



PROGRAM

Polycondensation 2018

October 14-17, 2018

Crowne Plaza Old Town Alexandria

Alexandria, Virginia USA



Technical Program

Sunday – October 14

4:00 PM Registration Booth opens

SESSION I

Session Chair: Cor Koning, DSM

5:15 PM **Welcome, History, and Introductory Remarks**

Tim Long, Jim Hedrick, and Hans Kricheldorf

5:30 PM 1. *INVITED*

Manipulating Hierarchy, Mechanics, and Function in Polyurea-Peptide Hybrids

LaShanda Korley, University of Delaware

6:15 PM 2. **Coatings Based on Novel Isocyanate-free Polyurea Dispersions**

Cor Koning, DSM Coating Resins, The Netherlands

6:45 PM 3. *INVITED*

Innovative Polyethers and Polycarbonates for Energy Storage

David Mecerreyes, POLYMAT- University of the Basque Country, Spain

7:30 PM Welcome Reception

Dinner on your own

Monday – October 15

7:00 AM Continental Breakfast

SESSION II

Session Chair: Colleen Scott, Mississippi State University

8:00 AM 4. *INVITED*

Periodic Mesoporous Structured Polyimides

Teruaki Hayakawa, Tokyo Institute of Technology, Japan

8:45 AM 5. **Graphene-polymer Nanocomposites: Nematic vs Isotropic Mixing**

Theo Dingemans, University of North Carolina, Chapel Hill

9:15 AM 6. **Therapeutics for the Treatment of Nosocomial and Mycobacterial Infections**

Jim Hedrick, IBM Almaden

9:45 AM 7. **Accessing Multifunctional All-aromatic Polyimides; Form Follows Function?**

Maruti Hegde, UNC Chapel Hill

10:15 AM Break



SESSION III

Session Chair: Nancy Zhang, Carbon 3D

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- 10:30 AM 8. *INVITED*
A New Era for Hydrocarbon, Solid Polymer Electrolyte Membranes using Polycondensation
Steven Holdcroft, Simon Fraser University, Canada
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- 11:15 AM 9. **Structure-property Relationships of High Molecular Weight Copolyesters containing TMCD Glycol**
Jim Goetz, Eastman Chemical Company
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- 11:45 AM 10. **Reversibly Assembling Polymer Systems**
Chris Wohl, NASA Langley Research Center
-
- 12:15 PM 11. **Biphenyl Derivatives as Monomers for High Performance Polyesters: From Liquid Crystals to High T_g Copolymers**
Timothy E. Long, Virginia Tech
-
- 12:45 PM 12. *INVITED*
(A-B)_nsegmented Copolymers for Additive Manufacturing
Hans-Werner Schmidt, University of Bayreuth, Germany
-
- 1:30 PM
to
6:30 PM
Lunch and Dinner on your own, Afternoon off
~visit the event website for more information on area attractions
- Poster Gallery open for poster set up

SESSION IV

Session Chair: Theo Dingemans, UNC Chapel Hill

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- 6:30 PM 13. **Design in Chemistry and Structure in Mass Additive Manufacturing**
Nancy Zhang, Carbon
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- 7:00 PM 14. **Phosphonated Poly(ethylene terephthalate) Ionomers as Alternative Compatibilizers in PET/MXD6 Blends**
Robert B. Moore, Virginia Tech
-
- 7:30 PM Break
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- 7:45 PM 15. **Polybenzimidazoles for Fuel Cells and Devices**
Brian Benicewicz, University of South Carolina
-
- 8:15 PM 16. **Functional Polycarbonates for Improved Adhesion to Carbon Fibre**
Jan Henk Kamps, SABIC, The Netherlands
-
- 8:45 PM 17. **Adapting Materials from Semiconductor Fabrication: Designing Rheological Modifiers for Engineering Thermoplastics**
Joseph M. Dennis, IBM Almaden
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- 9:15 PM Official Poster Session & Networking Reception



Tuesday – October 16

7:00 AM Continental Breakfast

SESSION V

Session Chair: Chris Wohl, NASA Langley

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| 8:00 AM | 18. | <i>INVITED</i>
Synthesis of Cyclic Polymers by means of Unstoichiometric Suzuki-Miyaura Polycondensation
Tsutomu Yokozawa, Kanagawa University, Japan |
| 8:45 AM | 19. | VOLCAT: A Catalytic Process for the Rapid and Selective Digestion/Depolymerization of Poly(estere)s
Greg Breyta, IBM Almaden Research |
| 9:15 AM | 20. | Crosslinking of Cyclic Olefin Polymer via Thermal Imidization for Transparent Film Formation
Takeo Suga, Waseda University, Japan |
| 9:45 AM | 21. | Sustainable Bio-Based Polymers from Lignin-Derived Precursors
Colleen Scott, Mississippi State University |
| 10:15 AM | | Break |
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SESSION VI

