Guide

Section colors
- General Information
- Technical Program

Each poster has a unique number.
M001
T001
W001

M Monday
T Tuesday
W Wednesday
001 Poster number

The scientific program section is ordered by day with parallel sessions.

The index is listed in alphabetical order by surname. The index provides the page number(s) for all presenting authors. The page number can be used to look up further details of the author’s oral or poster presentation in the scientific program.

Please note that the program was correct at the time of printing and is subject to change.

Titles, author names, and affiliations are in the format supplied by the author.

Conference Headquarters

The IUPAC conference headquarters are located in Torgersen Hall, Room 1100 (1st Floor). Registration and information stations are housed in this area.

The conference headquarters are open during the following hours:

- Sunday, June 24: 9:00 a.m. – 9:00 p.m.
- Monday, June 25: 7:00 a.m. – 7:00 p.m.
- Tuesday, June 26: 8:00 a.m. – 5:00 p.m.
- Wednesday, June 27: 8:00 a.m. – 5:00 p.m.
- Thursday, June 28: 8:00 a.m. – 5:00 p.m.
- Friday, June 29: 8:00 a.m. – 12:00 noon

*Note: Must wear name badge for admission to all events.*

Lost and Found

The lost and found area will be housed in the Conference Headquarters location.

Refillable Water Bottle

A refillable water bottle has been provided for each participant. A number of refill stations are located on the Virginia Tech campus. See page 15 for more information.
Dear Colleagues,

On behalf of the administration, faculty, staff, and students at Virginia Tech, we welcome you to the 2012 IUPAC World Polymer Congress MACRO2012 on our beautiful campus in Southwest Virginia. Virginia Tech and our Macromolecules and Interfaces Institute are honored with the gracious invitation from the IUPAC to continue the USA tradition of locating this prestigious international Congress at a leading university. It is our intention that the 2012 Congress reflects the profession, passion, and scientific vision of the global polymer community, and we welcome our many guests who have traveled great distances to contribute to the success of the Congress. The Congress provides an international forum for scientific discovery, professional networking, research collaboration, interdisciplinary education, and dissemination of our most recent scientific advances. Our technical program consists of over 1300 presentations with programming leadership from leading international scientists as symposia co-organizers from across the globe. The program includes 59% international presenters from 52 different countries. The eleven plenary speakers provide a rich diversity of science and culture, as we collectively envision scientific paradigms for emerging technologies.

Our campus is open to the global polymer community and we are thankful for your many contributions to the success of the interdisciplinary program. Now is the time for the entire polymer community to gather and synergistically address the many challenges that we face including energy, sustainability, healthcare, security, and emerging polymer technologies.

We welcome you to Virginia Tech!

Sincerely,

Timothy E. Long
Organizing Committee Chair
IUPAC MACRO 2012
Virginia Tech

Virginia Tech is hosting IUPAC MACRO 2012:
World Polymer Congress, June 24 - 29, 2012. MACRO2012.org
June 2012

Dear Participants of the 2012 IUPAC World Polymer Congress MACRO2012,

On behalf of Virginia Tech and the surrounding community, I am very happy to welcome the International Union of Pure and Applied Chemistry to our campus for the 2012 World Polymer Conference.

With more than 30,000 students and $450 million annually in research expenditures, Virginia Tech is one of the top research universities in the U.S. Our Macromolecules and Interfaces Institute is also one of the top programs in the country with over 50 faculty and 120 graduate students involved in various aspects of polymer science and engineering. The University has remained committed to this leadership position since the program’s inception in the mid-1970s. Thus, with this commitment, we are very honored to have been selected as the host for this prestigious international conference.

Your conference theme, “Enabling Technologies for a Safe, Sustainable, Healthy World,” is both compelling and laudable as it encompasses critical issues facing our global society. Your vast knowledge is essential to resolving these complex issues.

I know that the local planning committee has worked hard to put together outstanding speakers from across the globe, including Nobel laureate Robert Grubbs. We welcome all these renowned scholars to our campus to share their great knowledge and insights. In all, more than 1,200 polymer scientists will be offering presentations or posters highlighting their contributions to this exciting field of research.

When you are not engaged in the conference proceedings, we hope you can also take advantage of some of the many cultural and natural attractions in the region – from the international Vocal Arts and Music Festival being conducted on campus to the beauty of our surrounding mountains and valleys. We believe that you will find not only wonderful sights and sounds, but some of the warmest and friendliest people anywhere.

Again, welcome to Virginia Tech and best wishes for a highly successful meeting and an enjoyable visit.

Sincerely,

Charles W. Steger
President
Virginia Tech
Dear Colleagues,

Welcome to MACRO 2012, the 44th IUPAC World Polymer Congress.

On behalf of the IUPAC Polymer Division, I would like to thank Tim Long, the main organizer of this major conference, together with his colleagues at Virginia Tech for putting together the excellent scientific and social program. The World Polymer Congress series is the flagship activity under the responsibility of the IUPAC Polymer Division. We are thus extremely grateful to Tim and his colleagues for taking the burden on their shoulders of organizing this world-leading polymer conference. We are highly confident that MACRO 2012 will be very well attended and will draw further attention to polymer chemistry in its important role of service to society. Polymer materials are key components in modern technology and largely help to improve the quality of life.

Let me take this opportunity to write a few words about the IUPAC Polymer Division. In addition to sponsoring international conferences, the Polymer Division has a strong educational program and is very active in establishing accepted terminology. Further activities focus on the improvement of polymer chemistry in less favoured nations. The activities of the Polymer Division are carried out through subcommittees, e.g., on polymer terminology, on education, on structure and properties of commercial polymers, on developing polymer materials, and on modelling of polymerization kinetics and processes. The work is primarily carried out within individual projects. I would like to invite you to familiarize yourselves with the many aspects of our work and, more importantly, to join our efforts.

The IUPAC Polymer Division has contributed to the International Year of Chemistry, including an essay and video competition on “Life without Polymers”. Moreover, the Polymer Division has successfully cooperated with funding agencies on an international funding call to establish best practices in multi-country, collaborative research programs.

I hope that you will very much enjoy MACRO 2012.

Best regards

Michael Buback
WELCOME FROM THE MAYOR OF BLACKSBURG

On behalf of the citizens of Blacksburg, I wish to extend a warm welcome to you as you participate in the 2012 International Union of Pure and Applied Chemistry World Polymer Conference at Virginia Tech.

Blacksburg is a unique town with academic, technological, and cultural opportunities that continue to be recognized on a national level. Established in 1798, Blacksburg’s historic roots play a role in the town’s respect for people, history, and tradition. We are the largest town in Virginia, with a population of more than 43,000 occupying 20.5 square miles, and we are proud to be the home of Virginia Tech.

The presence of the surrounding mountains supports Blacksburg’s identity as a refreshingly scenic town with an appropriate measure of rural countryside. Residents and visitors alike can continuously rediscover a blend of the past with the dynamic present as Blacksburg proudly carries on its role as a Special Place.

We encourage you to experience for yourself all of the town’s wonderful offerings. Enjoy your stay, visit our shops and restaurants, take advantage of the coupons provided to you by our local merchants, and sample the uniquely balanced lifestyle that defines the campus and the town.

Have a great time, enjoy your workshop, and please visit us again!

Ron Roddam  
Mayor
Virginia Tech

Dedicated to its motto, Ut Prosim (That I May Serve), Virginia Tech takes a hands-on, engaging approach to education, preparing scholars to be leaders in their fields and communities. As the commonwealth’s most comprehensive university and its leading research institution, Virginia Tech offers 215 degree programs including 65 undergraduate bachelor programs and 150 doctoral and masters programs to more than 30,000 students studying in eight colleges and the graduate school. The university manages a research portfolio of more than $450 million which ranks it 47th among US research universities. A successful and growing corporate research center with over 50 companies and 2000+ employees stands next to the university. The university fulfills its land-grant mission of transforming knowledge to practice through technological leadership and by fueling economic growth and job creation locally, regionally, and across Virginia.

Macromolecules and Interfaces Institute

Macromolecular science and engineering have been active interdisciplinary research and education activities at Virginia Tech for over forty years originating with the efforts of international recognized faculty members Jim McGrath, Tom Ward, Jim Wightman, and Garth Wilkes. Over the years five separate centers were formed to promote the science and engineering of macromolecules and to interface with the external scientific and industrial communities. Shifting research and industrial frontiers in polymer science and engineering, led Virginia Tech to reorganize and consolidate this world respected effort into a single entity, the Macromolecules and Interfaces Institute (MII) at Virginia Tech—a University Research Center—in 2004. MII consists of an interdisciplinary group of 50 faculty members representing five colleges and 14 departments with approximately 120 graduate students across campus doing research in some aspect of polymer science and engineering. Over 40 Ph.D. students are enrolled in an interdisciplinary Ph.D. program in Macromolecular Science and Engineering. MII has the goals of fostering a dynamic research and education environment that enthusiastically promotes the recruitment and education of high-quality graduate students, facilitating and promoting world-class interdisciplinary research in polymer science and engineering, and pursuing continuing education and economic growth through communications and outreach activities with industry and government agencies.
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- Flash drives provided by Eastman Chemical Company
- Biodegradable bags provided by ACS Publications (ACS MacroLetters, BioMacroMolecules, & Macromolecules)
- Refillable water bottles provided by Virginia Tech co-sponsors
Water Refill Stations

Virginia Tech is proud to be a leader in campus sustainability. The University has been named one of 16 colleges to The Princeton’s Review 2012 Green Rating Honor Roll, meaning Virginia Tech achieved the highest possible score in its Green Rating tallies.

As part of Virginia Tech’s commitment to sustainability we are proud that colleges, centers, and departments across the university provided financial support to provide each participant with a refillable water bottle for use during the week.

Refilling stations are available in several buildings around the Virginia Tech campus. These stations are noted on the map on page 20. By using these water refill stations, the IUPAC World Polymer Congress is eliminating 15,000 water bottles. Thank you for your contribution to sustainability!

Station Locations:

- **Burruss Hall** – 2 located on the second floor
- **East Ambler Johnston** – 1 located in the first floor lobby/atrium next to the fitness center, 1 on second floor, 1 on third floor
- **Graduate Life Center at Donaldson Brown** – 1 located on the bottom floor right next to the Ladies Restroom.
- **Library** (2 stations)
  - 1st floor next to public restrooms
  - located in the Torgersen Tower that is attached to Newman Library. From Torgersen Hall, cross the bridge, pass through the Library gate and the refill station will be on your right. This can also be accessed via the 4th floor of Newman Library, heading towards the bridge.
- **Squires Student Center** (9 stations)
  - 5 located on the first floor
  - 3 located on the second floor
  - 1 located on the third floor

Continental Breakfast and Refreshment Breaks

A complimentary continental breakfast will be provided each morning (Monday, June 25 – Friday, June 29) from 7:00 a.m. – 8:00 a.m. in the Commonwealth Ballroom in Squires Student Center.

Visit Commonwealth Ballroom in Squires Student Center and the Refreshment Tent located outside of Torgersen Hall for refreshment breaks at the following times:

- **Squires Student Center**
  - Monday, June 25 – Thursday, June 28
  - 10:00 a.m. – 10:30 a.m. and 3:30 p.m. – 4:00 p.m.

- **Torgersen**
  - Monday, June 25 – Thursday, June 28
  - 8:00 a.m. – 5:00 p.m.

Dietrick Dining Hall (D2)

Meals for attendees who purchase a meal plan will be served in Dietrick Dining Hall, also known as D2. Please see map on page 20 for location of the dining facility. Please be sure you have the dining card you received upon check-in with you to pay for your meals.

D2 is a state-of-the-art facility that combines all-you-care-to-eat dining with a variety of an international marketplace.

Meals are available during the following hours:

- Breakfast is served from 7:00 a.m. – 9:30 a.m.
- Lunch is served from 12:30 p.m. – 2:00 p.m.
- Dinner is served from 4:30 p.m. – 7:00 p.m.

If you would like to purchase a meal plan, you may do so on Sunday, June 24 (9:00 a.m – 9:00 p.m.) or Monday, June 25 (8:00 a.m – 12:00 noon) at the Conference Headquarters desk.

You may also purchase individual meals at D2 (cash only).

- Breakfast – $6.95
- Lunch – $9.92
- Dinner – $11.97

Refreshment tent partially supported by the Poly and PMSE Divisions of the ACS.
**Campus Wireless Internet**

Wireless internet access is available to congress attendees who set up an account prior to their arrival on campus. If you have not set up your account, please visit conference headquarters for information.

**Internet Cafes**

Need to use a computer or check your email? Visit one of our Internet Cafes, Torgersen 1010 or 1080. These labs are available each day for conference attendees.

When using these computers, please use the following login and password:

Login: student
Password: stpassWD

**Emergency Information**

Dial 911 to report an emergency. If dialing from your cell phone, your call will go to area law enforcement agency. When this occurs tell the dispatcher that you are on the Virginia Tech Campus and ask to be transferred to the Virginia Tech Police Department.

Virginia Tech Police Department: (540) 231-6411. All campus telephones and call boxes will connect you directly to the Virginia Tech Police Department Dispatch Center.

**Emergency Phones**

There are 62 Blue Lighted phones located throughout the Blacksburg campus and parking lots. These phones provide immediate access to the campus emergency operator; follow directions on phone.

**Local Bank/ATM Information**

The following banks are located in the Blacksburg area:

- **BB&T**
  902 Prices Fork Road • (540) 808-1200 • Branch & ATM

- **Bank of America**
  1900 South Main Street • (540) 951-7170 • Branch & ATM
  Squires Student Center (First Floor), Virginia Tech Campus • ATM

- **First Citizens Bank**
  1322 South Main Street • (540) 961-6212 • Located inside the Kroger grocery store • Branch & ATM

- **Freedom First Credit Union**
  Squires Student Center (First Floor), Virginia Tech Campus • Branch & ATM

- **National Bank**
  100 South Main Street • (540) 951-6205 • Branch & ATM
  3600 South Main Street • (540) 951-6246 • Branch
  900 Heathwood Boulevard • (540) 951-6204 • Branch & ATM
  Johnston Student Center (First Floor), Virginia Tech Campus • ATM

- **StellarOne**
  601 North Main Street • (540) 951-0180 • Branch & ATM
  2280 Kraft Drive • (540) 381-6702 • Branch & ATM

- **Suntrust Bank**
  220 South Main Street • (540) 961-1613 • Branch & ATM
  903 University City Boulevard • (540) 552-3600 • Located inside the Kroger grocery store • Branch & ATM
  Squires Student Center (First Floor), Virginia Tech Campus • ATM
  University Bookstore, Virginia Tech Campus • ATM
  The Inn at Virginia Tech • ATM

- **Wells Fargo**
  200 North Main Street • (540) 552-4211 • Branch & ATM
  920 University City Boulevard • (540) 951-7100 • Branch & ATM
  Squires Student Center (First Floor), Virginia Tech Campus • ATM
  University Bookstore, Virginia Tech Campus • ATM

**War Memorial Hall - Swimming Pool and Fitness Center**

Congress attendees have the option to pay $5 per day for swimming pool and fitness center access located in War Memorial Hall. This fee is paid at the desk on the first floor of the building and covers all-day access. You must bring correct change as we do not accept cash or checks or credit cards, but do provide a generic card (for one time use) and a machine to change your cash to Virginia Tech Hokie Passport Dollars and no change is given.

During the period May 21 through August 3 the locker rooms and shower rooms are undergoing renovation and are not available for use.

The building is open from 6:00 a.m. – 8:00 p.m. Monday through Friday. Saturday and Sunday hours are 12:00 noon – 4:00 p.m.

The War Memorial Hall weight room is open from 6:00 a.m. – 8:00 a.m. and 11:00 a.m. – 7:00 p.m. Monday through Friday. The weight room is open from 12:00 noon – 3:00 p.m. on Saturday and Sunday.

The War Memorial Pool is open for lap swim Monday through Friday from 7:00 – 8:00 a.m. and 11:00 a.m. – 1:00 p.m. Open swim hours are Monday through Friday from 5:30 p.m. – 7:00 p.m. Only up to 5 Conference Attendees may use the pool at any one time. If you would like to reserve the pool as a group at other times you may do so by contacting Sam Van Curen at scuren@vt.edu.

In order to use these facilities, you MUST bring your conference badge and a picture ID for proof of age.

For more information, please visit: http://www.recsports.vt.edu/facilities.
Complimentary Conference Bus Loops

Sunday, June 24
Bus loops will run continuously from the hotels listed below to Squires Student Center starting at 8:00 a.m. with last pick up at The Inn at Virginia Tech and Skelton Conference Center at 11:00 p.m.

Monday, June 25 – Thursday, June 28
Buses will run continuously from the hotels listed below to Squires Student Center starting at 6:30 a.m. with last pick up at Squires Student Center at 10:00 p.m.

Friday, June 29
Buses will run continuously from the hotels listed below to Squires Student Center starting at 6:30 a.m. with last pick up at Squires Student Center at 12:00 noon

Routes:
Orange Route
- Courtyard by Marriott, Blacksburg
- Main Street Inn, Blacksburg
- Campus Dorms
- Torgersen Bridge area (between Squires Student Center/Torgersen Hall)

Maroon Route
- Hampton Inn, Christiansburg
- Holiday Inn NRV Mall, Christiansburg
- Comfort Inn, Blacksburg
- Torgersen Bridge area (between Squires Student Center/Torgersen Hall)

White Route
- Comfort Suites (formerly Hawthorne Suites), Blacksburg
- Hilton Garden Inn, Blacksburg
- Holiday Inn University, Blacksburg
- The Inn at Virginia Tech and Skelton Conference Center, Blacksburg
- Torgersen Bridge area (between Squires Student Center/Torgersen Hall)

See the Bus Loops map on page 18 for routes.

Sunday night and Thursday night only (during the opening reception and the banquet) 5:00 p.m. – 10:30 p.m. stops will be added at Burruss Hall and The Inn at Virginia Tech and Skelton Conference Center on every bus.

Parking
Please note anyone parking on campus must have a parking pass from the university. Parking passes are available at the conference headquarters location in Torgersen Hall. Please see Inside Front Cover for Conference Headquarters hours of operation. Parking enforcement officers will ticket anyone parked on campus without a permit. Please be sure your permit is displayed at all times.

The designated parking area for attendees is the Perry Street Garage as shown on the campus map on page 20.

Shuttles
Return trips to Charlotte, Dulles, and Roanoke may be purchased on Wednesday, June 27 from 10:00 a.m. – 4:00 p.m. at Conference Headquarters.

Cost of return trip
- Charlotte $60
- Dulles $60
- Roanoke $20

Excursions
Tickets will be sold on Monday, June 25 at Conference Headquarters until vehicles are filled for the shopping, tubing, and hiking excursions. See page 86 for details of the excursions.

Industrial Networking for Students and Postdocs
We will facilitate networking opportunities by posting a list in the exhibit hall of companies who are interested in receiving resumes from graduate students and post docs attending the congress.

Please visit the Industrial Networking table in Commonwealth Ballroom, Squires Student Center for companies that are accepting resumes on Monday, June 25 only. Please bring one resume copy for each submission.

A company representative will pick up resumes on Tuesday morning, June 26 and will contact individuals they wish to meet.

Meal Plan
Meal plans may be purchased for D2. See page 15 for details.
Bus Loops Map

To see all the details that are visible on the screen, use the "Print" link next to the map.

Hilton Garden Inn
(1.2 miles from university)

Comfort Suites (formerly Hawthorne Suites)
(1.4 miles from university)

Holiday Inn University
(.9 miles from university)

Main Street Inn
(.5 miles from university)

Courtyard by Marriott
(1.4 miles from university)

Holiday Inn at NRV Mall
(4.5 miles from university)

Hampton Inn
(4 miles from university)

Holiday Inn University
(4.5 miles from university)

Virginia Tech Campus inside blue box (see campus map on page 18)

The Inn at Virginia Tech and Skelton Conference Center

Torgersen Bridge

Campus Dorms
Virginia Tech World Polymer Congress Virginia Tech
To see all the details that are visible on the screen, use the "Print" link next to the map.

Hilton Garden Inn *(1.2 miles from university)*

Comfort Suites *(formerly Hawthorne Suites)* *(1.4 miles from university)*

Holiday Inn University *(.9 miles from university)*

Main Street Inn *(.5 miles from university)*

Courtyard by Marriott *(1.4 miles from university)*

Comfort Inn *(2.7 miles from university)*

Hampton Inn *(4 miles from university)*

Holiday Inn at NRV Mall *(4.5 miles from university)*

Campus Dorms Virginia Tech *(Campus inside blue box see campus map on page 18)*

The Inn at Virginia Tech and Skelton Conference Center

Torgersen Bridge
Campus Map Key

Water Refill Station
Branch and/or ATM
Parking Garage
Emergency Phone

Alphabetical Key
K-7 109 Agnew Hall
M-2 204 Air Conditioning Facility
M-8 032 Ambler Johnston Hall
O-4 368 Architecture Annex
O-4 269 Armory
M-2 196 Art and Design Learning Center
O-6 026 Barringer Hall
J-9 119 Bioinformatics Phase I
J-9 120 Bioinformatics Phase II
K-3 173 Bishop-Favaro Hall
O-3 169 Black Box Theatre
M-3 005 Brodie Hall
L-2 270F Building 270F
K-4 171 Burchard Hall
K-4 193 Burke Johnston Student Center
N-12 183 Burrows/Burleson Tennis Center
L-4 176 Burruss Hall
L-6 036 Campbell Hall
N-8 187 Cassell Coliseum
N-2 188 Center for the Arts
Q-10 241 Central Stores
L-7 112 Cheatham Hall
L-8 038 Cochrane Hall
M-3 270G College of Science Administration Building
K-3 172 Cowgill Hall
O-7 272 Cranwell International Center
J-12 475 Dairy Science Complex
K-5 156 Davidson Hall
K-4 155 Derring Hall
M-7 189 Dietrick Hall (D2)
L-2 126 Durham Hall
M-5 022 Eggleston Hall
L-7 110 Engel Hall
K-10 185D English Field
M-3 013 Femoyer Hall
P-10 240 Fleet Services
J-9 123 Food Science and Technology
L-7 111 Fralin Life Science Institute
I-5 295 Golf Course Clubhouse
O-5 251 Graduate Life Center at Donaldson Brown
L-9 124 Greenhouses
J-7 274 The Grove
J-4 158 Hahn Hall - North Wing
K-5 157 Hahn Hall - South Wing
K-9 124A Hahn Horticulture Gardens
N-7 197 Hahn Hurst Basketball Practice Center
K-3 133C Hancock Hall
L-8 042 Harper Hall
L-10 149C Harry T. Peters Large Animal Clinic
N-12 459 Health and Safety Building
O-3 179 Henderson Hall
K-7 054 Hillcrest Hall
L-3 130 Holden Hall
I-4 250C Holtzman Alumni Center
J-9 381 Human and Agricultural Biosciences Building I
L-6 103 Hutchinson Hall
L-3 129 Institute for Critical Technology and Applied Science (ICTAS)
K-8 116 Institute for Critical Technology and Applied Science II (ICTAS II)
N-8 187B Jamerson Athletic Center
N-6 028 Johnson Hall
M-3 001 Lane Hall
N-9 185 Lane Stadium/Worsham Field
L-7 113 Latham Hall
N-7 030 Lee Hall
K-9 121 Life Sciences I
K-8 118 Litten-Reaves Hall
M-3 007 Major Williams Hall
K-5 151 McCurdy Hall
L-9 191 McComas Hall
O-4 369 Media Annex
P-4 370 Media Building
N-8 187A Merryman Athletic Center
O-6 027 Miles Hall
M-2 203 Military Building
N-2 008 Monteleth Hall
L-8 055 New Hall West
N-6 040 New Residence Hall (East)
N-6 024 Newman Hall
N-4 177 Newman Library
L-4 132 Norris Hall
M-3 201 Old Security Building
N-6 029 O’Shaughnessy Hall
N-5 195 Owens Hall
K-4 153 Pampilin Hall
N-12 455 Parking Services
L-4 127 Patton Hall
M-6 039 Payne Hall
M-6 041 Peddrew-Yates Residence Hall
M-3 175 Performing Arts Building
P-10 242 Police Department
M-2 202 Power Plant
K-6 102 Price Hall
M-7 031 Pritchard Hall
L-3 133 Randolph Hall
N-3 004 Rashe Hall
L-10 186 Rector Field House
J-11 1498 Richard B. Talbot Educational Resources Center
K-5 154 Robeson Hall
L-6 101 Sandy Hall
K-6 106 Saunders Hall
L-7 108 Seitz Hall
N-2 006 Shanks Hall
K-2 136 Signature Engineering Building
I-4 250B Skelton Conference Center
M-6 035 Slusher Hall
L-8 194 Smith Career Center
L-6 105 Smyth Hall
J-6 275 Solitude
O-10 190 Southgate Center
N-4 180 Squires Student Center
P-10 242 Sterrett Facilities Complex
L-8 192 Student Services Building
L-2 170 Surge Space Building
N-12 183 Tennis Center
H-4 250A The Inn at Virginia Tech and Skelton Conference Center
M-2 012 Thomas Hall
M-4 174 Torgersen Hall
L-3 200 Turner Place
N-5 178 University Bookstore
O-5 252 University Club
N-5 025 Vawter Hall
J-11 149 Virginia-Maryland Regional of Veterinary Medicine
G-3 249 Visitor and Undergraduate Admissions Center
K-7 301 Wallace Annex
K-8 115 Wallace Hall
M-4 181 War Memorial Chapel
M-6 182 War Memorial Hall
K-3 134 Whippenmore Hall
J-11 149A William E. Lavery Health Research Center
K-5 152 Williams Hall
M-10 185H Women’s Softball Field
J-5 276 Wright House
Exhibit Location

Commonwealth Ballroom
Squires Student Center

Exhibit hours

Monday – Thursday  7:00 a.m. – 8:00 a.m.
10:00 a.m. – 10:30 a.m.
12:10 p.m. – 1:45 p.m.
3:35 p.m. – 3:50 p.m.
6:10 p.m. – 9:40 p.m. (except Thursday)

Friday       7:00 a.m. – 8:00 a.m.

