioxanes, Structure, and Surface Properties	10
<b><u>Neil Redeker</u>, ERC Inc./Air Force Research Laboratory</b> Effects of Annealing Conditions on Surface Properties of Fluorodecyl POSS/PMMA Blends	11
<b><u>Joanna Wang</u>, University of California, San Diego</b> Polymer Composites of Porous Silicon	12
<b><u>Kun Yan</u>, Donghua University CHINA</b> Synthesis of N,N-Dimethylaminoethyl Methacrylate (DMAEMA) Copolymer and Hydrophilic Studies on Its Surface Coating	13