Session Chair: Annie Jackson, Eastman Chemical Company

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| 10:30 AM | 22. | <i>INVITED</i>
Defined Polycondensate-based Architectures through Hetero-functional Coupling Agents
Brigitte Voit, Leibniz-Institut für Polymerforschung Dresden e.V. (IPF), Germany |
| 11:15 AM | 23. | Nonstoichiometric Friedel-Crafts Polycondensation in Superacid Based on Reactivity Change by Protonation-Deprotonation
Kazuya Matsumoto, Akita University, Japan |
| 11:45 AM | 24. | Alternating Copolyamides
Rudy Rulkens, DSM Materials Science Center, The Netherlands |
| 12:15 PM | 26. | High Performance Polyester Polyols for Coating Applications
Martin Rogers, Eastman Chemical Company |
| | 25. | (Lecture Cancellation) |
| 12:45 PM
to
4:00 PM | | Lunch on your own, Afternoon off
~visit the event website for more information on area attractions |



SESSION VII

Session Chair: Joseph Dennis, IBM

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| 4:00 PM | 27. | <i>INVITED</i>
Improving Polybenzimidazoles: Thermally-rearrangede PBI/polyimide Blends as Gas Separation Membranes
Benny Freeman, University of Texas |
| 4:45 PM | 28. | Synthesis and Properties of Polyesters with Monomers from Biobased Sources
Doris Pospiech, Leibniz-Institut für Polymerforschung Dresden e.V., Germany |
| 5:15 PM | 29. | Acid-catalyzed Condensation Reactions for Synthesis of Quaternary Ammonium Polymers and Their Applications in Alkaline Membrane Fuel Cells
Chulsung Bae, RPI |
| 5:45 PM | | Coffee and Crudites Social Hour

Dinner on your own |
| 6:30 PM | | History of Polyesters
S. Richard Turner, VA Tech |
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SESSION VIII

Session Chair: Jan Henk Kamps, SABIC

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| 7:00 PM | 30. | <i>INVITED</i>
Condensation Polymers by Hydrothermal Polymerization
Miriam Unterlass, TU Wien, Austria |
| 7:45 PM | 31. | Synthesis and Properties of Long-chain Branched Condensation Polymers
Mitsutoshi Jikei, Akita University, Japan |
| 8:15 PM | 32. | Multicomponent Reactions for the Synthesis of Aromatic and Heterocyclic Polymers
Catherine Marestin, Université de Lyon, France |
| 8:45 PM | | Evening together
Mia's Italian Kitchen
100 King Street, Alexandria VA
Drink...Food...Networking |
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Wednesday – October 17

7:00 AM Continental Breakfast

SESSION IX

Session Chair: Ryan Mondschein, Virginia Tech

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| 8:00 AM | 33. | <i>INVITED</i>
New Polymers via the Biginelli Reaction
Lei Tao, Tsinghua University, China |
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8:45 AM	34.	Impact of Si-OH Condensation on Surface Science of Pt Catalyzed Hydrosilylation Cured Silicones Ken Wynne, Virginia Commonwealth University
9:15 AM	35.	High Acid Functional Polyesters from Trimellitic Anhydride or Citric acid and Epoxides Paul Buijsen, DSM Coating Resins, The Netherlands
9:45 AM	36.	Cyclic Polyesters via ROPPOC or REP Hans Kricheldorf, University of Hamburg, Germany
10:15 AM	37.	Synthesis of Novel Long Chain Bio-advantaged Polyamides from Biomass Intermediates Zahra Hosseinzadeh-Nik, Iowa State University
10:45 AM		Break

SESSION X

Session Chair: Doris Pospiech, Leibniz-Institut für Polymerforschung Dresden, Germany

11:00 AM	38.	<i>INVITED</i> Expanding The Scope of Perfluoroarene SNAr In High Performance Materials and Nanomedicine Nathaniel Park, IBM Research - Almaden
11:45 AM	39.	Synthesis and Biological Properties of Enzymatically Catalyzed Poly(butylene Succinate)(PBS) Copolymers Miroslawa El Fray, West Pomeranian University of Technology, Poland
12:15 PM	40.	Mechanistic Insight into Silanol Condensation Under Conditions of Rapid Condensate Removal Tom Peterson, Dow
12:45 PM		Closing Remarks, Meeting Adjourns