Industrial Networking

We will facilitate networking opportunities by posting a list in
the exhibit hall of companies who are interested in receiving
resumes from graduate students and post docs attending the
congress.

Please visit the Industrial Networking table in Commonwealth
Ballroom, Squires Student Center for companies that are
accepting resumes on Monday, June 25 only. Please bring
one resume copy for each submission.

A company representative will pick up resumes on Tuesday
morning, June 26 and will contact individuals they wish to
meet.
Sunday, June 24 • 8:30 p.m. – 10:00 p.m.  
Welcome Reception
A welcome reception will be held on Sunday, June 24 starting at 8:30 p.m. immediately following Bill Barker as Thomas Jefferson performance in Burruss Hall. Join the Virginia Tech Hokie Bird on a short walk from Burruss Hall to The Inn at Virginia Tech and Skelton Conference Center for the start of the reception. Shuttle service will also be available to The Inn at Virginia Tech and Skelton Conference Center from Burruss Hall.

Monday, June 25 • 12:15 p.m. – 2:00 p.m.  
The Lyric Theater
Thomas Jefferson portrayed by Bill Barker

Mr. Bill Barker has portrayed Thomas Jefferson in a variety of venues since his first appearance at Independence Hall in Philadelphia in 1984. He has appeared as Jefferson for Colonial Williamsburg, and assists in the development of Jefferson programs for the Foundation. Born and raised in Philadelphia, Bill’s interest in Thomas Jefferson reaches back to his youth. He enjoys researching the American world Jefferson knew with an interest in the role the man played and continues to play in our American identity.

Bill received a Bachelor of Arts, majoring in history, from Villanova University and attended the University of Pennsylvania for a brief time. Attracted to the stage at an early age he became a professional actor, director and producer. He was cast as Jefferson in many different venues including the musical, 1776. Bill is the same height, weight, and general appearance as Mr. Jefferson.

Over the years he has evolved a repertoire of Jefferson presentations tailored to corporate and government audiences, as well as schools, societies and festivals. Bill performed as Jefferson at the White House, the Palace of Versailles and throughout the United States, Great Britain, France and the Las Vegas Strip! He has been featured as Jefferson in several magazines including Time, People, Atlantic, Philadelphia, Southern Living, Reader’s Digest, and the Colonial Williamsburg Journal.

Bill’s work is praised in various newspapers, newsletters and reports, among them those of Thomas Jefferson’s Poplar Forest, Mount Vernon Ladies’ Association, The Remnant Trust, The Jefferson Legacy Foundation and The Colonial Williamsburg Foundation. Bill appeared as Jefferson in programs aired on ABC, NBC, CBS, PBS, CNN, The History Channel, and C-SPAN. He has received commendations from The City of Philadelphia, The City of St. Louis, The City of New Orleans and The Hellenic Ideals Foundation. He enjoys historical research, archaeology and traveling.

Tuesday, June 26 • 8:30 p.m. – 10:00 p.m.  
Castle’s Kettle & Pub
Poly and the Mers will be performing.
Thursday, June 28 • 6:00 p.m. – 8:00 p.m.

Graduate Student Social at the BreakZONE
Squires Student Center

**Graduate Student Gathering at the BreakZONE at Squires**

Come join the graduate students attending the IUPAC meeting for a relaxing evening enjoying appetizers and beverages. Participate in bowling, billiards, darts, or numerous gaming systems, or simply relax in the BreakZONE with graduate students from around the world.

**BreakZONE Features:**
- 17 regular pool tables
- 3 table tennis
- Dart boards
- 8 bowling lanes with unlimited games
- 9 flat screen TVs
- Numerous gaming systems

**Location:** The BreakZONE at Squires Student Center
**Date:** Thursday, June 28
**Time:** 6:00 p.m. – 8:00 p.m.
**Details:** Free catered event with beverages, including beer (All participants wishing to drink beer must have valid I.D. showing minimum age of 21 yr.) Limited to 200 Graduate Students. Must have conference name badge to get in.
Thursday, June 28 • 7:00 p.m. – 10:00 p.m. 

Banquet
The Inn at Virginia Tech and Skelton Conference Center

The conference banquet will be held at The Inn at Virginia Tech and Skelton Conference Center. A social hour will be held from 7:00 p.m. – 8:00 p.m., with the banquet beginning at 8:00 p.m. Please present your pre-purchased banquet ticket, as this is a sold out event. Robert Lang will be the featured speaker, presenting "From flapping birds to space telescopes: Modern science of origami." Dress code for the banquet is business casual. Shuttle service will pick up attendees at The Inn at Virginia Tech and Skelton Conference Center for return to listed hotels, with the last pick-up scheduled for 10:30 p.m.

Banquet Speaker

Robert J. Lang
Alamo, California
http://www.langorigami.com

TITLE: From flapping birds to space telescopes: Modern science of origami

Robert J. Lang is recognized as one of the foremost origami artists in the world as well as a pioneer in computational origami and the development of formal design algorithms for folding. With a Ph.D. in Applied Physics from Caltech, he has, during the course of work at NASA/Jet Propulsion Laboratory, Spectra Diode Laboratories, and JDS Uniphase, authored or co-authored over 80 papers and 45 patents in lasers and optoelectronics as well as authoring, co-authoring, or editing 12 books and a CD-ROM on origami. He is a full-time artist and consultant on origami and its applications to engineering problems but keeps his toes in the world of lasers, most recently as the Editor-in-Chief of the IEEE Journal of Quantum Electronics from 2007-2010. He received Caltech’s highest honor, the Distinguished Alumni Award, in 2009.
DSM Performance Materials Award 2012

Winner: Geoffrey Coates
Cornell University

To be presented on Monday, June 25 during the morning Plenary Session.

sponsored by DSM

Third Polymer International - IUPAC Award 2012 for Creativity in Applied Polymer Science or Polymer Technology

Winner: Ali Khademhosseini
Harvard-MIT’s Division of Health Sciences and Technology (HST); Brigham and Women’s Hospital (BWH) and Harvard Medical School (HMS); Associate Faculty at the Wyss Institute for Biologically Inspired Engineering; Junior Principal Investigator at Japan’s World Premier International - Advanced Institute for Materials Research (WPI-AIMR) at Tohoku University; Harrington fellow at the Biomedical Engineering Department of the University of Texas-Austin

To be presented on Monday, June 25 at the conclusion of the Plenary Lecture at 10:00 a.m.

sponsored by Polymer International, John Wiley & Sons Ltd

Samsung-IUPAC Young Polymer Scientist

To be presented on Tuesday, June 26 at the conclusion of the Plenary Lecture at 10:00 a.m.

sponsored by Samsung Total

Sigma-Aldrich Lecturers

Luis Campos – Columbia University
Christine Luscombe – University of Washington
Anzar Khan – ETH Zürich, Institute f. Polymere

Poster prizes

Winners to be announced Thursday, June 28 at the conclusion of the Plenary Lecture at 10:00 a.m.

sponsored by IUPAC
Recent Developments in Synthesis
Craig J. Hawker, University of California, Santa Barbara, USA
Axel H.E. Mueller, University of Bayreuth, Germany
Eric Drochnermuller, University of Lyon, France

Modern Methods of Characterization
Kathryn L. Beers, National Institute of Standards and Technology, USA
Taihyun Chang, Pohang University of Science and Technology (POSTECH), Korea

Surfaces and Interfaces
Thomas P. Russell, University of Massachusetts, Amherst, USA
Jin Kong Kim, Pohang University of Science and Technology (POSTECH), Korea
Thomas Thurn-Albrecht, Martin Luther Universität Halle-Wittenberg, Germany

Macromolecules and Nanotechnology
Paula T. Hammond, Massachusetts Institute of Technology
Kookheon Char, School of Chemical and Biological Engineering, Seoul National University, South Korea

Macromolecules in Biotechnology and Medicine
Buddy D. Ratner, University of Washington, USA
Julio San Roman Del Barrio, Institute of Polymer Science and Technology, Madrid, Spain

Complex Macromolecular Systems
Timothy P. Lodge, University of Minnesota, USA
Ludwik Leibler, ESPCI Paris Tech, France

Energy, Optics, and Optoelectronics
Stephen Z.D. Cheng, The University of Akron, USA
Yong Cao, South China University of Technology, China

Polymer and Polymer-Based Membranes for Energy and Environmental Applications
Benny D. Freeman, University of Texas at Austin, USA
Aaron Thornton, The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia

Commercial Frontiers
Karl W. Haider, Bayer MaterialScience LLC, USA
Zhen-Zhong Yang, Institute of Chemistry, Chinese Academy of Sciences, China
Maurits van Tol, DSM Netherlands
Marcel Wubbolts, DSM Netherlands

Advances in Interdisciplinary Interactions
David A. Schiraldi, Case Western Reserve University, USA
G. Julius Vancso, University of Twente, The Netherlands
Toshio Nishi, WPI-AIMR Tohoku University, Japan

Polymer Physics
Ralph H. Colby, Pennsylvania State University, USA
Dimitris Vlassopoulos, University of Crete, Greece

DSM-IUPAC Performance Materials Symposium
Vikas Sonak, DSM
Welcoming from Thomas Jefferson

8:00 p.m. – 8:30 p.m.

Mr. Bill Barker has portrayed Thomas Jefferson in a variety of venues since his first appearance at Independence Hall in Philadelphia in 1984. He has appeared as Jefferson for Colonial Williamsburg, and assists in the development of Jefferson programs for the Foundation.

Professor Niyazi Serdar Sariciftci
Johannes Kepler University of Linz, Austria

6:00 p.m. – 7:00 p.m.

TITLE: Organic and bio-organic polymers for sustainable optoelectronics

Professor Sariciftci is Ordinarius Professor for Physical Chemistry and the Founding Director of the Linz Institute for Organic Solar cells (LIOS) at the Johannes Kepler University of Linz, Austria (www.lios.at). He studied at the University of Vienna (Austria) and graduated as Ph.D. in physics in 1989. After two years postdoctoral study at the University of Stuttgart (Germany) he joined the Institute for Polymers and Organic Solids at the University of California, Santa Barbara, USA, led by Prof. Alan J. Heeger, Nobel laureate 2000 for Chemistry. His major contributions are in the fields of photoinduced optical, magnetic resonance and transport phenomena in semiconducting and metallic polymers. He is the inventor of conjugated polymer and fullerene based solar cells. Prof. Sariciftci published over 500 publications, received over 22000 citations (h-index 65), 8 books and educated several academic and industrial scientists. He also initiated seven spin off companies for organic optoelectronics. In his research, Sariciftci focuses on the solar energy conversion into electricity (photovoltaic) as well as into chemical energy using C$_2$$_2$ recycling. He is recipient of several prizes among them the National Science Prize of Turkey 2006 and the Austrian Scientists of the year Prize for Research 2008. He received the Medal for Humanity of the City of Linz 2009 and the Kardinal Prize for Science of the Archbishop in Vienna 2010. He is a Fellow of the Royal Society of Chemistry (FRSC), Fellow of SPIE, and member of several societies such as American Chemical Society, Materials Research Society, Austrian Chemical Society and Austrian Physical Society. In 2011 Sariciftci received honorary doctorate from the Abo Academy in Finland. In a ranking of Institute of Scientific Information (ISI) Sariciftci is ranked #14 of the world’s material scientist top 100 list.

Professor Kazunori Kataoka
The University of Tokyo

7:00 p.m. – 8:00 p.m.

TITLE: Medical innovation through polymer chemistry: Supramolecular structures of block copolymers as smart nanodevices for gene and drug delivery

Kazunori Kataoka is a Professor in the Department of Materials Engineering, Graduate School of Engineering at the University of Tokyo, Japan. He has been Professor of Biomaterials at the Graduate School of Engineering at the University of Tokyo, Japan since 1998. Since 2004, he has been appointed joint position as Professor of the Division of Clinical Biotechnology at the Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, the University of Tokyo. He received B. Eng. (1974) in Organic Chemistry, M.Eng. (1976) and Ph.D. (1979) in Polymer Chemistry from the University of Tokyo. He had held professorships at the Institute of Biomedical Engineering, Tokyo Women’s Medical College (1979-1989) and Department of Materials Engineering at Tokyo University of Science (1989-1998) before joining the faculty of the University of Tokyo in 1998. He was a Visiting Professor at University of Paris XIII, France (1992, 1996), Tohoku University, Sendai, Japan (2007), Ludwig-Maximillians University (LMU), Munich, Germany (2008), and Zhejiang University, Hangzhou, China (2010). He served as the Adjunct Director of the Biomaterials Center at the National Institute for Materials Science (NIMS), Japan from 2001-2004.

He is President of the Society of Polymer Science, Japan (2010-), Vice President of the Controlled Release Society (2010-), Fellow of the American Institute of Medical and Biological Engineering (AIMBE) (1999-) and Fellow of Biomaterials Science and Engineering (FBSE) (2004-). He has received several awards, including the Award of the Japanese Society for Biomaterials (1993), Outstanding Paper Award of the Controlled Release Society (1995), Award of the Society of Polymer Science, Japan (2000), Clemson Award in Basic Research, Society for Biomaterials, USA (2005), Barré Award, University of Montreal (2006), Founder’s Award of Controlled Release Society (2008), NIMS Award, National Institute of Materials Science, Japan (2009), and The Prize for Science and Technology (Research Category), The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, Japan (MEXT) (2010). He has more than 400 publications and is on the editorial board of twelve international journals. He is Editor of Journal of Biomaterials Science, Polymer Edition, Associate Editor of Biomacromolecules (American Chemical Society), and Associate Editor of Biomaterials. His current major research interest is supramolecular materials for nanobiotechnology, particularly focusing on gene and drug delivery.
Monday, June 25

**Professor Robert H. Grubbs**  
*California Institute of Technology*

*8:00 a.m. – 9:00 a.m.*

**TITLE: Controlled synthesis of functional polymers**

Robert H. Grubbs is currently the Victor and Elizabeth Atkins Professor of Chemistry at the California Institute of Technology, Pasadena, California, USA, where he has been a faculty member since 1978. Before moving to Caltech, he was at Michigan State University from 1969 to 1978 achieving the rank of Associate Professor. The research group of Grubbs is involved in the design, synthesis, and mechanistic studies of complexes that catalyze basic organic transformations. The major focus of the group over the past few years has been on the olefin metathesis reaction. To optimize the utility of this reaction, new catalysts have been developed that are extremely tolerant of organic functional groups. Due to their high-activity, functional group tolerance, and ease of use, these ruthenium based catalysts have found wide applications in organic and polymer synthesis. He has 500+ publications and 115+ patents based on his research.


**DSM Performance Materials Award 2012**

**Professor Geoffrey Coates**  
*Cornell University*

*9:00 a.m. – 10:00 a.m.*

**TITLE: New polymers from old monomers: Advances enabled through catalyst design and discovery**

Geoffrey W. Coates, Tisch University Professor of Chemistry and Chemical Biology at Cornell University, Ithaca, NY (USA) has been named as the recipient of the DSM Performance Materials Award 2012 in recognition of his exceptional contributions to the advancement of the materials sciences. The award carries a cash prize of EUR 50,000. A special DSM-IUPAC Performance Materials Symposium will be held in the afternoon.
Tuesday, June 26

**Professor Eugenia Kumacheva**  
*University of Toronto*

8:00 a.m. – 9:00 a.m.

**TITLE:** Building nanopolymers: Lessons from polymer physics and chemistry

Eugenia Kumacheva is Professor of Chemistry at the University of Toronto. She has cross-appointments in the Department of Chemical Engineering and The Institute of Biomaterials and Biomedical Engineering. She received her Ph.D. degree in Physical Chemistry of Polymers at the Institute of Physical Chemistry (Russian Academy of Science) and did her postdoctoral research at the Weizmann Institute of Science and the University of Toronto.

Professor Kumacheva’s research group is involved in several areas of soft matter, including self-assembly, polymers, colloids, thin films, hybrid materials, gels and microfluidics.

Professor Kumacheva has more than 160 publications, 2 books, and 16 patents. Her awards and distinctions include Canada Research Chair in Advanced Polymer Materials, Macromolecular Science and Engineering Award, Fellowship to the Royal Society of Canada, Japan-Canada WISE lectureship, Killam Fellowship, International Chorafas Foundation Award in Physics and Engineering, and L’Oreal-UNESCO Award “For Women in Science”.

Professor Kumacheva serves on Advisory Boards in the Waterloo Institute of Nanotechnology (Canada), Advanced Science Institute (RIKEN) (Japan) and the Brookhaven National Laboratory (USA). She served or serves on the Advisory or Editorial boards of Polymer Bulletin, Soft Matter and Colloid polymer Science.

**Professor Xi Zhang**  
*Tsinghua University*

9:00 a.m. – 10:00 a.m.

**TITLE:** Single-molecule force spectroscopy and polymer interactions

Xi Zhang is a full professor of the Department of Chemistry, Tsinghua University, Beijing, China. His research interests are focused on superamphiphiles, supramolecular polymers, Se-containing polymers, polymer thin films and single-chain polymers. He is senior editor of Langmuir and has served as Editorial Board Members of several journals, including Chemical Communications, Polymer and Polymer Chemistry. In 2007, he was selected as a member of Chinese Academy of Sciences. Since 2010, he is vice president of Chinese Chemical Society.
Wednesday, June 27

Professor Jean M. J. Fréchet  
University of California, Berkeley, and  
King Abdullah University of Science and Technology

8:00 a.m. – 9:00 a.m.

TITLE: Starting a 21st century science and technology university: The KAUST model

Jean Fréchet was born in France and received his first university degree at the Institut de Chimie et Physique Industrielles (now CPE) in Lyon, before moving to the US to earn Ph.D. degrees in organic and polymer chemistry from the State University of New York and from Syracuse University. He joined the Chemistry Faculty at the University of Ottawa in Canada in 1973 then moved to Cornell University in 1987 as the IBM Professor of Polymer Chemistry and Peter J. Debye Chair of Chemistry. In 1997, Jean Fréchet joined the faculties of Chemistry and of Chemical Engineering at the University of California, Berkeley, later being named Henry Rapoport Chair of Organic Chemistry and a Scientific Director of the Molecular Foundry, Lawrence Berkeley National Laboratory. He currently serves as Vice President Research at KAUST (King Abdullah University of Science and Technology) in the Kingdom of Saudi Arabia. A member of the US National Academy of Science and the US National Academy of Engineering, he is the author of about 900 research publications with over 50,000 citations (H 116) and the recipient of about 80 US patents. His research at the interface of organic and polymer chemistry is directed towards functional macromolecules, their design, synthesis, and applications.

Professor Bernadette Charleux  
University Claude Bernard in Lyon, France  
Laboratory for the Chemistry and Processes of Polymerization, France

9:00 a.m. – 10:00 a.m.

TITLE: Polymer synthesis in water: Recent developments and challenges

Bernadette Charleux received a Ph.D. degree from the University Claude Bernard in Lyon, France, under the supervision of Dr. Christian Pichot. She was working on the elaboration of functionalized particles for medical diagnostic applications. She then spent 6 months at the CNRS center of Thiais, France, working in the domain of conducting polymers. During that period she got a permanent CNRS researcher position to work in the field of cationic polymerization in the group of Professor Jean-Pierre Vairon, at the Laboratoire de Chimie des Polymères at the University Pierre and Marie Curie, Paris, France. She received the Habilitation in 2000 and was appointed full Professor in 2001. Since september 2009, she is a Professor at the University Claude Bernard Lyon 1, senior member of the Institut Universitaire de France and director of the research unit Chemistry Catalysis Polymer and Processes. In recent years she focused her research on controlled/living radical polymerization in dispersed systems and on the synthesis of amphiphilic block copolymers and their self-assemblies.
Thursday, June 28

**Professor Benny D. Freeman**  
The University of Texas at Austin

8:00 a.m. – 9:00 a.m.

**TITLE:** The role of fundamental and applied polymers membrane science in addressing the global water/energy nexus

Benny Freeman is the Kenneth A. Kobe and Paul D. and Betty Robertson Meek & American Petrofina Foundation Centennial Professor of Chemical Engineering at The University of Texas at Austin. He has been a faculty member for more than 20 years. He completed his graduate training in Chemical Engineering at the University of California, Berkeley, earning a Ph.D. in 1988. In 1988 and 1989, he was a postdoctoral fellow at the Ecole Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI), Laboratoire Physico-Chimie Structurale et Macromoléculaire in Paris, France. Dr. Freeman’s research is in polymer science and engineering and, more specifically, in mass transport of small molecules in solid polymers. He currently directs 15 Ph.D. students, 1 postdoctoral fellow, and 4 visiting scientists performing fundamental research in gas and liquid separations using polymer membranes and barrier packaging. His research group focuses on structure/property correlation development for desalination and vapor separation membrane materials, new materials for hydrogen separation and natural gas purification, nanocomposite membranes, reactive barrier packaging materials, and new materials for improving fouling resistance and permeation performance in liquid separation membranes. His research is described in more than 300 publications and 15 patents/patent applications, and he has co-edited 5 books on these topics. He has won a number of awards, including the Roy W. Tess Award in Coatings from the PMSE Division of ACS (2012), the ACS Award in Applied Polymer Science (2009), the AIChE Institute Award for Excellence in Industrial Gases Technology (2008), and the Strategic Environmental Research and Development Program Project of the Year (2001). He is a Fellow of the AAAS, AIChE, ACS, and the PMSE Division of ACS. He has served as chair of the PMSE Division of the ACS, chair of the Gordon Research Conference on Membranes: Materials and Processes, President of the North American Membrane Society, chair of the Membrane Area of the Separations Division of the AIChE, and he has also served as Chair of the Separations Division of AIChE. He is a co-founder of Advanced Hydro, Inc. (http://www.advancedhydro.net/)

**Professor Katharina Landfester**  
Max Planck Institute for Polymer Research, Mainz

9:00 a.m. – 10:00 a.m.

**TITLE:** Designing nanoparticles in miniemulsions: From nanolithography to bio-medical applications

Katharina Landfester studied chemistry at the technical university of Darmstadt. For her diploma thesis, she was at the Ecole d’Application des Hautes Polymères in Strasbourg (Professor M. Lambla). In 1995, she received her doctoral degree in physical chemistry from the Johannes Gutenberg University of Mainz after working with Professor H.W. Spiess at the Max Planck Institute for Polymer Research on the synthesis and characterization of core-shell latexes by transmission electron microscopy and solid state NMR. After spending another year as a group leader at the institute, she moved for a doctoral stay at the Lehigh University (Professor M. El-Aasser) where she first came in contact with the miniemulsion technique. She returned to Germany in 1998 joining the group of Professor M. Antonietti at the Max Planck Institute of Colloids and Interfaces in Golm. There, she led the miniemulsion group working on new possibilities in the synthesis of complex nanoparticles. In 2002, she got her habilitation in physical chemistry at the University of Potsdam. In 2003, she accepted a chair (C4) of macromolecular chemistry at the University of Ulm. Since 2008, is director at the Max Planck Institute for Polymer Research.
Friday, June 29

**Professor Michael Rubinstein**  
*University of North Carolina, Chapel Hill*

8:00 a.m. – 9:00 a.m.

**TITLE: Polymer physics helps us breathe easier**

Michael Rubinstein is John P. Barker Distinguished Professor at the Department of Chemistry, University of North Carolina at Chapel Hill. He has been on the faculty at UNC since 1995 following 10 years at Kodak Research Laboratories, post-doctoral fellowship at Bell Labs, and a Ph.D. from Physics Department at Harvard. Rubinstein's research interests are in the area of theoretical soft condensed matter physics with an emphasis on polymer physics. His main scientific contributions include theories of polymer entanglements, dynamics of reversible networks, and models of charged polymers. His recent scientific interests are in applications of polymer physics to biological systems, such as airway surface layer of a lung and development of molecular models of polymer gels and networks including those with self-healing properties. In 2003 he published a textbook "Polymer Physics" (together with Ralph H. Colby from Penn State University) that became very popular and is currently used as a standard textbook in many universities world-wide. He is the winner of APS Polymer Physics Prize and served as the Chair of Polymer Physics Division of APS.

**Professor E. W. “Bert” Meijer**  
*Eindhoven University of Technology*

9:00 a.m. – 10:00 a.m.

**TITLE: Consequences of cooperativity in supramolecular polymers**

Bert Meijer is distinguished university professor and professor of Organic Chemistry at the Eindhoven University of Technology (TU/e). He is also scientific director of the Institute for Complex Molecular Systems at the TU/e. He studied Chemistry in Groningen and received his Ph.D. in 1982 cum laude on the topic of stereochemistry and chemiluminescence. After 10 years of industrial research at Philips Research in Eindhoven and DSM Research in Geleen he moved to the TU/e in 1991. Since 1995 he is also an adjunct professor at the Radboud University in Nijmegen and since 2006 visiting professor at the University of California in Santa Barbara. He is member of the Royal Netherlands Academy of Sciences and the Royal Dutch Society of Science. In 2001 he received the SPINOZA award, in 2006 the ACS award for polymer chemistry of the American Chemical Society and in 2010 the AkzoNobel award. He is an editor of the Journal of Polymer Science; Polymer Chemistry and member of a number of editorial boards, including Angewandte Chemie and the Journal of American Chemical Society. His research group is focused on supramolecular chemistry with special attention for stereochemistry, functional (bio)materials, self-assembly, chemical biology and complex molecular systems.
Monday, June 25

IUPAC Award Winner

**Professor Ali Khademhosseini**
Third Polymer International/IUPAC Award Winner

2:35 p.m. – 3:05 p.m.
Torgersen 3100

**TITLE: Microengineered hydrogels for stem cell bioengineering and tissue regeneration**

Ali Khademhosseini is an Associate Professor at Harvard-MIT’s Division of Health Sciences and Technology (HST), Brigham and Women’s Hospital (BWH) and Harvard Medical School (HMS) as well as an Associate Faculty at the Wyss Institute for Biologically Inspired engineering. He is also a Junior Principal Investigator at Japan’s World Premier International - Advanced Institute for Materials Research (WPI-AIMR) at Tohoku University where he directs a satellite laboratory. Currently he is a Harrington fellow at the Biomedical Engineering Department of the University of Texas-Austin. His research is based on developing micro- and nanoscale technologies to control cellular behavior with particular emphasis in developing microscale biomaterials and engineering systems for tissue engineering. Currently, his laboratory is developing technologies to control the formation of vascularized tissues with appropriate microarchitectures as well as regulating stem cell differentiation within microengineered systems.

Dr. Khademhosseini’s interdisciplinary research has been recognized by over 25 major national and international awards. He is the only person to receive early career awards from three major engineering discipline societies: electrical (IEEE Engineering in Medicine and Biology award / IEEE Nanotechnology award), chemical (AIChE Colburn award) and mechanical engineering (ASME Y.C. Fung award). He is also the recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE), the highest honor given by the US government for early career investigators. In 2011, he received the Pioneers of Miniaturization Prize from the Royal Society of Chemistry for his contribution to microscale tissue engineering and microfluidics. In addition, he has received the young investigator awards of the Society for Biomaterials and the Tissue Engineering and Regenerative Medicine International Society-North America. He has also received the American Chemical Society’s Viktor K. Lamar award and the Unilever award and has been recognized by major governmental awards including the NSF Career award and the Office of Naval Research young investigator award. In 2007, he was named a TR35 recipient by the Technology Review Magazine as one of the world’s top young innovators. He has also received major recognitions from other organizations including the Society for Laboratory Automation and Screening Innovation Award, a Sloan fellowship as well as the IAMBE and the Coulter foundation early career awards. For his Ph.D. work he received the BMW Scientific Award, considered as one of the most prestigious international prizes for a young scientist of any field.
Sunday, June 24

9:00 a.m. – 9:00 p.m. Registration, Torgersen 1100

5:30 p.m. – 8:00 p.m. **Welcoming Remarks, Burruss Hall Auditorium**
   Timothy E. Long, MACRO2012 Regional Organizing Committee Chair, Virginia Tech
   Mark G. McNamee, Senior Vice President and Provost, Virginia Tech
   Charles W. Steger, President, Virginia Tech
   Michael Buback, President, IUPAC Polymer Division

   **Plenary Lectures, Burruss Hall Auditorium**
   **Lecture 1** – Chair: Elsa Reichmanis, Georgia Institute of Technology
      Speaker: Niyazi Serdar Sariciftci, Johannes Kepler University of Linz
   **Lecture 2** – Chair: Axel Mueller, University Bayreuth
      Speaker: Kazunori Kataoka, The University of Tokyo

8:30 p.m. – 10:00 p.m. Reception, The Inn at Virginia Tech and Skelton Conference Center
   Music by 3 Minute Lovin’

Monday, June 25

7:00 a.m. – 7:00 p.m. Registration, Torgersen 1100
7:00 a.m. – 8:00 a.m. Continental Breakfast, Squires Student Center - Commonwealth Ballroom
8:00 a.m. – 10:00 a.m. **Plenary Lectures, Burruss Hall Auditorium**
   **Lecture 1** – Chair: Mark McNamee, Virginia Tech
      Speaker: Robert H. Grubbs, California Institute of Technology
   **Lecture 2** – Chair: Georg Krausch, Johannes Gutenberg University Mainz
      Speaker: Geoffrey W. Coates, Cornell University
10:00 a.m. – 10:30 a.m. Morning Break, Squires Student Center - Commonwealth Ballroom
10:30 a.m. – 12:10 p.m. **Keynote and Oral Presentations**
12:10 p.m. – 1:45 p.m. Lunch (on your own)
12:15 p.m. – 2:00 p.m. Bill Barker portraying Thomas Jefferson, The Lyric Theater
1:45 p.m. – 3:35 p.m. **Keynote and Oral Presentations**
3:35 p.m. – 3:50 p.m. Afternoon Break, Squires Student Center - Commonwealth Ballroom
3:50 p.m. – 6:10 p.m. **Keynote and Oral Presentations**
6:10 p.m. – 7:40 p.m. Dinner (on your own)
7:40 p.m. – 9:40 p.m. **General Poster Session** and **Reception**
Tuesday, June 26

8:00 a.m. – 5:00 p.m.  Registration, Torgersen 1100
7:00 a.m. – 8:00 a.m.  Continental Breakfast, Squires Student Center - Commonwealth Ballroom
8:00 a.m. – 10:00 a.m.  Plenary Lectures, Burruss Hall Auditorium
   Lecture 1 – Chair: Manuel Garcia-Leiner, Arkema
   Speaker: Eugenia Kumacheva, University of Toronto
   Lecture 2 – Chair: Brigitte Voit, Leibniz Institute of Polymer Research Dresden
   Speaker: Xi Zhang, Tsinghua University
10:00 a.m. – 10:30 a.m.  Morning Break, Squires Student Center - Commonwealth Ballroom
10:30 a.m. – 12:10 p.m.  Keynote and Oral Presentations
12:10 p.m. – 1:45 p.m.  Lunch (on your own)
1:45 p.m. – 3:35 p.m.  Keynote and Oral Presentations
3:35 p.m. – 3:50 p.m.  Afternoon Break, Squires Student Center - Commonwealth Ballroom
3:50 p.m. – 6:10 p.m.  Keynote and Oral Presentations
6:10 p.m. – 7:40 p.m.  Dinner (on your own)
7:40 p.m. – 9:40 p.m.  General Poster Session and Reception
8:30 p.m. – 10:00 p.m.  Social Event, Castle's Kettle & Pub
   Music by Poly and the Mers

Wednesday, June 27

8:00 a.m. – 5:00 p.m.  Registration, Torgersen 1100
7:00 a.m. – 8:00 a.m.  Continental Breakfast, Squires Student Center - Commonwealth Ballroom
8:00 a.m. – 10:00 a.m.  Plenary Lectures, Burruss Hall Auditorium
   Lecture 1 – Chair: Scott Gaynor, LORD
   Speaker: Jean M. J. Fréchet, University of California, Berkeley, and King Abdullah University of Science and Technology
   Lecture 2 – Chair: Martina Stenzel, University of New South Wales
   Speaker: Bernadette Charleux, Laboratory for the Chemistry and Processes of Polymerization, France
10:00 a.m. – 10:30 a.m.  Morning Break, Squires Student Center - Commonwealth Ballroom
10:30 a.m. – 12:10 p.m.  Keynote and Oral Presentations
12:10 p.m. – 1:45 p.m.  Lunch (on your own)
1:45 p.m. – 3:35 p.m.  Keynote and Oral Presentations
3:35 p.m. – 3:50 p.m.  Afternoon Break, Squires Student Center - Commonwealth Ballroom
3:50 p.m. – 6:10 p.m.  Keynote and Oral Presentations
6:10 p.m. – 7:40 p.m.  Dinner (on your own)
7:40 p.m. – 9:40 p.m.  General Poster Session and Reception
Thursday, June 28

8:00 a.m. – 5:00 p.m.  Registration, Torgersen 1100
7:00 a.m. – 8:00 a.m.  Continental Breakfast, Squires Student Center - Commonwealth Ballroom
8:00 a.m. – 10:00 a.m.  
Plenary Lectures, Burruss Hall Auditorium
Lecture 1 – Chair: James McGrath, Virginia Tech  
Speaker: Benny D. Freeman, The University of Texas at Austin

Lecture 2 – Chair: Toshio Masuda, Fukui University of Technology  
Speaker: Katharina Landfester, Max Planck Institute for Polymer Research, Mainz

10:00 a.m. – 10:30 a.m.  Morning Break, Squires Student Center - Commonwealth Ballroom
10:30 a.m. – 12:10 p.m.  Keynote and Oral Presentations
12:10 p.m. – 1:45 p.m.  Lunch (on your own)
1:45 p.m. – 3:50 p.m.  Keynote and Oral Presentations
3:35 p.m. – 3:50 p.m.  Afternoon Break, Squires Student Center - Commonwealth Ballroom
3:50 p.m. – 6:10 p.m.  Keynote and Oral Presentations
6:00 p.m. – 8:00 p.m.  Graduate Student Social, BreakZONE, Squires Student Center
7:00 p.m. – 8:00 p.m.  Banquet Social, (must have pre-registered, ticket required), The Inn at Virginia Tech and Skelton Conference Center
8:00 p.m. – 10:00 p.m.  Banquet (must have pre-registered, ticket required), The Inn at Virginia Tech and Skelton Conference Center  
Speaker: Robert J. Lang, Alamo, California

Friday, June 29

8:00 a.m. – 12:00 p.m.  Registration, Torgersen 1100
7:00 a.m. – 8:00 a.m.  Continental Breakfast, Squires Student Center - Commonwealth Ballroom
8:00 a.m. – 10:00 a.m.  
Plenary Lectures, Burruss Hall Auditorium
Lecture 1 – Chair: Charles Han, Institute of Chemistry the Chinese Academy of Sciences  
Speaker: Michael Rubinstein, University of North Carolina

Lecture 2 – Chair: Garth L. Wilkes, Virginia Tech  
Speaker: E. W. “Bert” Meijer, Eindhoven University of Technology
10:30 a.m. – 11:00 a.m.  MACRO 2014 Welcoming  
Supawan Tantayanon, Chairperson of the 2014 IUPAC World Polymer Congress
Monday Morning, June 25 – Oral Sessions

Symposium: Commercial Frontiers
Torgersen 1050
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

Biomedical Materials—K. Haider, Session Leader
10:30 Shape memory biomaterials: Variation and study of topography, functionality and processing. D. Le, S. W. Brosnan, V. S. Ashby
11:10 Development of polysaccharide based tissue adhesives. H. S. Lu
11:50 Chitosan nanoscaffold-based bone glue in the form of injectable gel. S. Chirachanchai

Symposium: Complex Macromolecular Systems I
McBryde 113
T. Lodge, L. Leibler, Organizers

Responsive Supramolecular and Network Polymers—M. Urban, F. Gröhn, Session Leaders
10:30 Mechanochemical remodeling of synthetic polymers. S. L. Craig
11:00 Macroscopic self-assembly and self-healing through molecular recognition. A. Harada
11:30 PDMS-3F-4.5-PDMS: A novel, tough hybrid triblock elastomer. K. J. Wynne, S. Chakrabarty
11:50 Cross-linked semi-crystalline poly(epsilon-caprolactone) networks as shape-memory polymer systems. J. Raquez

Symposium: Energy, Optics, and Optoelectronics
Holden 114
S. Cheng, Y. Cao, Organizers
A. Jen, Session Leader
11:00 High efficient and thermally stable organic photovoltaics based on cross-linkable fullerene derivatives. C. Hsu
11:30 Porphyrin polymers for solar energy conversion. M. G. Walter, C. C. Wamser
11:50 Controlling blend film morphology by varying chemical structure of donor-acceptor alternative copolymers for photovoltaic applications. Y. Li, Y. Chen, Y. Tu, X. Zhu

Symposium: Macromolecules and Nanotechnology I
McBryde 126
P. Hammond, K. Char Organizers

Macromolecular Self Assembly I—R. M. Ho, Session Leader
11:00 High-density array of one-dimensional nanostructures by using AAO templates with surface or interfacial modification. J. Kim, J. Byun
11:30 Plasmonic particles ordered in block copolymers. C. Tallet, J. Vieaud, O. Merchiers, P. Sivarsankaran, F. Nallet

Symposium: Macromolecules in Biotechnology and Medicine I
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

Polymers for Biotechnology—J. S. Rifle, Session Leader
10:30 Sphere-templated scaffolds and engineered scaffold polymers to drive healing and regeneration. B. D. Ratner, L. R. Maddan, A. Galperin
11:00 Degradable polyurethanes for maintaining form and wound healing nature in tissue regeneration. J. Santerre, S. Sharifpoor, J. E. McBane, J. W. Cheung, K. G. Battiston, R. S. Labow
11:30 Significance of soft and hard segments on shape memory properties of polyurethane films. A. Sirkecioglu, M. Bonh, F. Guner
11:50 Surface response of mixed shell micelles for refolding of thermally denatured proteins. L. Shi

Symposium: Modern Methods of Characterization
McBryde 332
K. Beers, T. Chang, Organizers

Emerging Tools in Macromolecular Characterization—T. Chang, K. Beers, Session Leaders
10:30 Analysis of complex polymers by field flow fractionation coupled to MALLS. H. Pasch, A. Makan, W. van Aswegen, T. Otte
11:05 Exploiting chromophores for polymer analysis. S. K. Williams
11:40 Advanced liquid chromatographic techniques for separation and comprehensive molecular characterization of complex polymer systems. D. Berek

Symposium: Polymer Physics
Torgersen 1030
R. Colby, D. Vlassopoulos, Organizers

Polymer Cystallization—G. Floudas, Session Leader
10:30 Nucleation and flow-induced crystallization in polyolefins. S. Milner
11:00 Polymer crystallization: Order in complex systems. J. Sommer, C. Luo
11:50 Influence of temperature and molar mass on the spherulitic growth rate of poly(ε-caprolactone). S. S. Sheth, S. Sparks, H. Marand

Symposium: Macromolecules and Nanotechnology II
McBryde 129
P. Hammond, K. Char, Organizers

Polymers for Nanomedicine I—P. Hammond, Session Leader
10:30 Design of polymers as therapeutic carriers. J. M. Frechet, P. Wich
11:00 Co-opting Moore’s law: The cost-effective design of vaccines and therapeutics. J. M. DeSimone
11:30 Synthesis and study of highly fluorescent PAMAM-based dendritic molecules for multidisciplinary applications. A. M. El-Betany, N. B. McKeown
11:50 Functional nanocontainers for self-healing applications. J. Fickert, K. Landfester, D. Crespy

Symposium: Emerging Tools in Macromolecular Characterization
Torgersen 339
K. Beers, T. Chang, Organizers
Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I
McBryde 100
B. Freeman, A. Thornton, Organizers

Gas Separation Membranes I—H. B. Park, G. Sarti, Session Leaders
10:30 Gas permeation in thin versus thick glassy polymer films. N. R. Horn, D. R. Paul
11:00 Dehydration of bioethanol by vapor-membrane permeation. Y. Huang, R. W. Baker
11:30 Thermally rearranged (TR) polymer membranes for high performance gas separation. R. Guo, J. E. McGrath, D. F. Sanders, Z. P. Smith, B. D. Freeman

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications II
Randolph 331
B. Freeman, A. Thornton, Organizers

Fuel Cells, Batteries, Energy Storage Materials—
R. Lammertink, B. Rowe, Session Leaders
10:30 Novel proton-conducting block copolymers containing imidazole functionalities for solar fuels applications. Y. Schneider, R. A. Segalman
11:00 Synthesis via ROMP of triazole bearing polycyclobutene diblock copolymers as water-free proton conducting membranes for PEM fuel cells. J. Wei, W. Trout, S. Granados-Focil
11:30 Synthesis of glycerol-based oligomers: A new opportunity for lithium batteries? P. Pham, V. Lapinte, S. Monge, Y. Raoul, J. Robin
11:50 Covalently incorporating a cationic charged layer into Nafion membrane by radiation-induced graft copolymerization. J. Ma, J. Yuan, S. Wang, C. Yu, J. Peng, M. Zhai

Symposium: Recent Developments in Synthesis I
Torgersen 2150
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis I—J. Spruell, Session Leader
10:30 Controlled installation of single reactive groups along a polymer chain or at the chain ends. P. Theato
11:00 Utilizing efficient chemical reactions to prepare multifunctional polymers, artificial-oligonucleotide-based block copolymers, and reactive nanoporous membranes. A. Khan
11:30 Thiolactone chemistry: A powerful approach in the metal-free conjugation toolbox. P. Espeel, F. Goethals, M. M. Stamenovic, F. E. Du Prez
11:50 Polymer microspheres prepared by water-borne thiol-ene suspension photopolymerization. O. Z. Durham, S. Krishnan, D. A. Shipp

Symposium: Recent Developments in Synthesis II
Torgersen 1020
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis II—H. Frauenrath, Session Leader
11:00 Creating new nanoparticles by combination of supramolecular chemistry click chemistry and RAFT polymerization. M. Stenzel, F. Yhaya, R. Buch Møller, T. Terndrup Nielsen
11:30 Novel flower shaped BAB and CBABC tri- and penta-block copolymers via solution ATRP. S. Kumar, C. N. Murthy
11:50 Synthesis of photoreversible polymer via solid state polymerization and depolymerization. K. Saito, P. Johnston, Y. Nishikami, D. Wheldale
12:10 Anionic synthesis of star-branched acrylic polymers by using divinyl monomers with equivalent and non-equivalent (meth) acrylate functions. T. Kitayama, A. Hashimoto, T. Kitaura

Symposium: Surfaces and Interfaces
Torgersen 1060
T. Russell, J. Kim, T. Thurn-Albrecht, Organizers

Thin Film Instabilities—T. P. Russell, J.-T. Chen, Session Leaders
10:30 Orientation of block copolymer thin films on brushless substrates. K. Char
11:00 Creasing instability of soft polymer surfaces. R. C. Hayward
11:50 A new view of wrinkling phenomena in ultrathin films. N. Menon

Symposium: Tri-National Award Session
Torgersen 1040
Tri-National Team Award Presentations—W. Mormann, S. Meyer, Session Leaders

10:30 Welcoming Remarks
10:40 Controlled radical synthesis in supercritical carbon dioxide of new stimuli-responsive materials for biomedical applications. C. Magee, F. Aldabbagh, A. Earla, R. Braslau, M. Nash, C. Elvira
Monday Afternoon, June 25 – Oral Sessions

**Symposium: Macromolecules and Nanotechnology I**
McBryde 126
P. Hammond, K. Char, Organizers

**Macromolecular Self Assembly II**—E. Kramer, Session Leader
1:45 Chiral transfer from molecule to phase in self-assembly of chiral block copolymers. R. Ho
2:15 Amphiphilic block copolymers: From bulk structures to aqueous solution assemblies. R. Castillo, E. Lejeune, C. Chassenieux, O. Colombani, V. Ponsinet
3:05 Synthesis and properties of anisotropic particles. D. Crespy, C. Herrmann, K. Friedemann, R. H. Staff, K. Landfester
3:35 Break

**Macromolecular Self Assembly III**—K. Char, Session Leader
3:50 Hierarchical self-assembly of p-conjugated oligomers and polymers in solid state. M. Goel, M. Jayakannan
4:10 In situ synthesis of stable and unique nanostructures from polyacetylene diblock copolymers easily produced by mild ring-opening metathesis polymerization. K. Yoon, T. Choi
4:30 Radical/ionic domain formation in self-assembled block copolymer platform for morphology-driven modulation of charge transport. T. Suga, H. Nishide
5:00 Polymeric supra-amphiphiles for controlled self-assembly and disassembly. P. Han, S. Li, H. Xu, Z. Wang, X. Zhang
5:20 Selective-assembly of nanoparticles on patterned polymer layers by UV laser ablation on various glass surface structures. J. Lee, C. Daengngam, E. See, Y. Xu, H. Robinson, J. R. Heffin
5:40 Microphase separation and crystallization of all-conjugated phenylene-thiophene diblock copolymers. X. Yu, Y. Han

**Symposium: Macromolecules and Nanotechnology II**
McBryde 129
P. Hammond, K. Char, Organizers

**Polymers for Nanomedicine II**—P. Hammond, Session Leader
1:45 Supramolecular nanomedicines for targeted cancer therapy. K. Kataoka
2:15 Manipulating polymersomes: Control over shape and surface functionality. S. A. Meewissen, K. Kim, D. J. Pochan, J. C. van Hest
3:05 Development and applications of polymeric nanoparticles for theranostics. I. Kwon
3:35 Break

**Responsive Supramolecular and Network Polymers**—S. Craig, P. Woisel, Session Leaders
2:15 Anelastic shape memory in liquid crystalline elastomers. A. C. Griffin, W. Ren, P. J. McMullan
2:35 Exploiting noncovalent interactions for the design of stimuli-responsive polymers. C. Weder
3:05 Mechanoluminescence in polymers. Y. Chen, R. Sijbesma
3:35 Break

**Responsive Supramolecular and Network Polymers**—C. Bowman, H. Otsuka, Session Leaders
3:50 Design of a thermo-reversible supramolecular polymer based on poly (ethylene-co-vinyl alcohol) and self-assembly of UPy groups. A. Jangzehi, S. Ghaffarian, E. Kowsari
4:10 Supramolecular polymer assemblies from ionic building blocks: Tuning size, shape and functionality. F. Gruhn, J. Duering, S. Fruehbeisser, I. Willerich
4:30 Reorganizable cross-linked networks based on radically exchangeable dynamic covalent bonds. H. Otsuka, K. Imato, Y. Amamoto, J. Su, T. Ohishi, A. Takahara
5:00 New multi-stimuli responsive macromolecular assemblies. P. Woisel, L. Sambe, J. Lyskawa, D. Fournier, F. Stoffelbach, B. Charleux, G. Cooke
5:20 Silicone elastomers having silver nanoparticles as crosslinkers show self-healing at room temperature. R. Martin, A. Rekondo, G. Cabañero, H. J. Grande, I. Odriozola
5:40 Stimuli-responsive and self-healing polymers that change color. M. W. Urban