**Poster Session**

1. **Bioadvantaged Monomers for the Insertion of Targeted Properties in Conventional Polyamides**
Sanaz Abdolmohammadi

2. **Fluorescent Polyimide Films from Aqueous Monomer Salt Solutions**
D. Alonso Cerrón-Infantes

3. **3D Printing of All-Aromatic Polyimides via UV-Assisted Direct Ink Write**
Gayan Appuhamillage

4. **Isocyanate-free Melt Polycondensation of PDMS-based Polyureas, Utilizing Urea as a Monomer**
Mark Cashman

5. **Non-Isocyanate Poly(amide-hydroxyurethane)s from Sustainable Resources**
Xi Chen

6. **Tailoring CPD-MI Diels-Alder Chemistry to Effect Thermal Reversibility in Segmented Aromatic Condensation Polymers**
Paul Deck

7. **Synthesis and Characterization of Semi Aromatic Polyethers Comprising Tetrahydrofurane Dimethanol**
Sarah Degras

8. **Aromatic Copolyesters Modified with Neopentyl Glycol and 1,4-Cyclohexanedimethanol**
H. Eliot Edling

9. **Mechanical Reinforcement of a Liquid Crystal Polymer with Liquid Crystal Graphene Oxide**
Ryan Fox

10. **Polyimide Networks by Hydrothermal Polymerization**
Patrick Fritz

11. **Synthesis of a Novel Fully Aromatic Liquid Crystalline Polyester Utilizing a Kinked 3,4' Bibenzoate**
Katherine Heifferon

12. **Synthesis and Characterization of Polymer Composed of Oxazaborine Unit in Main Chain**
Kaori Igarashi

13. **Transparent Poly(amide-imide)s with a Low Coefficient of Thermal Expansion**
Sang Youl Kim



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14. Preparation of Polyimide Composite Films Using the Soft-Template Method and Introduction of Mesopores by Ozonolysis
Takahiro Komamura
-
15. Synthesis of Copolyesters with Ferulic Units
A. Korwitz
-
16. Synthesis of Phosphorus-containing Polyesters to Improve the Flame Retardancy of PBT and PBS
J. Lenz
-
17. Green Synthesis and Characterization of Polyimides Derived from Extensively Fused Aromatic Monomers
Lukas Leutgeb
-
18. Structure-property Relationships of (co)polyester Bibenzoate Regioisomers
Ryan Mondschein
-
19. Synthetic Study of Amide Kekulene
Daisuke Nakagawa
-
20. Multiblock Copolymers for Recycling Polyolefin-Polyester Multilayer Film
Keiichiro Nomura
-
21. Convergence of Ionenenes with Ultra-High-Performance Condensation Polymers
Kathryn O'Harra
-
22. End-functionalization of Polyester by Means of Transesterification of Cyclic Polyester, obtained by A2 + B2 Polycondensation, with Diester
Ryouichi Okabayashi
-
23. Synthesis and Characterization of Complex Copolymer Architectures based on Polystyrene Macromonomers incorporated in a Step Growth Polymerization
Antonella Pagliarulo
-
24. Durable High Polymer Content m/p PBI Polybenzimidazole Membranes for Extended Life-time Electrochemical Devices
Andrew Pingitore
-
25. Control of the Molar Mass of Polyimides Prepared from Nylon-salt-type Monomers
Alain Rousseau
-
26. Synthetic Study of Helicene Analogue via Aryne: Model Reactions
Shunsuke Sekine
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27. Biodegradable Sugar-derived Polyesters with Controlled Architectures
Ekaterina Slavko
-
28. Urea as a Monomer: Synthesis of Isocyanate-free, Segmented PTMO-based Polyureas
B. Tyler White
-
29. Sugar-Derived Poly(β -thioester)s as a Biomedical Scaffold
Emily Wilts
-
30. Probing the Effect of Ionic Interactions on Long-Chain Branched Polyetherimides
Josh Wolfgang
-
31. Biobased Poly(ethylene-2,5-furanoate): Structure, Properties and Performance as a High Barrier Polyester
Bahar Yeniad
-
32. Synthesis of Cyclic Trimer of Brominated *p*-(Alkylamino)benzoic Acid and Its Conversion to Coronene Analogue
Akihiro Yokoyama
-
33. Synthesis and Structure-Property Relationships of Sulfonated All-Aromatic Polyamides
Anna Fraser
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34. Room Temperature Extrusion 3D Printing of Polyether Ether Ketone Using a Stimuli-Responsive Binder
Chang-Uk Lee
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