**Symposium: Complex Macromolecular Systems I**
McBryde 113
T. Lodge, L. Leibler, Organizers

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5:40 Stimuli-responsive and self-healing polymers that change color. M. W. Urban
Polymers for Nanomedicine III—Y.-Y. Yang, Session Leader
4:10 Polymer nanocapsules with “invisible” walls: Synthesis and beyond. S. A. Dergunov, M. D. Kim, E. Pinkhassik
4:30 How do free cationic polymer chains promote gene transfection? C. Wu
5:00 Multifunctional fluorophore-labeled poly(organosiloxane) nanoparticles for biomedical applications. O. Koshkina, T. Lang, C. Bantz, J. Kasper, C. Kirkpatrick, D. Docter, R. Stauber, S. Hatami, U. Resch-Genger, M. Maskos
5:20 Preparation and characterization of clonazepam nanoparticles by water soluble polymer to cross the blood brain barrier. A. Pandey

Symposium: Macromolecules in Biotechnology and Medicine I
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

Polymers for Biotechnology—J. P. Santerre, Session Leader
1:45 Novel approaches using different natural based polymeric scaffolds for moving forward on the engineering of human tissues. R. L. Reis
2:15 Fabrication of photo cross-linked, microstructured hydrogel systems as biocarrier for enzymes. A. Richter, M. Diener, J. Fingernagel, D. Appelhans, B. Voit
2:35 Microengineered hydrogels for stem cell bioengineering and tissue regeneration. A. Khademhosseini*
3:05 Determining structure-function relationships in fibrous, elastic scaffolds to design mechanically appropriate tissue constructs. W. R. Wagner, Y. Hong, M. Sacks, A. D’Amore, N. J. Amoroso
3:35 Break
3:50 Evaluation of PEG-based hydrogel scaffolds properties for tissue engineering applications. Z. Abdul Hamid, A. Blencowe, G. Qiao, G. Stevens
4:10 Magnetic block ionomer clusters (MBIClusters) with transverse NMR relaxivities to enhance MRI contrast and sensitivity. J. Riffle
5:00 Ex vivo expansion of hematopoietic stem and progenitor cells cultured on biomaterials having nanosegments from umbilical cord blood. A. Higuchi
5:20 Engineering bioresorbable polymers into vascular scaffolds - an application in interventional cardiology. M. Kossuth, J. P. Oberhauser

Symposium: Commercial Frontiers
Torgersen 1050
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

Biomedical Materials—M. Wubbolts, Session Leader
1:45 New polymers for ophthalmologic and cardiovascular applications: The transition from molecules to medicine. B. D. Ratner
3:30 Break

Advanced Engineering Plastics and Thermosets—K. Haider, Session Leader
3:45 Simultaneous functionalization and reduction of graphene oxide and its electrically conductive polymer nanocomposites. Z. Yu
4:50 Study of the barrier properties of new packaging with recycled PET and oxygen scavengers. C. Lixon Buquet, S. Marais
5:15 Carbon-based transparent electrodes: Advantages, bottlenecks and strategies. I. Kolaric

Symposium: Energy, Optics, and Optoelectronics
Holden 114
S. Cheng, Y. Cao, Organizers

Advance Materials I—A. Holmes, Session Leader
1:45 New polymerization route to conjugated polymers: Regio- and stereoselective synthesis of polyarylene chlorovinylenes by decarboxylative polyaddition of aryl chlorides and alkynes. C. Chan, J. Liu, J. Lam, B. Tang
2:15 Conjugated polymers with highly polar side chains for the interface engineering of high-performance optoelectronic devices. F. Huang, C. Duan, C. Zhong, X. Guan, K. Zhang, Y. Cao
2:35 Rational material design and interface engineering for high-performance and stable polymer solar cells. A. K. Jen
3:35 Break

* IUPAC Award Keynote Lecturer
Symposium: Modern Methods of Characterization
McBryde 332
K. Beers, T. Chang, Organizers

Emerging Tools in Macromolecular Characterization—T. Chang, K. Beers, Session Leaders
1:45 HPLC analysis and large scale purification of PEO-PPO-PEO triblock copolymers. C. Y. Ryu, H. Park
2:10 Copolymer characterization by quadrupole- and quintupole-detector SEC. A. M. Striegel, I. A. Haidar Ahmad, S. M. Rowland
2:45 Characterization of branched polymer. H. Lee, S. Ahn, T. Chang
3:35 Break
4:15 In situ NMR/ MRI studies of lithium ion batteries and supercapacitors. N. M. Trease, H. Chang, H. Wang, S. Chandrashekar, T. K. Köster, A. Jerschow, C. P. Grey
4:50 Transport and collective interactions from nanometer to micron scales in ionomers. L. A. Madsen, J. Hou, Z. Zhang, M. D. Lingwood
5:25 Supercooling effects on chain folding of semi-crystalline polymer by 1H-13C double quantum NMR and selective isotope labeling. Y. Hong, T. Miyoshi
5:50 Investigation into the properties of a bioactive polymer for renal failure diseases. R. Elsiddig, S. Hudson, E. Owens, H. Hughes, D. O’Grady, P. McLoughlin

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I
McBryde 100
B. Freeman, A. Thornton, Organizers

Gas Separation Membranes I—H. B. Park, G. Sarti, Session Leaders
1:45 Synthesis and gas transport properties of hydroxyl-functionalized polyimides with intrinsic microporosity. I. Pinnau
2:15 Study of gas permeability for thermally rearranged (TR) HAB-6FDA/silica nanocomposite polymeric membrane. N. K. Acharya, D. F. Sanders, Z. P. Smith, B. D. Freemán
3:05 Crosslinked polymeric membranes for natural gas treating. W. J. Koros
3:35 Break
3:50 Effect of residual solvent on the CO2 separation properties of 6FDA-DAM membranes. D. Kahraman, C. Atalay-Oral, S. Tantekin-Ersolmaz
4:10 Polymer-clay nanobrick wall multilayer thin films for gas barrier and separation. J. C. Grunlan, M. Priolo
4:30 Tuning the microcapacities in thermally rearranged polymer membranes for small gas molecules. Y. Lee, S. Han, S. Kim, A. Hill, A. Lozano, M. Calle
5:00 Investigating the sorption behaviour of post-modified PIM-1 polymers. L. Maynard-Atem, C. R. Mason, K. Herd, P. M. Budd
5:20 A scattering model for amorphous, intrinsically microporous polymers. A. G. McDermott, P. M. Budd, N. B. McKeown, C. M. Colina, J. Runn
5:40 Polymer membranes to mitigate CO2 emissions from the power industry. T. Merkel, X. Wei, Z. He, H. Lin, M. Zhou, S. Thomas

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications II
Randolph 331
B. Freeman, A. Thornton, Organizer

Fuel Cells, Batteries, Energy Storage Materials—R. Lammertink, B. Rowe, Session Leaders
1:45 Development of a nonlinear viscoelastic viscoplastic constitutive model for a PFCB/PVDF proton exchange membrane. J. Wright, M. Ellis, D. Dillard, S. Case, R. Moore, Y. Li, Y. Lai, C. Gittleman
2:35 Microfabrication of ion-conducting membrane-electrode assemblies by spray layer-by-layer assembly. N. R. Davis, D. S. Liu, N. S. Lewis, P. T. Hammond
3:05 Solution and membrane morphology of ion-containing block copolymers. M. L. Disabb-Miller, M. A. Hickner
3:35 Break
3:50 Block polyelectrolytes with pendant quaternary ammonium groups for anion exchange membranes. H. Lee, Y. Wu, K. Liu, C. Chao
4:10 Block copolymers with pendant ionic groups for anion exchange membranes. L. Wang, M. A. Hickner
4:30 Microwave assisted synthesis of triazole functionalized polyethylene imine as water-free proton conducting membranes for PEM fuel cells. R. P. Doyle, S. Granados-Focil
5:00 Polymer electrolytes of protic ionic liquids for non-humidified intermediate temperature fuel cells. M. Watanabe
5:20 Controlled porosity in polyelectrolyte multilayers using electric fields. N. S. Zacharia, J. L. Lutkenhaus, J. Jean, C. Cho
5:40 Water-polymer interactions in cation and anion conducting membranes. M. Hickner
Symposium: Polymer Physics  
Torgersen 1030  
R. Colby, D. Vlassopoulos, Organizers

Polymer Glasses and Aging—G. Wilkes, Session Leader
1:45 Formation mechanism of polymer spherulites. A. Toda
2:15 Thermodynamic studies related to crystallization analysis fractionation (CRYSTAF) or temperature rising elution fractionation (TREF). M. Fischbach-Weiger, S. Enders
2:35 Molecular aspects of flow-induced crystallization of polymers. J. A. Kornfield
3:05 Filled elastomer mechanics and polymer dynamics modification near surfaces. F. Lequeux
3:35 Break
3:50 Controlling crystal orientation in isotactic PP. G. Kuma-raswamy, K. Sreenivas, H. V. Pol
4:10 Kinetics of nucleation and crystallization in poly(e-caprolactone) (PCL) and PCL-CNT nanocomposites. E. Zhuravlev, C. Schick
4:30 Thin polymer coatings with functionality. M. Stamm
5:00 Nanofluid glasses and lambda transitions. J. Texter, K. Bian, D. Chojnowski, J. Byrom
5:20 Glass transition temperature reductions in thin polymer films: Understanding the mechanisms of how a free surface imparts enhanced mobility. C. B. Roth, J. E. Pye
5:40 Theory of aging, mechanical response and plastic flow in polymer glasses. K. S. Schweizer, K. Chen

Symposium: Recent Developments in Synthesis I  
Torgersen 2150  
C. J. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis I—P. Theato, Session Leader
1:45 New synthetic methods for chain end functionalization in ROMP. A. F. Kilbinger
2:15 Synthesis of novel polymers containing adamantyl skeletons. T. Ishizone, S. Inomata
3:05 Simply, yet powerful reactions for polymer crosslinking and functionalization. J. M. Spruell, C. J. Hawker
3:35 Break

Synthesis I—A. Khan, Session Leader
3:50 Copper-catalytic orthogonal ‘click’ reactions for functionalization of polymer bromide chain-end and construction of complex polymer architectures at 25°C. Z. Jia, C. A. Bell, M. J. Monteiro
4:10 Novel polyimides from thiol-ene polymericizations. K. A. Murphy, A. Zebertavage, B. Killman, D. A. Shipp
4:30 Synthesis and applications of DNA block copolymers. A. Herrmann
5:00 Synthesis of thermo-reversible crosslinked polymers using Diels-Alder reaction of furan-containing polyfurfuryl methacrylate. D. Yamamoto, T. E. Long
5:20 Cyclopentadiene-maleimide platform for reversible Diels-Alder polymerizations. J. B. Stegall, P. A. Deck
5:40 Novel approaches to orthogonally reactive polymeric materials. A. Sanyal

Symposium: Surfaces and Interfaces  
Torgersen 1060  
T. Russell, J. Kim, Thrun-Albrecht, Organizers

Thin Film Instabilities—J. T. Chen, T. P. Russell, Session Leaders
1:45 Polymer surface instabilities: Fundamental physics to scalable engineering. A. J. Crosby
2:15 Design and fabrication of surface polyeon complex gel. H. Ajiro, K. Takemura, M. Akashi
2:35 Bio-inspired, smart, multifunctional interfacial materials. L. Jiang
3:50 Advances in switchable RAP - N-aryl-N-4-pyridinyl dithiocarbamates. G. Moad, D. J. Keddie, C. Guerrero-Sanchez, E. Rizzardo, S. H. Thang
3:50 Imidazol(in)ium hydrogen carbonates and imidazolium carboxylates as a genuine source of N-heterocyclic carbene for various organocatalyzed (mac)ro molecular syntheses. D. Tatton, M. Fèvre, J. Pinaud, P. Coupillaud, J. Vignolle, Y. Gnanou
3:35 Break

Synthesis II—H. Gao, Session Leader
3:50 Tris(2,4,6-trimethoxyphenyl)phosphine (TTMPP) : Potent organocatalyst for group transfer polymerization of alkyl (meth) acrylates. M. Fèvre, J. Vignolle, V. Heroguez, D. Tatton
4:10 Controlled radical polymerization mediated by amine-bis(phenolate) iron(III) complexes. M. P. Shaver, L. E. Allan, J. P. MacDonald
4:30 Bis(acrylamid)enato(cobalt(III) (Co(acac)3), an efficient spin-trap that controls the growth of polymer chains. C. Detrembleur, M. Hurtgen, J. Liu, C. Jérôme, A. Debuigne
5:00 Living/controlled radical copolymerization of hexafluoropropylene and butyl vinyl ether. P. Wang, L. Liu, J. Dai, R. Bai
5:20 Tailor-made functional polymers bearing pendant cycloalkenyl group via selective atom transfer radical polymerization (ATRP). N. K. Singh, P. Mandal
5:40 Nitroxide-mediated inverse suspension polymerizations of N-isopropylacrylamide in supercritical carbon dioxide. P. O’Connor, F. Aldabbagh
6:00 Preparation of optically active polymers using circularly polarized light. T. Nakano, Y. Wang, N. Xiao

Symposium: Recent Developments in Synthesis II  
Torgersen 1020  
C. J. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis II—M. Stenzel, Session Leader
2:35 Advances in switchable RAP - N-aryl-N-4-pyridinyl dithiocarbamates. G. Moad, D. J. Keddie, C. Guerrero-Sanchez, E. Rizzardo, S. H. Thang
3:05 Imidazol(in)ium hydrogen carbonates and imidazolium carboxylates as a genuine source of N-heterocyclic carbene for various organocatalyzed (macro)molecular syntheses. D. Tatton, M. Fèvre, J. Pinaud, P. Coupillaud, J. Vignolle, Y. Gnanou
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Symposium: Recent Developments in Synthesis II  
Torgersen 1020  
C. J. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis II—M. Stenzel, Session Leader
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3:35 Break
Thin Film Applications—R. Register, U. Jeong, Session Leaders

3:50 Controlling the morphologies of block copolymer nanocomposites via thermally processable nanoparticles. J. Bang, M. Yoo, S. Kim, B. Kim


4:30 Mussel-inspired block copolymer lithography for low surface energy materials of teflon, graphene, and gold. S. Kim

5:00 Vertically oriented PEO cylinder array with several hundreds think film in amphiphilic liquidcrystalline block copolymers. T. Iyoda

5:30 Spectral approach for non-linear theory of dip coating process. O. B. Yusuf, R. E. Khayat, A. N. Hrymak

5:50 Functional nanomaterials based on soft and hard nanoporous templates. J. Kim, S. Yang, G. Jeon

Tri-National Award Session
Torgersen 1040
D. Schiraldi, Organizer

Tri-National Team Presentations—W. Mormann, S. Meyer, Session Leaders

1:45 Glycosylated polypeptides and block copolypeptides from glycosylated α-amino acid N-carboxyanhydrides. T. J. Deming, J. R. Kramer

2:15 Simple, yet powerful reactions for polymer crosslinking and functionalization. C. J. Hawker, J. Spruell, E. Drockenmuller, A. Mueller


3:15 Break

3:30 Supramolecular complexes of amphiphilic wedge-shaped sulfonic acid molecules with polybases. X. Zhu, D. V. Anokhin, D. A. Ivanov, M. Möller


Monday Evening, June 25 – Poster Sessions
Squires Student Center – Commonwealth Ballroom
T. E. Long, S. R. Turner, R. B. Moore, Session Leaders

7:40 p.m. – 9:40 p.m.


M002 Synthesis and characterization of polyactic acid. Y. Du, W. Meng, M. Liu, Y. Yan

M003 Multichromophoric perylene bisimide dye with excellent photochemical and thermal properties. A. O. Aleshinloye, J. B. Bodapati, H. Icll

M004 Linear low density polyethylene oxo-degradation: Mechanical and thermal properties. A. J. Benitez, J. J. Sanchez, M. Arnal, A. J. Muller, O. Rodriguez, G. Morales

M005 Design and synthesis of functionalizable and backbone degradable polymers by ROMP. J. M. Fishman, L. L. Kiessling

M006 Sample recovery in liquid chromatography of synthetic polymers under critical conditions of enthalpic interactions. A. Siskova, D. Berek

M007 Yeast-derived poly(ω-hydroxy tetradecanoic acid): Molecular weight effects on chain entanglement and bioplastics properties. J. Cai, F. Liu, C. Liu, W. Xie, R. Gross


M009 Liquid crystal thermostat: Precursors to ultra-high performance polymers. L. Heist, T. J. Dingemans, E. T. Samulski

M010 Hybrid composite membranes of PVA for fuel cell applications. L. C. de Aguiar, F. R. Ramos Filho, A. D. Gomes

M011 Mass spectrometry characterization on protein interactions with synthetic polymers. X. Liu, V. Scionti, C. Wesdemiotis

M012 Dual responsive polymersomes: Drug encapsulation by heating and acid-triggered release. Z. Qiao, X. Huang, F. Du, D. Liang, Z. Li

M013 Degradation behavior of bisphenol a polycarbonate in long-term outdoor exposure in the western of China. L. Jiang, Y. Pan, S. Han, W. Gao, Y. Dan

M014 Characterization of the effect of counterions on self-assembled metallo-triangles by TWIM-MS. K. Guo, A. Schultz, X. Li, P. Dugourd, C. Moorefield, G. Newkome, C. Wesdemiotis

M015 Dithieno-diketopyrrolopyrrole n-conjugated polymers functionalized with electron deficient thiiazolopyrrol and pyrazinyl moieties for organic field-effect transistors. B. Fu, E. Reichmanis

M016 Analysis of guayule rubber using high resolution size exclusion chromatography. C. Chiang, B. Barkakaty, J. E. Puskas, W. Xie, K. Cornish

M017 Synthesis of siloxane branched polyolefins for use as extruding aids via ADMET polymerization. P. Atallah, K. B. Wagener

M018 Repeatability, reproducibility, and baseline stability of a dual-flow differential refractive index detector for calculation of molar mass averages in size exclusion chromatography. A. K. Brewer


M020 Temperature and pH dependence of smart poly(NVCL-co-IA)-based microgels synthesized by surfactant-free precipitation polymerization. P. F. de Oliveira, T. M. da Silva, S. F. Medeiros, A. M. dos Santos

M021 Synthesis and characterization of nano-hydroxyapatite/cellulose-graft-polyacrylamide biocomposite hydrogel as a drug carrier. S. S. Samandari, M. Gazi, F. C. Cebeci

M022 Treatment of molybdenum-containing wastewater by Polyol process. T. Chiang

M023 Thermal and morphological analysis of copolyesters containing 2,2,4,4-Tetramethyl-1,3-cyclobutanediol. N. Dixit, M. Zhang, M. Zhang, T. E. Long, R. B. Moore

M024 Water hyacinth pretreated with phosphoric acid for sugar production. T. Chiang

M025 Synthesis of ammonium bisphosphonate monomers and polymers. N. Hu


M028 Development of byssal protein based films as biomaterials. F. Byetee, I. Marcotte, C. Pellerin

M029 Layer-by-layer assembly of siRNA on nanoparticles for multidrug delivery in cancer treatment. J. Z. Deng, S. Morton, P. Hammond

M030 Toward the synthesis of isobutylene-based dendrimers for targeted drug delivery. M. Castano, J. E. Puskas, M. L. Becker


M032 Synthesis reaction of castor oil/polyethylene glycol-based polyurethanes and determination of their kinetic parameters by FTR. E. B. Colak, F. S. Guner

M033 Diffusion and porosity studies of aerogel polymers. L. M. Heist, L. A. Madsen, D. A. Schiraldi

M034 Controlled release of pacitaxel from in situ-forming PLAGa gel. M. S. Amini-Fazl, H. Mobedi


M036 Novel fullerene acceptor for the application in polymer solar cells. Y. He, K. Hong, Y. Yang

M037 Computational and experimental studies of crack propagation in a hydrogel strip. B. Mukherjee, O. Kaymakci, R. C. Batra, D. A. Dillard, R. B. Moore


M039 Impact of solvent annealing on P3HT/PCBM solar cells: Role of solubility and vapor pressure. S. Hu, H. Chen, M. Dadmun, B. Khomami


M042 Controlling surface ligand presentation of linear dendritic polymer micelles for enhanced cancer targeting. D. Chang, Z. Poon, P. T. Hammond

M043 Cellulose nanocrystal reinforced polymeric bone scaffolds. J. Hong, M. Roman
M044 Dye doped mesoporous polymers with high laser efficiency and radiation stability. A. Gumerov

M045 Experimental study of the suitability of polymeric coatings as a mitigation strategy for exposed surfaces under icing conditions. E. Piles Moncholi, D. W. Hammond

M046 Phase behavior of hyperbranched polymers. S. Enders, P. Schrader, C. Browarzik, D. Browarzik, T. Zeiner


M048 Bending induced stress storage in ultrathin polystyrene films. A. A. Broll, B. J. Gurmesa

M049 Click reaction kinetics of end-functional polymers in solution reacting to functional SAMs. S. Zhang, J. T. Koberstein

M050 Decoupling of ionic transport from segmental relaxation in polymer electrolytes. Y. Wang, A. L. Agapov, F. Fan, K. Hong, X. Yu, J. Mays, A. P. Sokolov

M051 Significance of segment concept in polymer physics. Y. Xu

M052 Reactive compatibilization of HDPE/PP/PS ternary polymer blend: Rheology and morphology studies. M. Partovi Meran, M. Razavi Aghjeh, F. Abbasi, M. Mehrabi Mazidi


M054 Design of high inorganic content organic inorganic hybrids based on a fluorinated polymer via combination of sol-gel chemistry and reactive extrusion. S. Seck

M055 Polymer-nanocrystals hybrid solar cells. H. Wei, H. Zhang, H. Sun, B. Yang

M056 Synthesis, characterization and pH-sensory applications of novel organometallic polymers based on fluorene-bridged bis-benzimidazolylidene. C. Wu, Y. Lee, Y. Chen

M057 Synthesis and characterization of poly(triphenylamine) with electron-withdrawing trifluoromethyl side groups. T. Yoon, G. Kim


M059 Multifunctional drug delivery carrier with glycuronidic acid-mediated liver targeting and pH-sensitive properties. Z. Yuan, H. Guo, C. Zhang, W. Wang

M060 Polyacrylamide hydrogels as current sources. A. T. Uzumcu, A. Gelir, Y. Yilmaz

M061 Low density polyethylene co-polymerization model studies. D. Thompson, B. Inci, K. Wagener


M064 Thermomechanical and morphological properties of random copolymers containing phosphonionic liquids. A. Schultz, T. E. Long

M065 Synthesis of amino and amidopullulan esters for drug delivery. J. Pereira, K. J. Edgar

M066 Cooperative effect observed in separation of oligosilane in ion-pairing chromatography using heptafluorobutyric acid. W. Xie, X. Qin, I. Teraoka, R. A. Gross

M067 Photopolymerised microcellular polyesters from high internal phase emulsions. M. Šušec, S. C. Ligon, R. Liska, P. Krajnc


M094 Electrochemical coupling layer by layer (ECC-LBL) assembly. M. Li, S. Ishihara, M. Liao, M. Akada, J. P. Hill, Y. Ma

M095 In vitro degradation kinetics of polycaprolactone films with different pH mediums. E. Özsüçüroğlu, B. lysian, Y. Avcişbaşi Gürnenil


M097 AFM as powerful imaging tool for the characterization of polymer-supported TBD catalysts. M. Santarelli, A. Broggi, M. Bracciale, A. Marrocchi, A. Vaccaro, D. Lanari

M098 Ultraresilient solution-processed infrared polymer photodetectors with an inverted device structure. X. Liu, T. Yang, H. Wang, X. Gong

M099 Interphase and reinforcement of poly(butylene succinate)/graphene oxide nanocomposites. C. Wan, B. Chen

M100 Switchgrass rheology and renewable energy: Development of solvent submersion dynamic mechanical analysis. G. Wan, T. Frazier, B. Zhao, C. Frazier

M101 Studying crystallization kinetics using solution crystallization analysis by laser light scattering (SCLALS). D. D. Robertson, A. J. van Renen

M102 Chitosan-starch blends in drug delivery. M. V. Debandi, N. J. François, M. A. Melaj, M. E. Darai, V. Dehandi

M103 Elusion behavior of cationic polymers on size exclusion chromatography. R. Okazaki, N. Kagawa


M105 Polymer mediated therapies for targeting pediatric osteosarcoma. S. Popwell, K. B. Wagener, C. Batch, W. Bolch, R. Milner, J. Lagmay, R. Zlotecki

M106 Synthesis of bimodal brushes on nanoparticles for designed interfaces. T. Neely, A. Rungta, B. Natarajan, D. Dukes, L. Schadler, B. Benicewicz

M107 Diblock-copolymer-stabilized bulk heterojunction solar cells. X. Li, G. Liu, J. Gao

M108 Novel polydithieno[3,2-b: 2,3-d]pyrroles for energy storage applications. J. F. Mike, J. L. Luktenhaus

M109 Nanofiber-coated carbon black composites of polysiloxynbutylene-based thermoplastic elastomers for biomedical applications. M. T. Luebbers, A. Alvarez Albarran, J. E. Puskas

M110 Physical aging of glassy polymer films affected by different stresses during vitrification. C. B. Roth, L. A. Gray, S. W. Yoon

M111 Investigating the use of tapered condinele double cantilever beam (DCB) specimens to study the effect of bondline thickness on fracture of toughened epoxy adhesive bonds. S. R. Ranade, D. Dillard

M112 Interrogating torsional interactions within thiophene-based conjugated copolymers using non-planar aromatics. B. C. Streifel, P. A. Peart, J. D. Tovar

M113 Hybrid materials of ZrO2-modified silicon rubbers with high transparency and refractive index. I. Lei, W. Chiu, D. Lai

M114 The study of PS-b-PEO block copolymers by interfaced separation mass spectrometry methods. C. Shi, C. Wesdemiotis

M115 Ion mobility: An enabling technology for polymer characterization. M. O’Leary, E. Riches, K. Craven

M116 Alternative sample introduction for mass spectrometry analysis of polymer samples using atmospheric solids analysis probe (ASAP). M. O’Leary, B. Cabovska, K. Craven

M117 Influence of alkylation substituents on the rheological and thermal properties of phosphonium-PAA based supramolecular polymer networks. X. Lin, M. W. Grinstaff

M118 Synthesis of chemically modified alginate derivatives. S. N. Pawar, K. J. Edgar

M119 Selective deposition of conducting polymers on modified polypeptide scaffolds to form flexible, biocompatible electrodes and actuators. A. R. Murphy, J. Romero

M120 Poly(ethylene oxide)-b-poly(L-glutamic acid) ionic-nionic block copolymers and their magnetic complexes. J. Llang, S. Balasubramaniam, Y. Lin, R. M. Davis, J. S. Riffle

M121 Ionically conductive behavior and morphology of polyimide-based membranes for lithium secondary batteries. M. H. Ugru, R. D. Toker, N. Kayaman Apohan, A. Gunor

M122 Synthetic mimics of antimicrobial peptides with high selectivity prepared via aqueous RAFT polymerization. L. C. Paslay, B. A. Abel, C. L. McCormick, S. E. Morgan

M123 Preparation and characterization of novel triphenylamine perfluorocyclobutane (PFCB) polymer. J. Wu, D. W. Smith

M124 Engineering modular protein scaffolds for high-sensitivity and specificity biosensing of small molecules. A. Y. Mercedes-Camacho, T. Grove

M125 Monitoring structural development in organic photovoltaic active layers during spin-coating. C. S. Lee, W. Yin, M. D. Dadmun

M126 Contrast variation in small-angle x-ray scattering as a means to isolate and characterize morphological features spanning common length scales in semicrystalline ionomers. M. Zhang, J. Park, R. B. Moore

M127 Novel method for immobilisation of invertebrate within macroporous polycrylamide cryogel. Z. M. Sahin, Z. Olcer, M. Ozmen, A. Tanriseven, F. Yilmaz

M128 Studies on development and dissolution rate of efavirenz using solid dispersions technique. A. Gorajana, C. Jo Ni, S. Garg, K. Dua

M129 Dissolution enhancement of cefuroxime axetil by solid dispersion technique. A. Gorajana, L. Mun Yew, S. Garg, K. Dua

M130 Dynamic mechanical properties of styrene ionomers containing sodium salts of aromatic dicarboxylic acids. K. Ko, H. Park, J. Kim, Y. Kim

M131 Disassembly and reassembly behaviors of ferritin and apoferritin in solution: A solution x-ray scattering study. H. Kim

M132 Roles of aromatic sodium dicarboxylate additives in methyl methacrylate ionomers. K. Ko, H. Park, J. Kim, Y. Kim

M133 Generation of giant unilamellar vesicles via electro-formation method. A. Kubilis, A. M. Eissa, N. R. Cameron

M134 Protease catalyzed oligomerization of l-lysine derivatives in aqueous solution. X. Qin, W. Xie, Q. Su, W. Du, R. A. Gross

M135 Amine functional monodisperse microbeads via precipitation polymerization of N-vinyl formamide: Immobilized laccase for benzidine based dyes degradation. B. Karagoz, G. Bayramoglu, B. Altintas, N. Bicak, M. Arica


M137 Synthesis of carboxyl-containing cellulose alkanoates for controlled oral drug delivery. H. Liu, B. P. Cherniawski, N. Kar, K. J. Edgar

M138 Biocompatible temperature-sensitive dendrimers encapsulating gold nanoparticles for photothermal therapy. X. Li, K. Takeda, E. Yuba, A. Harada, K. Kono
M139 Preparation of magnetic poly(N-vinylcaprolactam-co-acrylic acid)-based hybrid nanoparticles by nanoprecipitation. B. R. Lara, S. D. Medeiros, A. Elaissari, A. M. Santos

M140 Nano-structuring polymers with cyclodextrins. A. Gurarslan, A. S. Joijode, A. E. Tonelli

M141 In vitro controlled release of Ketoprofen from poly(N-vinylcaprolactam-co-acrylic acid) microparticles prepared by spray-drying technique. S. D. Medeiros, M. I. Ré, A. M. Santos

M142 Carboxylate selective lanthanide. D. Song, K. D. Shimizu

M143 Photoswitchable polymer nanoparticles for two-photon excitation fluorescent bioimaging. M. Zhu, G. Zhang, C. Li, W. Gong, M. P. Aldred

M144 3D topological control of stem cell differentiation. P. Viswanathan, S. Chirasatitsin, A. J. Engler, G. Battaglia

M145 Enzymatic degradable nitric oxide releasing polysaccharides. V. B. Damodaran, L. W. Place, M. J. Kipper, M. M. Reynolds

M146 Biomimetic hydrogels based on radiation crosslinked collagen for wound healing. L. Xu, X. Zhang, X. Huang, X. Chen

M147 Intracellular delivery of bioactive molecules via ROMP-polymers. O. Tezgel, G. N. Tew

M148 Photopolymerizable siloxane as PCR compatible and patternable material. A. Vitale, R. Bongiovanni, M. Quaglio, S. Turri

M149 Shape persistent polymersomes with tunable membrane permeability as smart carrier for targeting drug delivery. M. A. Yassin, D. Appelhans, B. Voit

M150 Effect of polymeric nanoparticles from aqueous paints in a WWT biological process. A. Nobre, A. Barreiros, S. Piçarra

M151 Neuron-targeted, brush-like polycationic copolymers with efficient gene delivery properties. H. Wei, J. G. Schellinger, S. H. Pun

M152 Aza-Michael reaction for polymer crosslinking: Structural prerequisites and gel properties. A. Southan, C. Schuh, G. Tovar

M153 Chitosan-cellulose nanocrystal polyelectrolyte-macroion complex: In vitro drug release properties. H. Wang, M. Roman

M154 Polystyrene-polyurethane scaffolds as force measurement probes for single cells. K. Sheets, J. Wang, A. Nain

M155 Developing microencapsulated probiotics for oral delivery. M. T. Cook, G. Tzortzis, D. Charalampopoulos, V. Khutoryanskiy

M156 One-step fabrication of radiopaque alginate microspheres for endovascular embolization via microfluidics. Q. Wang, A. Shen, Y. Yang

M157 Liquid chromatography under limiting conditions of desorption. Separation of blends containing low-solubility polymers and biodegradable polymers. A. Siskova, E. Macova, D. Berek


M159 The language of nanomaterials and its role in intellectual property, regulatory settings and consumer perception. J. K. Mills
Tuesday Morning, June 26 – Oral Sessions

**Symposium: Advances in Interdisciplinary Interactions**

Torgersen 1040
D. Schiraldi, G. Vanasco, T. Nishi, Organizers

- 10:30 International collaboration seed funding: Outcomes of the ACS global research experiences, exchanges, and training program (GREET). S. R. Meyers, B. D. Miller
- 10:50 Development of oral tablets with pharmacologically active fenugreek mucilage as excipient. S. Bahadur, A. Roy, R. Chanda, S. Saha, A. Choudhury, S. Das
- 11:10 Polymer nanocomposites for additive manufacturing. O. S. Ivanova, A. Elliott, T. A. Campbell, C. B. Williams
- 11:30 Novel chemistry for hydrogels: The impact on mechanical properties. G. Tew
- 12:10 Precision synthesis of fluorescent-containing vinyl ether polymers and study of their surface properties. T. Irita, T. Nagai, Y. Tanaka, K. Adachi, S. Kanaoka, A. Aoshima

**Symposium: Commercial Frontiers**

Torgersen 1050
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

Biobased Polymers and Entrepreneurship—M. Wubbolts, Session Leader

- 10:30 Polylactide triblock copolymers as pressure sensitive adhesives and thermoplastic elastomers. M. A. Hillmyer
- 11:05 Production and applications of microbial polyhydroxyalkanoates (PHA). G. Chen
- 11:40 Development of poly(lactic acid) green plastic and its application. X. Chen

**Symposium: Complex Macromolecular Systems I**

McBryde 113
T. Lodge, L. Leibler, Organizers

Polymer Gels and Self-Assembly—H. Tenhu, T. Meyer, Session Leaders

- 10:30 Structurally dynamic polymers as a route to stimuli-responsive films. S. J. Rowan
- 11:00 Supramolecular transient networks in water: From hydrogels to biomedical applications. P. Y. Dankers
- 11:30 Siloxane macromolecular networks capable of trapping organic fluids into solid gels. J. G. Matisons, N. Markovic

**Symposium: Energy, Optics, and Optoelectronics**

ICTAS 310
S. Cheng, Y. Cao, Organizers

Advanced Materials II—B. Yang, Session Leader

- 10:30 Bio-organic semiconductor devices based on DNA, indigo and derivatives. N. Sariciftci
- 11:00 Two-dimension-conjugated polymers with conjugated side chain for high efficiency polymer solar cells. Y. Li
- 11:50 Gel process: Fabrication of proton exchange membrane from polybenzimidazole. A. Sannigrahi, S. Ghosh, T. Jana

**Symposium: Macromolecules and Nanotechnology I**

McBryde 126
P. Hammond, K. Char, Organizers

Nanoscale Multilayer Assembly I—S. Sukhishvili, Session Leader

- 10:30 Hydrogen-bonded assemblies of poly(vinyl alcohol) and poly(acrylic acid): Opportunities for biofunctional thin films and anti-frost coatings. M. F. Rubner
- 11:00 Layer-by-layer assemblies of polymers or proteins through weak interactions. M. Akashi
- 11:30 Glass transitions of layer-by-layer assemblies determined using temperature-controlled quartz crystal microbalance with dissipation. A. Vidyasagar, J. Lutkenhaus
- 11:50 Catching the end-groups: Covalent layer-by-layer assembly of ultrathin coatings of homobifunctional PDMS. R. Gill, S. S. Qureshi, G. Decher, M. Mazhar, O. Felix

**Symposium: Macromolecules and Nanotechnology II**

McBryde 129
P. Hammond, K. Char, Organizers

Polymers for Nanomedicine IV—I. C. Kwon, Session Leader

- 10:30 Biocompatible smectic polymer nanoparticles with various morphologies. L. Jia, M. Liu, D. Lévy, A. Cao, V. Barbier, M. Li
- 10:50 Polyaniline nanofiber based biocompatible antioxidants and free radical sensors. A. Kumar, S. Banerjee
- 11:10 Targeted, polymer-based nanoparticles for delivery of small hydrophobic drug: Camptothecin. H. Han, M. E. Davis
Symposium: Macromolecules in Biotechnology and Medicine I
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

Polymeric Therapeutics I—T. Reineke, Session Leader
10:30 Polymeric Therapeutics I—S. Rowan, Session Leader

Polymeric Therapeutics II—Polymeric Therapeutics II—S. Rowan, Session Leader
10:30 Soft matter and mechanobiology in biomedicine: From treatment of brain tumors to matrix-based programming. D. E. Discher
11:00 Elastin-like recombinamer-based systems for biomedical and biotechnological uses. J. Rodriguez-Cabello
11:50 pH-responsive and biodegradable polymeric nanoparticles with potential application as tumour-specific drug delivery containers. F. C. Giacomelli, C. Giacomelli, V. Schmidt, E. Jäger, A. Jäger, K. Ulbrich, P. Stepanek

Symposium: Modern Methods of Characterization
McBryde 322
K. Beers, T. Chang, Organizers

Complex Fluids, Rheology and Thermal Analysis—K. Tanaka, P. Spicer, Session Leaders
10:30 Mesoscopic heterogeneity in supramolecular systems. A. Shundo, K. Tanaka
11:05 Self-crowding and reversible assembly of native proteins into nanoclusters for subcutaneous injection. T. M. Truskett
11:40 Characterisation of complex systems using combined rheological and optical structure analysis methods. P. Kamerkar, P. Heyer, J. Läuger

Symposium: Macromolecules in Biotechnology and Medicine II
Holden 114
B. Ratner, J. San Roman del Barrio, Organizers

Polymeric Therapeutics II—M. Rubinstein, Session Leader
10:30 Polyelectrolytes and Biopolymers—R. Colby, D. Vlassopoulos, Organizers

Polyelectrolytes and Biopolymers—M. Rubinstein, Session Leader
10:30 Gelation of DNA by topoisomerase II and its targeting anti-cancer drugs. J. R. van der Maarel, Y. Kim, B. Kundukad, A. Allahverdi, L. Nordenskiold, P. S. Doyle
11:00 Re-examination of dynamics of polyelectrolytes in salt-free dilute solutions by designing and using a novel neutral-charged-neutral reversible polymer. C. Wu
11:30 Polyelectrolyte-surfactant complex organogelators. K. A. Cavicchi, Y. Liu, G. Guzman, A. Lloyd
11:50 Monte Carlo simulation to investigate the cascade transition of a permuted polyelectrolyte chain. S. Uyaver

Symposium: Polymer Physics
Torgersen 1030
R. Colby, D. Vlassopoulos, Organizers

Polymers and Polymer-Based Membranes for Energy and Environmental Applications I
McBryde 100
B. Freeman, A. Thornton, Organizers

10:30 Solubility calculation of gases and liquids in glassy polymeric membranes: An overview. G. C. Sarti, M. De Angelis
11:00 Gas barrier properties of graphene/polymer nanocomposite membranes. H. Park, H. Yoon, H. Shin, B. Yoo

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications II
Randolph 331
B. Freeman, A. Thornton, Organizers

Water Purification—Y. M. Lee, M. Huiver, Session Leaders
10:30 Membrane research for water treatment facing the age of global mega-competition & collaboration. M. Kurihara
11:00 Self-assembled block copolymer membranes with high water flux and selectivity. K. Peinemann
11:30 Hydrophilic nano-channel formation via direct fluorination of disulfonated poly(arylene) copolymers in the solid state. C. Lee, K. Lee, O. Lane, J. E. McGrath, M. Zhang, R. B. Moore, M. D. Lingwood, L. A. Madsen, S. Wi, S. Lee, Y. Lee
11:50 Tailoring the pore size and surface properties of nanoporous membranes with click chemistry. J. Meng

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I
McBryde 100
B. Freeman, A. Thornton, Organizers

10:30 Solubility calculation of gases and liquids in glassy polymeric membranes: An overview. G. C. Sarti, M. De Angelis
11:00 Gas barrier properties of graphene/polymer nanocomposite membranes. H. Park, H. Yoon, H. Shin, B. Yoo
Symposium: Recent Developments in Synthesis I
Torgersen 2150
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis I—M. Malkoch, Session Leader
10:30  New synthetic strategies towards responsive nanocapsules and nanocarriers. B. Voit
11:00  Synthesis and self-assembly of functional degradable polymers. A. P. Dove
11:30  Block copolymers of polylactide and condensation polyesters. Z. J. Florjanczyk, A. Jóźwiak, A. Kundys, A. Plichta, M. Debowski

Symposium: Recent Developments in Synthesis II
Torgersen 1020
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis II—M. Coote, Session Leader
10:30  Exploring polymerization in confined environment: New methods to control polymer structure. H. Gao
11:00  Redox-active cobaltocenium-containing polymers by controlled polymerization. C. Tang, L. Ren, C. G. Hardy, J. Zhang, J. Hayat
11:30  Synthesis of high molar mass complex branched and star-branched poly(n-butyl acrylate) by combination of nitroxide-mediated polymerization and single electron transfer-living radical polymerization. M. Save, L. Billon, C. Derail
11:50  Rate coefficients for atom-transfer radical polymerization (ATRP) up to high pressure. H. Schroeder, J. Morick, M. Buback, K. Matyjaszewski

Symposium: Surfaces and Interfaces
Torgersen 1060
T. Russell, J. Kim, Organizers

Organic Photovoltaics—T. P. Russell, Session Leader
10:30  Thin film organic photovoltaics deposited from solution: Probing the mechanisms of morphology development. E. J. Kramer
11:00  Active layers morphologies for OPV devices through self-assembly. D. Venkataraman
11:30  Understanding disorder quantitatively and its effects on the electronic properties of organic semiconductors. A. Salleo, J. Rivnay, R. Noriega, M. F. Toney
Tuesday Afternoon, June 26 – Oral Sessions

Symposium: Complex Macromolecular Systems I
McBryde 113
T. Lodge, L. Leibler, Organizers

Polymer Gels and Self Assembly—P. Dankers, Y. Yang, Session Leaders
2:35  Water-based noncovalent polymers: Robustness, adaptivity, and function. B. Rybtchinski
3:05  Macrogel induced by microgel: Bridging and depletion mechanisms. C. Zhao, G. Yuan, C. Han
3:35  Break

Polymer Gels and Self-Assembly—G. Yuan, B. Rybtchinski, Session Leaders
3:50  Biohybrid glycopolymers mimic the gelation behavior of Alginate. A. Ghadban, M. Rinaudo, A. Heyraud, L. Albertin
4:10  Supramolecular polymer conjugation in water through host-guest complexations with Cucurbit[8]uril (CB[8]). F. Biedermann, O. A. Scherman
4:30  Interfacial modification in self-assembled block copolymers. W. Kuan, R. Roy, T. Epps, III
5:00  Thermodynamically controllable transition from 3D to 2D self-assembly of a hydrogelator induced by the phase behaviors of triblock copolymers. Y. Yang, L. Jin, H. Wang
5:20  Amphiphilic linear and star-like block copolymers. Thermoresponsive properties vs. chemical and topological structure. H. Tenuh, A. Alhoranta, J. Niskanen

Symposium: Macromolecules and Nanotechnology I
McBryde 126
P. Hammond, K. Char, Organizers

Nanoscale Multilayer Assembly II—S. Sukhishvili, Session Leader
1:45  Layered, light-responsive polymer nanocomposites. Z. Zhu, S. A. Sukhishvili
2:15  Vascularized 3D-tissue models constructed by polymeric nanofilm coating on cell surfaces. M. Matsusaki, A. Nishiguchi, M. Akashi
2:35  Polyelectrolyte multilayer films as platforms for stretched-induced reactive release. C. Vogt, J. Barthès, D. Mertz, J. Voegel, P. Schaaf, P. Lavalle
3:05  Thermolectric polymer nanocomposites. G. Moriarty, J. C. Grunlan
3:35  Break

Symposium: Macromolecules and Nanotechnology II
McBryde 129
P. Hammond, K. Char, Organizers

Carbon-Based Functional Polymer Nanocomposites I—P. Gopalan, Session Leader
1:45  High temperature mechanically adaptive polymer nanocomposites. R. Vaia, H. Koerner, M. Smith, A. Sellinger, D. Wang, L. Tan
2:15  Nanoporous carbon fibers from natural cellulosic precursors. D. Berek
2:35  Dispersion and selection of single-walled carbon nanotubes with polymers for printed electronics. M. B. Chan-Park
3:05  Mainchain-type organoboron polymers: Synthesis and photoluminescence properties. Y. Chujo
3:35  Break

Carbon-Based Functional Polymer Nanocomposites II—M. Chan-Park, Session Leader
3:50  Complexes of single-walled carbon nanotubes with conjugated polymers for sensory applications. A. Adronov, P. Imin, X. Pang
4:10  Polyolefins as matrix for graphene nanocomposites. G. B. Galland, D. S. Azamuba, N. R. Basso, T. Maraschin, R. Quijada, F. C. Fim, M. A. Milani
4:30  Carbon nanotubes decorated with silver nanoparticles for highly conductive composites: Epoxy-based pastes, metallic inks and stretchable conductive films. S. Baik
5:00  Effect of carbon nanotubes on the rheology and electrical resistivity of polymer blends. A. Ophir, L. Zonder, S. Kenig, S. McCarthy
5:20  High-performance polyetherimides with 0-D, 1-D and 2-D carbon nano reinforcements. M. Hegde, T. J. Dingemans, Y. Si, E. T. Samulski
5:40  Patternning graphene using block copolymers. P. Gopalan, M. Kim, S. Nathaniel, M. Arnold

Macromolecular Directed and Self Assembly IV—J. Lutkenhaus, Session Leader
3:50  Development of novel iterative methodology for precise synthesis of 5-arm ABCDE asymmetric star-branched poly(alkyl methacrylate)s. R. Goseki, Y. Ozama, E. Akemine, A. Hiroa
4:10  Supramolecular polymerization driven by host-enhanced noncovalent interactions. Y. Liu, Y. Yu, K. Liu, Z. Wang, X. Zhang
4:30  Photonic crystal sensing materials designed from polymeric nanoparticles and hydrogels. D. Arunbabu, T. Jana
5:00  Synthesis of polystyrene nanocomposites using PS-b-PVTES copolymers as precursors. J. F. Lopez, L. D. Perez, B. L. Lopez
5:40  Self-assembly of inorganic nanoparticle vesicles and tubules driven by tethered linear block copolymers. J. He, Y. Liu, T. Babu, Z. Wei, Z. Nie
Responsive Polymers—G. Tew, Session Leader

1:45 Engineering a polymeric device for the treatment of abdominal aortic aneurysms. D. Cohn, R. Abbas, R. Malal, A. Bloom

2:15 Thermally stable and mechanically robust polycarbonates that undergo controlled and complete backbone photodegradation. S. Sun, E. Chamsaz, A. Joy

2:35 Material considerations for annulus fibrosus and nucleus pulposus composite structures. S. Deb, E. Kemal

3:05 Polymeric drug-loaded devices for the prevention of lung tumor recurrence: From hydrophobic films to superhydrophobic meshes. M. Grinstaff

3:35 Break

3:50 Controlled release of therapeutics and cells from a hydrogel depot using light. A. M. Kasko, D. R. Griffin, J. L. Schlosser

4:10 Multifunctional polymers with structurally diverse thiol substituents for biomedical applications. V. B. Damodaran, K. A. Wold, M. M. Reynolds

4:30 Natural polymers for the enhancement of the functional properties of calcium phosphate bone cements. M. Ginebra, R. A. Perez


5:40 Polymers used in implantable biomedical devices. S. Lyu

Symposium: Macromolecules in Biotechnology and Medicine II
Holden 114

B. Ratner, J. San Roman del Barrio, Organizers

Functional Polymers—S. Pun, Session Leader

1:45 Micropatterned polymer surfaces obtained by breath figures formation and phase separation. C. Migliaresi, E. Carletti, D. Maniglio, A. Ruffo


2:35 Natural-derived polymer in medicine: Silk fibroin as a model. A. Motta, C. Migliaresi

3:05 Hollow polymer nanopods: From synthesis to application. K. Zhang, J. I. Cutler, D. Zheng, L. Hao

3:35 Break

3:50 New water-soluble biocide nanocomposites. M. N. Gorbunova, L. G. Chekanova


4:30 HA-SbQ cross-linked micelles as a carrier for paclitaxel. X. Liu, Y. Tao

5:00 Degradable micellar polymers by thiol-ene and chain polymerisation. R. Liska, P. Krajnc

5:20 Peptides as building blocks for functional biomaterials. M. L. Becker

5:40 Micelles based on gold-glycopolymer complexes as a macromolecular version of auranofin. M. Stenzel, S. Perason

Symposium: Modern Methods of Characterization
McBryde 332

K. Beers, T. Chang, Organizers

Complex Fluids, Rheology and Thermal Analysis—K. Tanaka, P. Spicer, Session Leaders

1:45 Real-time characterization of polymer film degradation with quartz crystal microbalance with dissipation monitoring. M. Dixon, M. C. Ferrarelli, M. Gormally, M. Johal

2:10 Enhanced deposition via new particle development and characterization. P. T. Spicer, M. Caggioni, J. Lenis, A. Bayles, E. Furst

2:45 Thin film calorimetry as a powerful tool for polymer characterisation. E. Zhuravlev, H. Huth, C. Schick

3:10 Zeta potential in solid surface analysis. V. Radhakrishnan, G. Langenburg

3:35 Break

3:50 Novel dynamic mechanical analysis and implications for numerical simulation. A. Arzoumanidis

4:15 Oscillatory shear rheology reveals concurrent softening and stiffening of a polymeric physical gel. R. H. Ewoldt, N. Bharadwaj


5:15 Resolving the decomposition profiles of polycarbodiimides. B. L. Batchelor, J. D. DeSousa, B. M. Novak, D. W. Smith, Jr.

Symposium: Surfaces and Interfaces
Holden 1060

T. Russell, J. Kim, T. Thurn-Albrecht, Organizers

Organic Photovoltaics—T. P. Russell, H. Hinnai, Session Leaders

1:45 Functionalized nanoparticles in solution-based assembly of hybrid photovoltaic materials. T. Emrick, R. Hayward, E. Pentzer, F. Bokel


3:05 Role of additives in the morphology of organic photovoltaics (OPV). M. F. Toney

3:35 Break

Responsive Surfaces and Interfaces—J. Jinjai, J. Grulian, Session Leaders

3:50 Temperature and/or pH responsive hierarchically self-organized bioinspired films. P. Escalé, L. Rubatat, F. Du Prez, M. Save, L. Billon

4:10 Chitin ultrathin films for biosensors. C. Wang, J. D. Kittle, C. Qian, Y. Zhang, M. Zhang, M. Roman, J. R. Morris, R. B. Moore, A. R. Esker

4:30 Toward dually responsive polyelectrolyte brushes. Y. Lu, S. Sukhishvili


5:10 Modifying polybutadiene surface properties with additives made by living anionic polymerisation. S. M. Kimani

5:30 Physical-chemical and tribological aspects of the adsorption of conditioning polymers on surfaces. G. S. Luengo, C. Cazeneuve, N. Baghdadi, C. Drummond, R. G. Rubio

<table>
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<td>Biobased Polymers and Entrepreneurship</td>
<td>M. Wubbolts, Organizers</td>
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<td>Metabolic engineering to increase production of malonyl-CoA derived products. M. D. Lynch</td>
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<td>Benzoxazine modified triglyceride oil as a coating material. C. Yildirim, A. T. Erciyes, Y. Yagci</td>
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<td>Isosorbide as a renewable biosource for phosphorous based flame retardants. Y. G. Daniel, B. A. Howell</td>
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<td>4:25</td>
<td>Non-phthalate plasticizers from a renewable biosource. W. Sun, B. A. Howell</td>
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<td>4:45</td>
<td>Polymer-bound antioxidants via ADMET-polymerization of functionalized, renewable monomers. S. Beer, I. P. Teasdale, O. Brueggemann</td>
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<td>5:05</td>
<td>Functionalization of chitosan to serve as a biobased flame retardant. M. R. Alomari, B. A. Howell, A. Dumitrascu, R. S. Operman</td>
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<td>Towards enhanced macroscale mobility in polymeric semiconductors: Control of structure, process, property relationships. E. Reichmanis, A. Aiyar, B. Fu, M. S. Park, J. O. Park, M. Srinivasarao, K. Nayani</td>
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<td>Y. Li, Session Leader</td>
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<td>Responsive polymer hybrid materials based on micro- and nano-ordered structures. Y. Li, Z. Wang, J. Zhang, B. Yang</td>
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<td>Towards interrelation of processing, microstructure, optoelectronic properties and device performance of polymer semiconductors. N. Stingelin</td>
<td>Optoelectronic Polymer</td>
<td>E. Reichmanis, Session Leader</td>
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<td>Monodisperse elastomer particles with anisotropic optical properties. V. Gortz, K. L. Holdsworth</td>
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<td>Anthraquinone imide based stimulus responsive materials: From NIR electrochromism to piezochromism. F. Chen, J. Zhang, X. Wan</td>
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<td>Design of molecular donors for organic photovoltaic devices. P. Blanchard</td>
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<td>5:40</td>
<td>Water plasticized melt spinning of polycacyclonitrile fibers as carbon fiber precursors. J. Huang, D. G. Baird</td>
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**Symposium: Commercial Frontiers**

**Torgersen 1050**

K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

**Biobased Polymers and Entrepreneurship**

M. Wubbolts, *Session Leader*

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**Symposium: Energy, Optics, and Optoelectronics**

**ICTAS 310**

S. Cheng, Y. Cao, Organizers

**Optoelectronic Polymer**

Y. Li, *Session Leader*

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**Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I**

**McBryde 100**

B. Freeman, A. Thornton, Organizers

**Gas Separation 2, Fuel Cells, Batteries, and Energy Storage Materials**

R. Guo, A. Thornton, *Session Leaders*

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<td>Polymer membrane-based advanced air conditioning (AC) system.</td>
<td>E. J. Amis, Z. J. Dardas, S. J. Kandil, R. J. Ranjan, K. J. Smith, T. J. Wagner</td>
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<td>2:35</td>
<td>High temperature polymer membranes for fuel cells and sustainable energy devices.</td>
<td>B. C. Benicewicz</td>
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<td>3:05</td>
<td>Disulfonated poly(arylene ether) copolymers as proton exchange membranes for H2/air and DMFC fuel cells.</td>
<td>J. E. McGrath</td>
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<td>Synthesis of ion conducting diblock copolymers via ATRP and click chemistry.</td>
<td>X. Chen, D. Luong, S. Granados-Foci</td>
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<tr>
<td>4:10</td>
<td>Solid state electrolytes for improved stability of electrochemical devices.</td>
<td>M. Forsyth, P. Howlett, D. R. MacFarlane, A. Noor, J. Pringle</td>
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<td>4:30</td>
<td>Advanced ion selective hybrid membranes for proton exchange membrane fuel cell.</td>
<td>N. K. Dutta, N. Roy Choudhury, S. Holdcroft</td>
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<td>5:00</td>
<td>Developing ionomers with controlled morphologies for anion exchange membranes.</td>
<td>S. C. Price, A. C. Jackson, K. K. Stokes, F. L. Beyer, Y. Ye, Y. A. Elabd</td>
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<td>5:20</td>
<td>Influences of confinement on the behavior of membranes and materials for energy technologies.</td>
<td>B. W. Rowe, K. A. Page, C. L. Soles</td>
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Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications II
Randolph 331
B. Freeman, A. Thornton, Organizers

Water Purification—Y. M. Lee, M. Guiver, Session Leaders
1:45 Nexar™ membranes for energy and environmental applications. C. L. Willis
2:15 Room temperature and solventless fabrication of antifouling zwitterionic coatings. R. Yang, K. K. Gleason
3:05 Next generation membranes for forward and pressure retarded osmosis. J. R. McCutcheon, N. Bui, J. Arena, L. Huang, S. Manickam
3:35 Break
4:30 Use of polymers as stabilizers and porogens in mixed matrix membrane synthesis. L. F. Greenlee
5:00 Alginate entrapped Fe-Zr mixed oxide for decontamination of fluoride from water bodies. R. Dey
5:20 Preparation and mechanism of PLLA/TPU porous membrane: Influence of coagulation bath composition. Q. Xing, R. Li, X. Dong, D. Wang
5:40 Synthesis and characterization of model crosslinked polyamide films for water purification. P. M. Johnson, E. P. Chan, J. Chung, J. Lee, C. M. Stafford

Symposium: Polymer Physics
Torgersen 1030
R. Colby, D. Vlassopoulos, Organizers

Block Copolymers—J. Kornfield, Session Leader
1:45 The low-force elasticity of (bio)polymers: There's plenty of room at the bottom. O. A. Saleh
2:35 Soft matter under hard confinement. G. A. Floudas
3:05 Self-assembled block copolymer membranes. V. Abetz, A. Jung, J. Hahn, K. Buhr, J. Clodt, S. Rangou, C. Abetz, V. Filiz
3:35 Break
3:50 Influence of block lengths on the morphology and properties of triblock PCL-PDMS-PCL triblock copolymers. M. Isik, E. Yilgor, I. Yilgor
4:10 Force spectroscopy of single molecules using correlated fluctuations of cantilevers. M. Radiom, J. Walz, M. Paul, W. Ducker
4:30 Simultaneous ionic and electronic conduction in block copolymers and their application in lithium battery electrodes. N. P. Balsara, A. E. Javier, S. N. Patel
5:00 Impact of diblock copolymer conformation on droplet coalescence, emulsification, and aggregation in immiscible homopolymer blends. D. L. Green, J. Fowler, E. Fried, T. Saito, R. Gao, T. E. Long
5:40 SCFT study on phase behaviors of linear, star, and cyclic block copolymers. F. Qiu

Symposium: Recent Developments in Synthesis I
Torgersen 2150
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis I—A. Dove, Session Leader
1:45 Synthesis of reactive and responsive copolyether materials. N. A. Lynd, P. Lundberg, B. F. Lee, A. Lee, C. J. Hawker
2:35 Dendritic macrothiols self-assembling properties to gold surfaces: From synthesis to cell interactions. K. Öberg, J. Ropponen, A. Lundgren, M. Bergling, M. Malkoch
3:05 From block copolymers to metallic gyroid structures and piezoelectric nanoporous networks. V. Voet, I. Vukovic, G. ten Brinke, K. Loos
3:35 Break
Technical Program – Tuesday, Oral Sessions

Synthesis I—A. Sanyal, Session Leader
3:50 Synthesis, photopolymerization and adhesive properties of various acidic monomers for an application in dental materials. Y. Catel, N. Moszner, U. Fischer
4:10 Multifunctional PEGs for biomedical application: Synthesis and purification. E. Sokolovskaya, S. Braese, J. Lahann
4:30 Epoxide copolymerization: From “multifunctional peg” to unusual polymer brushes and smart surfaces. H. Frey, C. Mangold, C. Tonhauser, V. Reuss, M. Schoemer, C. Dingels
5:20 Design and synthesis of thermal-responsive polypeptides from peglated poly-L-glutamates. Z. Li, C. Chen, S. Zhang, X. Fu
5:40 Application of CuAAC chemistry for preparing complex cyclic and multicyclic polymers. S. Grayson

Symposium: Recent Developments in Synthesis II
Torgersen 1020
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

Synthesis II—D. Lewis, Session Leader
1:45 Hierarchically structured materials and organic nanowires from oligopeptide-modified polymers. H. Frauenrath, R. Szilluweit, L. Tian, R. Marty, E. Crosier, S. Liang
2:15 Direct observation of radical addition reaction in radical polymerizations by time-resolved electron spin resonance spectroscopy. A. Kajiwara
3:05 Recent advances in the understanding of termination in radical polymerization from using the SP-PLP-EPR technique. M. Buback, B. Johannes, G. T. Russell
3:35 Break

Synthesis II—G. Russell, Session Leader
3:50 Ruthenium carborane complexes for catalyst economy ATRP of methyl methacrylate and styrene. I. D. Grishin, E. S. Turmina
4:10 Synthesis of heterotactic poly(4-vinyl pyridine) by free radical polymerization with cyclodextrin derivatives. R. Saito, H. Kamoshita, Y. Tokubuchi
4:30 Aget atom transfer radical polymerisations (ATRP) in aqueous media – mechanisms for loss of control. D. A. Lewis, Z. Kaya, M. Hermant
5:00 Biomimetic radical polymerization via cooperative assembly of segregating templates. R. McHale, J. P. Patterson, P. B. Zetterlund, R. K. O’Reilly
5:40 Living radical polymerization with organic catalyst via reversible complexation mechanism. A. Goto
Tuesday Evening, June 26 – Poster Sessions
Squires Student Center – Commonwealth Ballroom
T. E. Long, S. R. Turner, R. B. Moore, Session Leaders

7:40 p.m. – 9:40 p.m.

T001 Particle size modulation of chitosan nanoparticles loaded with zinc ions. Y. Monsalve, L. Sierra, M. Mesa, B. López

T002 BASF polymer material development for battery applications. S. Fleischmann

T003 New phosphorous-containing polymer sorbents. M. N. Gorbunova, T. D. Batueva

T004 Xanthan and chitosan matrices for controlled release of potassium nitrate fertilizer. M. E. Daraiio, M. A. Melaj

T005 Thermal characterization of poly(L-lactide) composites with carbon nanotubes. J. K. Palacios, C. Albano, G. González, R. V. Castillo, A. Karam, M. Covis

T006 Synthesis and characterization of thermal rearrangeable (tr) polyimides for gas separation membranes. L. Hai, S. J. Mecham, D. Lee, J. E. McGrath

T007 Synthesis and characterization of polyoxazoline-polysulfone triblock copolymers for potential water purification membranes. O. Celebi, C. H. Lee, Y. Lin, C. Arca, J. E. McGrath, J. S. Riffle


T010 Synthesis and characterization of cross-linked aromatic polyimides for gas separation membranes. K. E. Gaines, R. Guo, J. E. McGrath, B. D. Freeman, D. Sanders, Z. Smith

T011 Ionic-liquid-induced formation of polyaniline nanostructures. D. Pakhomov, E. Zagar, J. Vohlidal, M. Žigon

T012 Synthesis and characterization of superparamagnetic iron oxide nanoparticles stabilized by PEO-based ‘smart’ copolymers. N. Kwon, W. Choi, H. Kim, H. Kang, J. Lee, J. Kim

T013 Cross-linked polyethylene oxide fiber mats as polymer-gel electrolytes for lithium polymer batteries. S. J. Forbey, R. B. Moore

T014 Optimization of copper nanoparticle dispersion in a polypropylene matrix for antimicrobial applications. H. Palza, I. Pinochet, K. Delgado

T015 Functionalised carbon nanotube mixed matrix membranes of polymers of intrinsic microporosity (PIMs) for gas separation. V. Filiz, M. Khan, M. Rahman, S. Shishatskiy, G. Bengtson, V. Abetz


T017 Effect of silica based nanohybrids on dental composite resin restoratives. E. Jung


T020 Adsorption study of metal ions on electrochemically synthesized poly-(2-isopropyl aniline). A. M. Etorki

T021 Structure-property relationships of novel high polymer content polybenzimidazole (PBI) membranes. M. Mollelo, B. Benicewicz, H. Pioehn, H. Gao

T022 Enhancement in the mechanical properties of emulsion copolymers by the gradual variation in feed composition. I. Effect of particle size in the butyl acrylate-styrene system. F. F. Nuñez Pérez

T023 Short polymeric PBA-b-co-PAA surfactants: Self-association, dynamics and application in the shear-induced gelation of strawberry particles. A. Lamprou, D. Xie, H. Wu, G. Storti, M. Morbidelli

T024 Synthesis of a POSS-MWNT nanohybrid using ‘click’ chemistry. H. Ong, S. Clarke, M. Ginic-Markovic, K. Constantopoulos

T025 Influence of water ageing process in crystalline nanodomains of LLDPE/montmorillonite clay nanocomposites. D. Komatsu, C. M. Paraschos, A. Ruvolo-Filho


T027 Study on the hygroscopic properties of polyacrylic acid superabsorbent resin. B. Fuchen

T028 Study of the thermal, mechanical and electrical properties of the PP/graphene nanocomposites obtained by in situ polymerization. G. B. Galland, M. A. Milani, R. Quijada, N. R. Basso

T029 Effect of the size and surface modification on the barrier and mechanical properties of PP/SiO₂ nanocomposites. D. Bracho, H. Palza, R. Quijada

T030 Evaluation of PVA hydrolysis degree on hybrid membranes properties for DEFCS applications. J. Dutra Filho, A. S. Gomes


T033 Site isolation of receptors using hyperbranched polymers. G. Mann, L. J. Twyman

T034 Composites based on carbon fillers and SBS elastomer. H. P. Nogueira, M. Felisberti

T035 Multistage pH-responsive liposomes for mitochondrial targeting anticancer drug delivery. R. Mo, Q. Sun, J. Xue, N. Li, W. Li, C. Zhang, Q. Ping

T036 Role of Arginine (R) and Histidine (H) of RH cell-penetrating peptides in pH-selectivity for tumor targeting. T. Jiang, Z. Zhang, Y. Zhang, H. Lv, J. Zhou, C. Li, L. Hou, Q. Zhang

T037 Application of spray layer-by-layer assembled composite polyelectrolyte-clay thin films as selective layers in reverse osmosis membranes. J. R. Kovacs, P. T. Hammond

T038 Investigation of suspension colloidal stability and shape parameter of cellulose whiskers by bulk viscosity measurement. R. Nasserri

T039 Repeat-protein templates for assembly and patterning of nanostructured materials. R. Parker, T. Grove

T040 Investigation of acid diffusion during laser spike annealing with systematically designed photocatalyst. M. Krysan, B. Jung, M. O. Thompson, C. K. Ober

T041 Preparation and characterization of IPTES functionalized PVB nanofibers. C. Macit, E. Cakmakci, M. V. Kahraman

T042 Surface functionalization of graphene oxide toward solid acid catalyst. F. Kono, H. Endo, T. Kawai
T043 Unique supramolecular assembly and responsive behavior in amphiphilic polypeptide-based linear triblock copolymers. J. Ray, D. Savin, A. Johnson
T044 Preparation of triblock copolymer F108 vesicles as potential drug delivery systems. C. F. Santa, J. Palacio, L. Sierra, B. López
T045 Phase behavior of binary and ternary solution and ternary solutions and membranes formation by TIPS process. R. D. Marques, M. I. Felisberti
T046 Electrosynpoly(n-isopropylacrylamide)/graphene oxide composites. K. M. Greenman, Q. Hu, T. Zeng, B. Li
T048 Synthesis and characterization of poly(ethylene oxide)-poly(aryl ether)(PEO–PSF–PEO) triblock polymers. A. Neibiasagil, J. E. McGrath
T049 Synthesis of novel amphiphilic linear block copolymers based on glycopolymer. H. Arslan, O. Zirtıl, V. Büttün, G. Bayramoğlu
T050 Novel step–growth polymerization strategies for the preparation of segmented poly(dimethyl siloxane) copolymer elastomers. D. J. Buckwalter, T. E. Long
T051 Synthesis of porphyrin-based covalent organic frameworks. R. Altamimi
T052 Synthesis and characterization of melt processable acrylonitrile copolymers and blends. S. A. Beck, S. J. Mecham, P. Pisipati, J. E. McGrath
T053 Controlled fluorination level poly(aryl ether benzonitrile) hydrophobic–disulfonated poly(aryl ether sulfone) hydrophilic multiblock copolymer for direct methanol fuel cells (DMFCs). Y. Chen, J. R. Rowlett, C. H. Lee, Y. Kim, Q. Li, P. Zelenay, J. E. McGrath
T055 Hybrid miniemulsion photopolymerization in a continuous tubular reactor. V. Daniloska, R. Tomovska, J. M. Asua
T056 Proton-conductive composite membranes for vanadium redox flow batteries. D. Chen, S. Kim, M. A. Hickner
T058 Control of peptide assembly through directional interactions. I. Choi, M. Lee
T060 Urea functionalized multi-walled carbon nanotubes for polyurethane nanocomposites. D. L. Ingelfeld, T. E. Long
T062 Copolymerization behavior of diphenyl vinylphosphine and subsequent alkylation. A. S. Fersner, T. E. Long
T063 RAFT polymerization and lower critical solution temperatures (LCST) of salt- and temperature-responsive polyether-containing block copolymers. A. S. Fersner, A. E. Smith, T. E. Long
T064 Optimizing the nanostructure of organic photovoltaic systems. E. E. Daniels, R. Jemison, R. D. McCullough, T. Kowalewski
T065 A new route to sub-micron monodisperse latex from coalescence induced pickering emulsion polymerization in the presence of hydrophilic particles. I. Choi, W. Chiu
T066 High flame retardant foamlke materials based on alginate and sodium montmorillonite clay. H. Chen, Y. Wang, D. A. Schiraldi
T068 Electrical properties of triethylene glycol stabilized MnCo1-xFe2O4 nanoparticles. H. Erdemi, Z. Durmus, A. Baykal
T069 Toughened thermoplastic composites based on PMMA and graphite. A. R. Camilo, L. F. Silveira, M. S. Santos, V. R. Adriano, L. V. Scailioni, R. S. Marques, M. Felisberti
T070 Effect of solvent on the morphology of cellulose acetate/ polysloxane composites. L. R. Brandão, M. d. Gonçalves, I. P. Yoshida
T071 Polysulphone membranes containing silver nanoparticles. P. F. Andrade, M. d. Gonçalves
T072 Effects of UV-photocrosslinking on crystallization kinetics and morphology of cinnamoyl-functionalized poly(caprolactones). M. Gazinska, T. Naolou, J. Puskas, J. Kressler
T073 Mixed matrix polymeric membranes containing zeolites and room temperature ionic liquids. C. Atalay Oral, S. Tantekin Erolszam
T074 Chemical and biological approaches for bio-hybrid materials with tunable nanostructures. N. A. Carter, T. Z. Grove
T075 Synthesis of arborescent poly(isobutylene-b-p-methylstyrrene). A. Alvarez Albarran, J. E. Puskas, M. Luebbers
T076 Factorial design applied to the ultrasound-assisted deacetylation of chitin. J. A. Delezuk, S. P. Campana-Filho
T078 Monodisperse shape-specific shape memory polymeric devices. S. M. Brosnan, Y. Wang, J. M. DeSimone, V. S. Ashby
T079 Composite sPEEK / ZrO2 membranes with protic ionic liquid for fuel cell application. J. L. Batalha, A. S. Gomes
T080 Investigation of thermal sensitivity of poly(cyclopoly(methacryla mide). A. Albayrak, M. Sölener, O. S. Kabasakal, A. Aşıkın
T081 Preparation of unsaturated polymers using boric acid as a mild catalyst. N. Alemdar
T082 Shape-tunable nano building blocks based on mesogen-jacketed liquid crystalline polymers. X. Chen, X. Liang, C. Y. Li
T083 Effect of synthetic conditions on fluoride absorbency of poly(acrylamide) and poly(methacrylic acid) gels. M. H. Aakbari-Shad, A. Amini-Fazl, A. Ahmari, M. S. Amini-Fazl
T084 Poly(hydroxyethyl methacrylate) as a chloride absorbent: Effect of synthetic conditions. A. Amini-Fazl, M. H. Aakbari-Shad, M. S. Amini-Fazl, A. Ahmari
T086 Effect of imidazolium ionic liquid on vulcanization properties of NBR/clay. J. P. Fontana, M. A. Bizeto, M. A. Martins, F. F. Camilo, R. Faez
T087 Study of the non-isothermal quiescent crystallization of HDPE nanocomposites. C. A. Beatrice, A. L. Marcomini, A. C. Ferreira, R. E. Baret
T088 Functional nanomaterials from bis-urea macrocycles facilitate selective reactions. S. Dunn, L. S. Shimizu
T089 Hydroquinone based disulfonated poly(aryl ether) hydrophilic–hydrophobic block copolymers for proton exchange membranes. J. Rowlett, Y. Chen, C. Lee, J. E. McGrath
T090 PCP pincer palladium nanoparticles supported on modified crosslink merrifield resin: A novel heterogeneous catalyst for Heck coupling reactions. B. Tamami, M. Mohageheg, S. Ghasemi
T091 Polymeric n-heterocyclic carbene palladium complex-grafted silica as a novel recyclable nano-catalyst for Suzuki coupling reactions. B. Tamami, S. Ghasemi, F. Farjadian, H. Allahyari
T092 Effect of molecular structure parameters of poly(vinyl alcohol) cyano-ethyl ester on its dielectric properties. A. Rodionov

T093 Synthesis of very high molecular weight acrylonitrile/methacrylate (AN/MA) statistical copolymers. P. Pisipati, S. Mecham, S. Beck, J. McGrath

T094 Novel meta/para polybenzimidazole random copolymer membranes for high temperature PEMFCs. G. Qian, B. C. Benicewicz

T095 Gas transmission properties of polymers based on sterically hindered ethers of boron hydroxide. G. Timirbaeva

T096 Formation and characterization of reverse osmosis membranes from disulfonated poly(arylene ether) copolymers via alcohol-water nanodispersion casting. A. Shaver, C. H. Lee, K. S. Lee, J. Cook, B. D. Freeman, J. E. McGrath


T098 Efficient solution of protein surface adsorption using dissipative particle dynamics with specular chain reflection. J. Stanik, C. M. Colina


T100 Small peptide alpha-helix triggered by molecular cyclization. S. Sim, M. Lee

T101 The role of sulphonated polymer and macrovoid-free structure in the support layer for thin-film composite (TFC) forward osmosis (FO) membranes. N. Widjojo, T. Chung, C. Maletzko, M. Lee, S. Sim


T103 Polyamine nanotubes formation: Flowing template model. M. Trchova, J. Stejskal

T104 Hybrid conducting polymer-silvery composites. J. Stejskal, P. Bober, M. Trchova, J. Prokes, M. Omastova

T105 Synthesis and characterization of high molecular weight m-PBI for use as polymer electrolyte membranes. W. P. Steckle


T107 Surface functionalization of magnetite nanoparticle with polycation and its bioconjugation. T. Theppaleak, B. Rutnakornpituk, U. Wichai, T. Vilaivan, M. Rutnakornpituk

T108 Nanobiocomposites preparation and characterization of poly(lactic acid) and mixed poly(lactic acid)/polyethylene with natural and modified sepiolite, and degradable study. C. R. Villavicencio, M. A. Sabino


T110 Synthesis of RAFT-phosphate ligands to graft polymers from indium tin oxide nanoparticles. A. Viswanath, P. Tao, L. S. Schadler, B. C. Benicewicz

T111 Kinetic extraction, preconcentration, separation and trace determination of vanadium(V) with p-nitro calixarene hydroxamic acid by inductively coupled plasma mass spectrometry(ICP-MS). J. J. Shah

T112 Magnetic carbon nanotubes foams by CCVD method. C. R. Villavicencio, A. J. Peña

T113 Study of compounds of poly (lactic acid) with corn starch and montmorillonite clay. C. R. Villavicencio, C. Gonzalez

T114 Triptycene-polyureas: Porous polymers for targeted analyte sensing. S. A. Sydlik, T. M. Swager

T115 Multi-responsive gold nanoparticles. Y. Shi, Z. Zhu, S. A. Sukhishvili


T119 Composites membranes of polystyrene sulfonic acid -co-maleic anhydride) PSSAMA/poly(vinyl alcohol)(PVA)-Poly(methyl methacrylate)(PMMA) for fuel cell. O. O. Pedroza, P. D. Picciani, M. L. Dias


T122 Effect of silica coating thickness on the thermal conductivity of polyurethane/silicaMWNT composites. J. Zhao, F. Du, W. Cui, X. Zhou, X. Xie

T123 Assessing OMMT dispersion in PA6 nanocomposites using WAXS, TEM and X-RAY 3D microscope. K. Szustakiewicz, M. Gazinska, M. Zabska, J. M. Piglowski

T124 Fabrication of topological SERS surface with one-push wrinkle processing. M. Tamura, H. Endo, T. Kawai

T125 Synthesis and recognition properties of functionalized nanomaterials from pyridyl urea macrocycles. K. Roy, L. S. Shimizu

T126 Ionic polymer-metal composite actuators comprising functionalized nafion composite layers. Y. Yoo, Y. Jung

T127 Synthesis and characterization of multi-block poly(arylene ether sulfone) for anion exchange membrane. X. Yuan, N. Dixit, R. B. Moore, C. J. Cornelius

T128 Orientation and structure of single electrosynthesized nanofibers by confocal Raman spectroscopy. M. Richard-Lacroix, C. Pellerin

T129 Multiply-responsive microgels for conjugation. J. Gaulding, L. Lyon

T130 Supramolecular polymerization of amphiphilic rods triggered by guest molecule. H. Ku


T132 Investigating superacid sulfonate groups through measuring water-polymer interactions. S. B. Black, M. A. Hickner, Y. Chang, C. Bae

T133 Shape memory polymers based on blends of ethylene ionomers and fatty acid salts. R. Dolog, R. Weiss

T134 Poly(lactic acid)-(co-poly(butylene succinate) via a simple conjugating reaction using N,N'-dicyclohexylcarbodiimide and its roles in nucleation and compatibilization for PLA/PBSblends. R. Supthanyakul, N. Kaabbauthong, T. Thanpitcha, S. Chirachanchai

T135 PVDF nanocomposites for enhanced piezoelectric performance. C. Baur, J. DiMaio, E. McAllister, E. Wagener, B. Lund, S. Priya, D. Smith

T136 Polymeric micro/nanofiber assemblies with controlled morphology. J. Wang, A. Nain
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<td>Clickable colloidal particles: Platforms and surface-modification for affinity and magnetic field-assisted bioseparations.</td>
<td>M. Daniele</td>
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<td>T138</td>
<td>Acetal metathesis polymerization.</td>
<td>A. G. Pemba, J. A. Flores, S. A. Miller</td>
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<td>T139</td>
<td>Mechanical analysis of polymer composites reinforced with a sandwich structure composed of e-glass fibers &amp; polypropylene nonwoven mat.</td>
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<td>T140</td>
<td>Phase separation of polymer blends with dynamical asymmetry.</td>
<td>W. Yu, C. Zhou</td>
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<td>T141</td>
<td>RAFT microemulsion polymerization with a surface-active chain transfer agent: Effect of monomer solubility.</td>
<td>I. A. El-Hedok, J. M. O'Donnell</td>
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<td>T142</td>
<td>Effect of electric field intensity on nanofiber morphology.</td>
<td>A. Valipour, S. Hosseini, A. Pishevar</td>
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<td>T143</td>
<td>Competing against petroleum-based plastics with sustainable feedstocks.</td>
<td>L. Mialon, A. G. Pemba, E. Göktürk, S. A. Miller</td>
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<td>T144</td>
<td>High temperature shape memory polymer.</td>
<td>Y. Shi, R. A. Weiss</td>
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<td>Self-powered electrochromic polymer window.</td>
<td>C. Xu, S. Yang, M. Li, J. Zheng</td>
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<td>T146</td>
<td>Gas solubility and selectivity correlation to free volume in ionic liquids.</td>
<td>M. Shannon, J. Tedstone, S. Danielson</td>
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<td>T147</td>
<td>Synthesis and properties of phenylindane-containing polybenzimidazole (PBI) for proton-conducting membranes in fuel cells.</td>
<td>X. Li, B. C. Benicewicz</td>
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<td>T148</td>
<td>Development of a nanoscale optical fiber biosensor assay to detect and differentiate staphylococcus aureus.</td>
<td>Z. Zuo, R. Heffin, A. Bandara, T. Inzana</td>
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<td>T149</td>
<td>Bis (phenoxy) zinc catalyst: An active complex in ring-opening copolymerization of cyclohexene oxide and carboxylic acid anhydrides.</td>
<td>E. Hosseini Nejad, C. van Melis, M. Bouyahy, R. Duchateau, C. E. Koning</td>
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<td>T150</td>
<td>Polymerization in ionic liquids-based microemulsions.</td>
<td>F. Yan</td>
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Wednesday Morning, June 27 – Oral Sessions

**Symposium: Advances in Interdisciplinary Interactions**
Torgersen 1040
D. Schiraldi, G. Vanasco, T. Nishi, Organizers

**Advances in Polymer Education**—D. Schiraldi, Session Leader
10:30 Welcome
10:40 Polymer education in Japan for innovation. M. Sawamoto
11:25 Education in polymer science as part of soft matter nano-curriculum. A. R. Khokhlov

**Symposium: Commercial Frontiers**
Torgersen 1050
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

**Novel Polymer Processing Methods**—Z. Yang, Session Leader
10:30 Structuring of polymers and nanocomposites by micromoulding and solid phase orientation. P. D. Coates
11:10 Innovative Kraton Polymers enable sustainable applications. L. Freund, K. Wright

**Symposium: Complex Macromolecular Systems I**
McBryde 113
T. Lodge, L. Leibler, Organizers

**Functional Blends and Composites**—G. Fleury, Y. Yagci, Session Leaders
10:30 Nascent morphology of in-reactor polyolefin blends and the influence of phase separation on the crystallization morphology. C. C. Han, J. Jin, J. Du, H. Niu, J. Dong
11:00 New approaches for solventless nanofiber manufacturing. C. J. Ellison, K. Shanmuganathan, Y. Fang, D. Chou, R. K. Sankhagowit, P. Iyer
11:30 Macromolecular micro composites of polyamide-imide/polyetherimide. Third generation polymers. S. Palsule

**Symposium: Complex Macromolecular Systems II**
Holden 114
L. Leibler, T. Lodge, Organizers

**Polymer/ Ionic Liquid Composites Materials**—L. Madsen, R. Colby, K. Winey, T. Long, R. Moore, H. Gibson, Session Leaders
10:30 Imidazole and imidazolium-containing polymers for nucleic acid delivery and electro-active membranes. M. H. Allen, S. T. Hemp, A. E. Smith, T. E. Long
11:10 RAFT synthesis of ABA triblock copolymers with tunable affinity toward ionic liquids for electro-active applications. T. Wu, D. Wang, M. Zhang, J. R. Heflin, R. B. Moore, T. E. Long
11:30 Solvation effects on counterion transport in PEO-based single-ion conducting ionomers. J. Wang, R. H. Colby

**Symposium: Energy, Optics, and Optoelectronics**
ICTAS 310
S. Cheng, Y. Cao, Organizers

**Advanced Polymers**—L. Zhu, Session Leader
10:30 High temperature organic ferromagnetic compositions modified DNAs and discotic LC mimics. Y. Kwon, C. Lee, D. Choi, E. Koh, Y. Geerts, J. Jin
11:00 Tuning ion conducting pathways using holographic polymerization. C. Li, D. Smith, B. Dong, R. W. Marron, T. J. Bunning
11:50 Photoelectrochemical properties of doped polypyrrole: Application to hydrogen production upon visible light. B. Zitouni

**Symposium: Macromolecules and Nanotechnology I**
McBryde 126
P. Hammond, K. Char, Organizers

**New Macromolecular Nanostructures and Processing I**—R. O’Reilly, Session Leader
10:30 Multicompartiment hydrogels from ABC triblock terpolymers. M. A. Hillmyer
11:00 Self-organized multicompartiment nanostructures from new triblock terpolymers. A. H. Mueller
11:30 Hierarchically structured biomimetic honeycomb polymer films via breath figures and diblock copolymer self-assembly. M. Save, L. Billon, P. Escalé, L. Rubatat
11:50 Probing the self-assembly in side chain urethane methacrylate polymers by fluorescence. K. Kumar, A. Syamakamari

**Symposium: Macromolecules and Nanotechnology II**
McBryde 129
P. Hammond, K. Char, Organizers

**Polymer-Inorganic Hybrid Nanocomposites for Energy Systems**—K. Char, Session Leader
11:00 Creating continuous conducting polymer films using thermally stable nanorod surfactants. D. Kang, T. Kwon, M. P. Kim, J. Bang, B. J. Kim
11:50 Nanoporous gyroid metals from block copolymer templates via electroless plating. H. Hsueh, R. Ho
**Symposium: Macromolecules in Biotechnology and Medicine I**
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

**Biopolymer Design**—C. Patrickios, Session Leader

10:30  Core-shell carbohydrate-based block copolymers designed for the delivery of drugs and nucleic acids. **T. M. Reineke**, N. Ingle, L. Xue, M. Dalgin

11:00  Broad-spectrum antimicrobial cationic peptidopolyasaccharides. **P. Li**, M. B. Chan

11:30  Controlled synthesis of PHPMA and its derivatives containing block copolymers for anticancer drug delivery. **Z. Gan**


**Symposium: Modern Methods of Characterization**
McBryde 332
K. Beers, T. Chang, Organizers

**Advances in Imaging Methods and General Topics**—C. Ullal, Session Leader

10:30  SPM of synthetic, hybrid, and biological microgels. **V. V. Tsukruk**


11:40  Electron tomography of micron-thick specimens for hierarchical meso-structured materials. **H. Jinnavi**

**Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I**
McBryde 100
M. Silverstein, B. Freeman, A. Thornton, Organizers

**Porous Polymer**—N. Cameron, Session Leader

10:30  Polymers of intrinsic microporosity (PIMs) prepared using a novel polymerization reaction based on Tröger’s base formation. **N. B. McKeown**, M. Carta, M. Croad, C. G. Bezzu, R. Malpass-Evans, K. J. Msayib, Y. Rogan

11:00  Nanoporous polymers from reactive block polymers. **M. A. Hillmyer**


**Symposium: Polymer Physics**
Torgersen 1030
R. Colby, D. Vlassopoulos, Organizers

**Polymer Melt Dynamics**—D. Baird, Session Leader

10:30  Extensional rheology of polymer melts. **O. Hassager**

11:00  Few “simple” questions of polymer dynamics. **A. Likhtman**

11:30  Ratio function of dynamic moduli, its bounds and consistency of dynamic data for polymers. **J. Huang**


**Symposium: Recent Developments in Synthesis I**
Torgersen 2150
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis I**—B. Summerlin, Session Leader

10:30  Polymer mechanochemistry: Tactics for intimidating chemical reactions. **C. W. Bielawski**

11:00  Covalent organic frameworks as a platform for predictable molecular assembly. **W. R. Dichtel**, J. W. Colson, D. N. Bunck

11:30  Synthesis and self-organization in water of well-defined poly(oxazoline)-b-poly(acrylate) amphiphilic copolymers. B. Guillerm, V. Lapinte, S. Monge, J. Robin

11:50  Self-assembled nanostructures of luminescent organoboron block copolymers and star polymers. **F. Cheng**, F. Jaekle

**Symposium: Recent Developments in Synthesis II**
Torgersen 1020
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis II**—C. Luscombe, Session Leader

10:30  Charge transport through single molecules and polymer assemblies. S. Wei, B. Cappozzi, H. Tran, M. Gopinadhan, C. Osuji, L. Venkataraman, L. M. Campos

11:00  Design of semi-random conjugated polymers for organic solar cells. **B. C. Thompson**

11:30  Low band gap polymers based on cyclopentafused-polycyclic aromatic hydrocarbons. **K. N. Plunkett**

11:50  Synthesis of tetrafluorobenzene based pi-conjugated polymers via direct arylation. **T. Kanbara**

**Symposium: Surfaces and Interfaces**
Torgersen 1060
T. Russell, J. Kim, T. Turn-Albrecht, Organizers

**Crystallization and Ordering in Thin Films**—J. K. Kim, R. M. Ho, Session Leaders


11:00  Thermodynamics of crystal nucleation of polylethylene on graphite. A. Löhmann, T. Henze, T. Thurn-Albrecht

11:30  Multi-length scale studies of the confined crystallization in poly(l-lactide)-block-poly(ethylene glycol) copolymer. **C. C. Han**, J. Yang, Y. Liang
Wednesday Afternoon, June 27 – Oral Sessions

**Symposium: Complex Macromolecular Systems I**
McBryde 113
T. Lodge, L. Leibler, Organizers

**Functional Blends and Composites**—S. Ramakrishnan, C. Ellison, Session Leaders
1:45 All-conjugated block copoly(thiophene): Synthesis and chiroptical properties. **G. Koeckelberghs**
3:05 Break

**Functional Blends and Composites**—S. Palsule, G. Koeckelberghs, Session Leaders
4:30 New modification methods for high performance polybenzoxazine thermostems. B. Kiskan, K. D. Dogan, B. Aydogan, M. U. Kahveci, M. Imran, **Y. Yagci**
5:00 CO₂ assisted blending of biodegradable polyesters. **S. H. Murphy**, G. A. Leeke, M. J. Jenkins
5:40 Conformational control and assembly of polymer molecules induced by alkylene segment crystallization. **S. Ramakrishnan**, A. Z. Samuel, R. K. Roy

**Symposium: Complex Macromolecular Systems II**
Holden 114
T. Lodge, L. Leibler, Organizers

**Polymer/Ionic Liquid Composite Material**—L. Madsen, R. Colby, K. Winey, T. Long, R. Moore, H. Gibson, Session Leaders
1:45 Ion transport and storage of ionic liquids in ionic electroactive polymer actuators. Y. Liu, **M. Ghaffari**, R. Zhao, C. Lu, N. Winograd, Q. Zhang
2:25 Influence of plasticizer on conductivity and ion states in single-ion polymer conductors. **H. Zhao**, D. King, P. Painter, R. Colby, J. Runt
2:45 Influence of charge placement on the thermal and morphological properties of segmented multiblock copolyesters. **M. Zhang**, T. E. Long
3:25 Break

**Symposium: Macromolecular and Nanotechnology I**
McBryde 126
P. Hammond, K Char, Organizers

**New Macromolecular Nanostructures and Processing II**—A. Mueller, Session Leader
1:45 Using RAFT for the synthesis of functional nanomaterials. **R. O’Reilly**
2:15 Facile gas phase surface modification of wood cellulose microfibrils. **M. Fumagalli**, S. Molina-Boisseau, L. Heux
2:35 Designing novel devices with chemically vapor deposited polymers. **K. K. Gleason**
3:35 Break

**New Macromolecular Nanostructures and Processing III**—U. Jeong, Session Leader
3:50 Immobilized interphase in polymer nanocomposites. A. Wurm, A. Sargsyan, D. Possiech, B. Kretzschmar, **C. Schick**
4:10 Production of nanocaps by aerosol-photopolymerization. **E. Akgun**, W. Gerlinger, M. Wörner, B. Sachweh, J. Hubbuch
4:30 Confinement mechanism of size-dependant behavior of electrospun polymer nanofibers and their internal structure. **A. Arinstein**
5:00 A controlled growth of a cross-linked polymeric film. **G. G. Qiao**
Symposium: Macromolecules in Biotechnology and Medicine
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

Polymers for Emerging Technologies—M. Grinstaff, Session Leader
1:45 Role of hot melt extrusion in improving access to HIV treatment in Tanzania. D. Lefebvre, J. Morris, W. Schimana
2:15 Selenium-containing polymers. H. Xu
2:35 Novel protein transduction domain mimics inspired by natural proteins like HIV-TAT. G. Tew
3:35 Break
3:50 Application of water soluble polyfluorene derivative in proteomics and medical diagnostics. P. K. lyer
4:10 Efficiency of antimicrobial modified hyperbranched polymers analogous with different microstructures. M. Er-Rafik
4:30 TOF-SIMS imaging of Renagel® in the rat large intestine. E. Johnston
5:00 Simplifying oligopeptide synthesis by a unique chemo-enzymatic strategy. X. Qin, A. C. Khuong, R. A. Gross
5:20 Rheological characterization of aqueous dispersions of polymer nanoparticles for applications as injectable materials. R. Hernandez, V. Zamora-Mora, A. Perez, C. Mijangos

Symposium: Modern Methods of Characterization
McBryde 332
K. Beers, T. Chang, Organizers

Advances in Imaging Methods and General Topics—K. Beers, Session Leader
1:45 Imaging polymer nanostructures using visible light: STED microscopy of block copolymers and colloidal crystals. C. K. Ullal
2:20 Functional coherent Raman imaging. M. T. Cicerone, Y. J. Lee, C. Hartshorn, C. Camp
2:55 Superresolution four-wave mixing microscopy. S. J. Stranick
3:30 Break
4:50 Constitutive model for high rate deformation of semicrystalline polymers. H. Pouriayevali, V. Shim, Y. Guo
5:15 Mechanical properties of macroporous polymer foams prepared via emulsion templating (polyH/M/LIPes) and the impact of the internal phase ratio. N. Graebner, J. M. Hodgkinson, A. Bismarck
5:40 Mechanical properties of spherulitic semicrystalline nylon 6 from multiscale modeling. S. Arabnejad, D. W. Cheong, V. P. Shim
6:05 Characterization of polymers with the Kerr-Effect. R. Gurarslan, A. E. Tonelli

Symposium: Surfaces and Interfaces
Torgersen 1060
T. Russell, J. Kim, T. Thrun-Albrecht, Organizers

Crystallization and Ordering in Thin Films—J. Bang, J. Kumaki, Session Leaders
2:15 Block copolymer self-assemblies and their orientation control studied by electron mictororomography. H. Jinnai
2:35 Formation of hierarchically structured polymer single crystals. G. Reiter
3:05 Nanohybrids and nanohybrid thin films from templating of chiral block copolymers. R. Ho
3:35 Break

Colloids, Instabilities, Surfaces—J. Kumaki, J. Bang, Session Leaders
3:50 Visualization of two-dimensional single chain conformations solubilized in a miscible polymer blend monolayer by atomic force microscopy. K. Sugihara, J. Kumaki
4:20 Transformation of electrospun polymer fibers into microspheres driven by the Rayleigh instability. J. Chen, P. Fan
5:00 Effect of polymer-colloid interactions on polymer-mediated forces and selected static and dynamic properties of polymer-nanocolloid systems. A. Cheravyov, G. Heinrich
5:40 Effects of dual RF plasma treatment on polyimide films used as flexible substrate for solar cell applications. N. Demirci Sankir, H. Unver, E. Aydin, E. Uluer, D. Akbar, S. Bilikmen

Symposium: Advances in Interdisciplinary Interactions
Torgersen 1040
D. Schiraldi, G. Vancso, T. Nishi Organizers

Advances in Polymer Education—D. Schiraldi, Session Leader
1:45 Polymer science and engineering at the University of Southern Mississippi. R. Y. Lochhead
2:05 Modular, half semester graduate curriculum in polymers. D. A. Schiraldi
2:25 Polymer education in 2012: Where we are, where we’re going. L. J. Mathias, R. Badger
2:45 Polymer education for middle school students. C. A. Helfer, N. Makki, J. Milam, J. A. Beese
3:05 Changing lives: CLiPS Polymer envoys program for high school students. P. Bligh-Glover
3:25 Break
3:40 Controlled fabrication and modification of polymer and carbon nanocomposites for multifunctional applications. L. Dai
4:00 Rational design of polysaccharides for drug delivery. K. J. Edgar, L. S. Taylor, H. Liu, S. Fox, N. Kar, G. Ilevbare
4:20 High performance fibers: Past, present, and future. S. Kumar
4:40 Tutorial: Chemistry and properties of polymeric biomaterials – polymers, polyesters and polyanhydrides. J. Riffle
Symposium: Commercial Frontiers  
Torgersen 1050  
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

Novel Polymer Processing Methods—Z. Yang, Session Leader  

2:25 Preparation of biomedical polyolefins and investigation on their biocompatibility. J. Yin

3:05 New enzymatic approaches for polymer modification. E. Herrero Acero, K. Greime1, A. Marold, D. Ribitsch, I. Druzhinina, C. P. Kubicek, G. M. Guebitz

3:30 Break

Polymers for Environmental Applications—Z. Yang, Session Leader  
3:45 Expanding commercial frontiers for agricultural plastics: New materials and improved design. P. Picuno

4:25 Assessing the potential of silicone rubber waste as aggregate in asphalt mixes. C. G. dos Santos, N. L. Lopes Filho, G. M. Martins, H. C. Alves, E. A. Sa, G. Fernandes

4:50 Influence of phosphorus/nitrogen pendants on the flammability of styrenes. B. A. Howell

5:15 Water treatment with polymeric materials at various length scales. F. Liang, C. Zhang, D. Qiu

Symposium: Energy, Optics, and Optoelectronics  
ICTAS 310  
S. Cheng, Y. Cao, Organizers

Designed Optoelectronic Polymers—S. Holdcroft, Session Leader  
1:45 Some new design strategies for second-order nonlinear optical polymers and dendrimers. Z. Li

2:15 Non-linear absorption polymeric array from controlled radical polymerization and ‘click’ chemistry. Z. Chen, C. Liao, R. Price, K. S. Schanze

2:35 Novel ferroelectric polymers for high energy density and low loss dielectrics. L. Zhu

3:05 Anti-reflection, anti-scratch coatings via self-assembly of silica nanoparticles and crosslinking polyelectrolytes. J. S. Metzman, J. R. Hefflin

3:25 Break

Designed Optoelectronic Polymers—C. Li, Session Leader  
3:50 Colocalized plasmonic detection of nanoparticle-mediated DNA hybridization. Y. Oh, W. Lee, D. Kim

4:10 Holographic polymer dispersed liquid crystal gratings doped with functionalized POSS. H. Peng, S. Bi, X. Xie, X. Zhou, Y. Liao

4:30 Structural effects on the nano-scale morphology and conductivity of ionomer blends. S. Holdcroft, T. Weissbach, E. M. Tsang, A. C. Yang, R. Narimani, B. J. Friskin

5:00 Quantitative $^{1}H$ NMR analysis of the degradation mechanisms in anion exchange polymers for fuel cell applications. S. A. Nuñez, M. A. Hickner

5:20 Sulphonated poly(aryl ether ketone) designed for fuel cell membrane application. K. Marestin, E. Chauveau, R. Mercier


Symposium: Macromolecular and Nanotechnology II  
McBryde 129  
P. Hammond, K. Char, Organizers

Organic and Inorganic Polymer Nanocomposites I—R. Vaia, Session Leader  

2:05 Oil based nanocomposite of silane covered magnetite(Fe$_3$O$_4$). E. Bingöl, A. T. Erçiyes


2:45 Preparation of copper oxide nanotubes via an unusual assembly behavior of homopolymer PAA. Y. Liang, X. Hu

3:05 Incorporation of natural fibers as fillers into polyethylene matrix. M. Lutz, A. J. Van Reenen, M. L. Du Toit

3:25 Break

Organic and Inorganic Polymer Nanocomposites II—B. Kim, Session Leader  

4:00 Degradeable polyanhydride materials for imprint lithography applications. Q. Lou, D. A. Shipp

4:20 Organic/inorganic nanocomposites of polybenzimidazole: Role of inorganics structures. T. Jana, S. Ghosh

4:40 Yielding in concentrated protein solutions: Protein adsorption at the air/water interface or bulk aggregation? M. Castellanos, J. A. Pathak, R. H. Colby

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I  
McBryde 100  
M. Silverstein, B. Freeman, A. Thornton, Organizers

Porous Polymers—N. McKeown, Session Leader  
1:40 Porous polymers by emulsion templating. N. R. Cameron

2:10 Colloidally templated and porous conducting polymer arrays. R. C. Advincula

2:40 Open porous microcellular membranes by emulsion templating. I. Pulko, P. Krajnc

3:00 Porous emulsion-templated polymers from nanoparticle Pickering emulsions. M. S. Silverstein, I. Gurevitch

3:20 Break

3:40 Fundamentally green polymer/clay aerogels. D. A. Schiraldi

4:10 Supercapacitors gels produced by polymerization in frozen state. B. Mattiasson, H. Kirsebom

4:40 Porous membranes from stimuli responsive ionic liquid polymers. J. Téxter

5:00 Novel nanoporous membranes for Cr(VI) removal from aqueous solutions. M. Sankir, L. Semiz, N. Demirci Sankir

5:20 Virtual synthesis and characterization of intrinsically microporous materials. L. J. Abbott, K. E. Hart, C. M. Colina

5:40 Porous membranes based on electrosprun nanofibers and their applications. Y. Xia
### Symposium: Polymer Physics

**Torgersen 1030**

R. Colby, D. Vlassopoulos, Organizers

**Polymer Nanocomposites**—R. Register, Session Leader

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<td>P. J. Carreau, S. Abassi, A. Derdouri</td>
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### Symposium: Recent Developments in Synthesis I

**Torgersen 2150**

C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis I**—N. Lynd, Session Leader

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<td>D. Yao, Y. Chen</td>
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<td>Synthesis and adhesive properties of acrylates with H-bonding moities</td>
<td>S. Pensec, C. Fonteneau, O. Herscher, X. Callies, G. Ducouret, J. Chenal, L. Chazeau, C. Creton, L. Boutteilier</td>
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<td>Smart polymeric sensors based on responsive polymers</td>
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### Symposium: Recent Developments in Synthesis II

**Torgersen 1020**

C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis II**—B. Thompson, Session Leader

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### Symposium: Polymer Physics

**Torgersen 1030**

R. Colby, D. Vlassopoulos, Organizers

**Polymer Nanocomposites**—R. Register, Session Leader

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### Symposium: Recent Developments in Synthesis I

**Torgersen 2150**

C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis I**—N. Lynd, Session Leader

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<td>J. Goff, B. Arkles, E. Kimble</td>
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<td>Multifunctional polymers obtained by polycondensation reaction.</td>
<td>H. Keul, S. Ullmann, S. Mommer, M. Moeller</td>
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<td>Synthesis and polycondensation of bio-based macrodilols containing ferulic acid.</td>
<td>F. Pion, A. F. Reano, P. Ducrot, F. Allais</td>
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<td>Synthesis of poly(amic acid)s by thiol-ene polymerization.</td>
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Squires Student Center – Commonwealth Ballroom
T. E. Long, S. R. Turner, R. B. Moore, Session Leaders

7:40 p.m. – 9:40 p.m.

W001 Foam-forming and wetting ability of polymeric cationic surface-active substances. D. Usmanova, R. Ismailov, A. Mirhoji

W002 Thermosetting networks derived from disulfonated poly(arylène ethers) for water purification reverse osmosis membranes. B. J. Sundell, D. Lee, C. Lee, O. Lane, J. E. McGrath, J. Cook, B. D. Freeman

W003 Influence of counterion on the thermomechanical and rheological behavior of randomly sulfonated copolymers. M. Zhang, T. E. Long


W005 Dipole formation across polyethylene film exposed to inverted corona discharge. J. S. Bernardes, L. P. Santos, F. Galemebeck

W006 Control radical polymerization under ¹⁶O₂ γ-irradiation. Z. Zhang

W007 Helix-sense-selective polymerization of acylaryl phenylacetylene having two bulky imino substituents. Y. Zhang, M. Teraguchi, T. Kaneko, T. Aoki

W008 Synthetic receptor for phosphorylated peptides. S. Zhang, L. Han, C. Li, J. Wang, W. Wang, Z. Yuan

W009 Synthesis and characterization of starlike copolymers with defined structure based on multifunctional coupling agents in melt. H. Zhang, L. Jakisch, F. Böhme, B. Voit

W010 Synthesis of ABC type miktoarm star polymer of cyclic chemistry. G. Yilmaz, B. Iskin, Y. Yagci

W011 Photoinduced reverse ATRP of methyl methacrylate using camphorquinone/benzhydroxyl system. O. S. Taskin, G. Yilmaz, Y. Yagci


W013 Mesogenic initiator for anionic polymerization of epoxide monomers. A. Hesse, A. M. Hofmann, H. Frey

W014 Synthesis of low bandgap, alternating electron donor and acceptor conjugated polymers. C. Yu

W015 Living anionic polymerization of divinylbenzenes. S. Tanaka, M. Matsumoto, R. Goseki, T. Ishizone, A. Hirao

W016 Cyclic polymers with pendant carbazole via combination of ATRP and click reaction. X. Zhu, N. Zhou, X. Zhu

W017 Preparation of micron-sized monodisperse poly(ionic liquid) particles by dispersion polymerization. M. Tokuda, H. Minami, Y. Mizuta

W018 Effect of spacer length on association of nucleobase-containing ammonium ionenes. K. Zhang, M. Tamami, T. E. Long

W019 Synthesis and polymerization of precision boronic acid polymers. C. Simocket, T. Young, K. B. Wagener

W020 Synthesis of optically active poly(β-phenylethynyl-phenylacetylene)-aryleneethynylene)s bearing hydroxy groups and examination of the higher order structures. H. Sogawa, M. Shiotsubuki, F. Senda


W022 Synthesis of polystyrene-b-poly(TEMPO-substituted methacrylate) by anionic polymerization of the radical monomer for an electroactive material. T. Sukeyawa, H. Omata, I. Masuko, K. Oyaizu, H. Nishide

W023 Solvent effects in alternating ADMET polymerization. M. D. Schulz, K. B. Wagener

W024 Photoinduced free radical promoted copper(I)-catalyzed click chemistry for macromolecular syntheses. M. Tasdelen, G. Yilmaz, B. Iskin, Y. Yagci

W025 Synthesis and characterization of metal nanoparticles immobilized onto polymer-inorganic composite microgels. Y. Zhang


W027 Green synthesis of methacrylated trimethylolpropane cyclic carbonate, a novel monomer for isocyanate free functional polymers. S. Pyo, R. Hatti-Kaul


W029 Shape memory behavior of side-chain crystalline polymers. P. Fei, K. A. Caviechi


W033 Regioselective synthesis of curdian derivatives. R. Zhang, K. J. Edgar

W034 Corannulene containing polymers. M. C. Stuparu

W035 Self-healing polymers cross-linked by photoinduced radical reshuffling units. Y. Amamoto, H. Otsuka, A. Takahara, K. Matyjaszewski


W037 Tandem synthesis of alternating polymers from renewable resources. C. Robert, C. M. Thomas

W038 Facile synthesis of perfluorocycloalkenkenyl (PFCA) aryl ether polymers. B. Sharma, S. Liff, D. W. Smith

W039 Characterization of lipid bilayers formed from ionic liquid droplets. S. T. Young, T. E. Long, D. J. Leo


W041 Effects of alkyl glucosides on the enzymatic hydrolysis of model cellulose and lignocellulosic substrates. X. Tan, M. Roman

W042 Super toughened polylactide materials: Reactive blending with pre-heated processed natural rubber. C. Zhang, Y. Huang, L. Jiang, Y. Dan

W043 Exploring limitations at low copper levels with ARGET ATRP. K. A. Payne

W044 Incorporating GlyAlaGlyAla peptide into polyurethane backbone to mimic chain and aggregation structure of silk fibroin. H. Liu, W. Xu

W045 Optical DNA sensors based on photoluminescent polymers. A. R. Gulur Srinivas, D. Barker, J. Travers-Sejdic
W046 (N’E,N’E)-N,N-bis(pyridine-2yl) methylene benzene-1,4-diamine ligand as new binuclear catalyst complex in ATRP. H. Arslan, M. G. Kaptan, O. Zirtli, E. Hanhan, & Şen


W048 Characterization of polyethylene synthesized by zirconium single site catalysts. A. A. Alsaygh, F. D. Alsewailem, I. M. Al-Najjar, V. Kuznetsov


W050 Columnar coordination compounds of copper in the reactions of urethane formation. I. Davletbaeva

W051 Triblock copolymers of 1-(4-vinylbenzyl)imidazole and poly(ethylene glycol) for biological and electroactive technologies. C. Jangu, T. E. Long

W052 Facile synthetic route for conjugated bottle-brush polymers. S. Ahn, D. L. Pickel, W. M. Kochenba, S. M. Kilbey II

W053 Surface functionalization of silica nanoparticles and their assemblies on silicon wafer for Janus particle synthesis. J. Li, B. C. Benicewicz

W054 Synthesis of film-forming polyurethanes by using diphenylolpropane. I. N. Bakirova

W055 Visible light induced atom transfer radical polymerization. M. Ciftci, M. A. tasdelen, Y. Yagci

W056 Mechanistic investigations of controlled radical polymerization mediated by amine-bis(phenolate) iron(III) complexes. L. E. Allan, M. P. Shaver

W057 Interfacing liquid chromatography with multi-dimensional mass spectrometry for the structural characterization of a nonionic surfactant. B. C. Katzenmeyer, C. Wesdemiotis

W058 Supramolecular ionic copolymers. N. Brostowitz, K. A. Cavicchi, R. A. Weiss

W059 Recent technological advancements in polyetherimides. M. L. Kuhlman

W060 Photoswitchable gel assembly system based on complexation of cyclodextrins with azobenzenes. Y. Kobayashi, R. Kobayashi, Y. Takashima, A. Hashidzume, H. Yamaguchi, A. Harada

W061 Preparations of polystyrene/magnesium hydroxide composite particles by seeded dispersion sol-gel process in an ionic liquid. K. Kinoshita, H. Minami

W062 Polythiophene containing multifunctional phenacylamino photoinitiator. M. Aydin, K. D. Demirci, K. Takagi, Y. Yagci


W064 Controlled carboxatonic copolymerization of isobutylene with allyloccimene. A. L. Gergely, J. E. Puaskas, G. Kaszas


W067 Preparation and characterization of thermoplastic polyurethane polytetrafluoroethylene blends. F. Guner, I. Demiryal

W068 Synthesis and characterization of copolymers with high melting points. K. W. Barr, Y. Liu, S. R. Turner

W069 Effect of photo-curing time on constitutive and fracture properties of silicone semi interpenetrating network organogels. O. Kaymakci, B. Mukherjee, R. B. Moore, D. A. Dillard, R. C. Batra


W071 Synthesis of stimuli-responsive diblock copolymer brushes by combination of SET-LRP and RAFT polymerization techniques. S. Demirci, S. Kinali-Demirci, T. Caykara

W072 Synthesis and properties of triptycene-containing polyurethanes. Z. Chang, S. R. Turner


W074 Synthesis and characterization of macroporous DNA hydrogels. P. Karacan, O. Okay

W075 Superparamagnetic nanoparticles functionalized with surface-immobilized fluorescent conjugated polymers. S. Chatterjee, E. E. Nesterov, P. Russo

W076 Microlig films with tuned phase transition temperatures. K. C. Clarke, L. A. Lyon

W077 Fabrication of orthogonal peptide concentration gradient surfaces for directing stem cells differentiation. Y. Ma, L. A. Smith Callahan, C. M. Stafford, M. L. Becker

W078 Novel determination of niobium polymeric complication with phthalazinones and composite formation. A. A. Alowais


W080 Photochemical crosslinking of thermoresponse PEG-polymers. M. Henze, O. Prucker, J. Rühe

W081 Phase separation induced by a polymerization in a polystyrene-modified epoxy resin: Effect of polystyrene molecular mass. J. Lopez, M. Rico, B. Montero, R. Bellas

W082 Hierarchical porous PDMS membrane for diesel particulate filtration. X. Huang, A. Strzelec, N. S. Zacharia


W084 DSC thermal analysis of thermosetting bismaleimides eutectic mixures. A. Fallahi, A. Asfar Taromi

W085 Synthesis and complexation of photocrosslinkable liquid crystalline stilbene dimers. Y. Chai, X. Xu, C. Pugh


W087 Synthesis of biodegradable hyperbranching polycrylates. G. C. Garcia, C. Pugh


W089 Simulation of micellar shuttle poly(N-isopropylacrylamide-block-ethylene-oxide) from water to ionic liquid. L. Vicente, M. Rodríguez-Hidalgo, C. Soto-Figueroa

W090 Organic-inorganic hybrid polymer composites. M. Sitirichara

W091 Role of solvents in the unique radical polymerization initiated with some kinds of ionic liquids. S. Kanno

W092 Hierarchically porous polymer nanoparticle assemblies with modular functionality. K. L. Killops, C. Rodriguez, N. A. Lynd, C. J. Hawker

W093 Synthesis and enzymatic degradation of aliphatic-aromatic copolymers. P. G. Parzuchowski, K. Tomczyk, E. Wawrzynska, P. G. Parzuchowski

W094 Copolymerization of CO₂ and propylene oxide: Effect of double metal cyanide complex’s crystallinity on activity. Y. Qin, Z. Li, X. Wang, X. Zhao, F. Wang

W095 Polymerization of methacrylates containing cationic or PEO groups by various procedures of ATRP: Scope and limitations. R. Makuska, C. Visnevskij
Iron catalyzed ATRP of styrene with ppm levels of FeBr₃, using thermal initiators or reducing agents. K. Mukumoto, Y. Wang, K. Matyjaszewski

UV-visible absorption and fluorescence spectra of substituted polyacetylenes. T. Masuda, S. Watanabe, M. Hara, T. Sakaguchi, T. Hashimoto

Expanding the scope of vinyl ester polymerizations using vanadium bis(mino)pyridyl chloride complexes. M. R. Perry, L. E. Allan, M. P. Shaver


Straightforward and highly efficient synthesis of diselenocarbamates and diselenocarbonates for using as effective agent in controlled free radical polymerization. X. Pan, J. Zeng, J. Zhu, Z. Zhang, W. Zhang, X. Zhu

Redox-responsive self-healing materials formed from host-guest polymers. M. Nakahata, Y. Takashima, H. Yamaguchi, A. Harada


RAFT synthesis of CO₂-responsive (co)polymers. J. Quek, P. J. Roth, A. B. Lowe

Remarkable stereocontrol in the polymerization of 1-alkenes using a simple scandium catalyst system. Y. Pan, T. Xu, G. Yang, X. Lu

New strategies for the synthesis and end-functionalization of poly(2-vinylpyridine) by living anionic polymerization. A. Natalelo, C. Tonhauser, E. Berger-Nicoletti, H. Frey

Sugar overcomes oxygen inhibition in photoinitiated free radical polymerization. F. Oytun, M. U. Kahveci, Y. Yagci

Synthesis of poly(methyl methacrylate) particles by emulsifier-free, organometallium-mediated living radical emulsion polymerization (emulsion terp). Y. Kitayama, K. Kishida, H. Minami, M. Okubo


6-(4´-Ethyl-carboxy biphenyl-4-oxo)-hexanoic acid esters of hydroxypropylcellulose. D. López-Velázquez

Polyethylene surface corona charging without oxidation. L. P. Santos, J. S. Bernardes, F. Galembeck


Periodic vinyl copolymers containing y-butylactolactone via ADMET polymerization of disigned diene monomers with built-in sequence. Z. Li, L. Li, X. Deng, L. Zhang, B. Dong, F. Du, Z. Li

Miscibility and dynamics of phase separation of poly(ε-caprolactone) in acetone + carbon dioxide fluid mixtures at high pressures. E. Kiran, S. Takahashi, H. Grandelli, J. C. Hassler


Synthesis of poly(N-sulfonylamidines) via Cu-catalyzed multicomponent coupling reactions. T. Choi, I. Lee, H. Kim

UV-curable maleimide terminated telechelic oligomer. J. Wu, M. D. Soucek

Synthesis and characterization of silica encapsulated with sodium tungstate. D. Shen, Y. Li, Y. Shi, Z. Fu, Z. Zhang


Towards soluble one-handed helical chiral polystyrene. N. Meyer, R. Sander, C. M. Thiele, M. Rehahn


Synthesis of polydisulfides as dynamic materials. B. T. Michal, S. J. Rowan


Layer-by-layer (LbL) assembly of multilayer films made from chitosan and a synthetic humic acid polyelectrolyte. C. W. Slate, H. F. Webster

Linear vs. cyclic architecture of PEG nanoparticle coatings for drug delivery. G. R. Montenegro, C. Pugh

Implications of Nafion® morphology based upon uptake of large cationic complexes. E. M. Naughton, R. B. Moore


Potential of ionic liquids as a novel initiator of radical polymerization. S. Kanno

Mono-addition synthesis of polystyrene-fullerene (C₆₀) conjugates by thiol-ene chemistry. B. Iskin, G. Yilmaz, Y. Yagci

Synthesis and cationic ring-opening polymerization of novel 1,3-dehydrodiamantanes. S. Inomata, Y. Harada, Y. Nakamura, T. Ishizone

Preparation, electrical and thermal properties of processable conducting copolymers of poly(aniline and poly(2-bromoaniline). U. S. Sawai, A. M. Houmouda

Characterization of the reaction occuring between hydroxylated polydimethylsiloxanes and Ti(OBu)₄. P. Cassagnau, A. Seggio, V. Monteil, R. Spitz

Polymeric morphologies of precise acid- and ion-containing copolymers. K. I. Winny

Surface morphology study of biaxially oriented polypropylene, poly(methyl methacrylate) and polyvinyl chloride after low-pressure nitrogen DC plasma treatment. S. Pilehvar, P. Kaveh, H. Mortazavi, M. Ghoranneviss, F. Amanizadeh, A. Hasanadeh

Production of light weight automobile spare parts. A. H. Elalem, M. A. Alsharif, R. H. Belhaj

Solid-phase synthesis of ammonium ionones. M. T. Hunley, K. L. Beers

Effect of blending on thermal behavior of bismaleimide and cardanol based bisbenzoxazine monomer. N. K. Sini, J. Bijwe, I. K. Varma


Jute fiber /chemically modified polypropylene composites with in-situ fiber/matrix interfacial adhesion. S. Palsune, A. A. Singh, P. M. Lakra

Hydrophilization of silicone-urea copolymer surfaces. S. Bilgin, M. Isik, E. Yilgor, I. Yilgor

Thiol-functionalized poly(ethylene glycol)is. A. Southan, C. Schuh, G. Tovar

Coating SiC films on styrene acrilonitrile and polystyrene surfaces by magnetron sputterin. H. Atakul, D. Asureciller, M. Akay
W143 Investigation on the mechanism of inverse emulsion polymerization of acrylamide using redox initiators by working at critical micelle concentration (CMC) of emulsifier. Z. Abdollahi

W144 Pectin and polygalacturonic acid: Their model surfaces and interactions with cellulose and xyloglucan. X. Zhang, A. R. Esker


W146 Different morphologies and particle sizes distribution of different monomers solubility in water under ultrasonic irradiation. M. A. Bahattab

W147 Miscibility in molecular composites of poly-p-phenylene-terephthalamide (PPTA) / polyetheretherketone (PEEK). S. Palsule, A. Baijal

W148 General strategy for controlled formation of hydrogels at nano-, micro- and macro- scales. D. Wu, J. Zhang


W150 Solid-supported enzyme catalyst models for ring-opening polymerization. S. V. Orski, S. Kundu, R. Gross, K. L. Beers

W151 Thiolated and PEGylated nanoparticles for applications in mucosal drug delivery. V. Khutoryanskii, G. Irmukhametova, G. Mun

W152 Spontaneous wrinkling type patterns in azlactone based functional polymer thin films. M. Ramanathan, B. S. Lokitz, J. M. Messman, M. S. Kilbey

W153 Synthesis of pegylated silica nanoparticles for biomedical applications. K. Natte, G. Orts-Gil, W. Österle, J. Friedrich

W154 Novel functional macroporous supports: From preparation to application. A. Lamprou, B. de Neuvile, M. Soos, G. Storti, M. Morbidelli

W155 Polyurethane adhesive system from castor oil modified by a transesterification reaction. M. F. Valero

W156 Transamidation of polyamide-6,6 in the solid state. A. Jeyakumar

W157 Dip-coating regimes observed with supramolecular diblock copolymer thin films. S. Roland, C. Pellerin, R. E. Prudhomme, C. G. Bazuin

W158 In-situ polycondensation induced self-assembly micelles as a versatile particulate emulsifier. C. Yi

W159 Hydrated zinc chloride, a potential solvent for cellulose. S. Sen, J. D. Martin, D. A. Argyropoulos

W160 Comparative study of maleated and glycidyl methacrylate functionalized terpolymers as compatibilizers for LDPE-wood flour composites. E. Bayramli, Y. Altun, M. Dogan

W161 Functionalization of titanium, nano-diamond and graphene surfaces with macromolecules prepared from biomimetic anchors. P. Woisel, C. Zobrist, D. Fournier, C. Detrembleur, R. Boukherroub, S. Szunerits, L. Sambe

W162 Studies of degradation and hydration behaviour of triblock copolymers. F. Azemar


W164 Self-assembly of amphiphilic hexaphenylbenzene. K. Wunderlich, M. Klapper, K. Müllen

W165 Effect of surfactant concentration on the mechanical properties of hydrophobically modified polyacrylamide hydrogels. A. Argun, D. C. Tuncaboylu, O. Okay

W166 Hardwood/grafted polypropylene composites with in-situ interfacial adhesion generated by chemical modification of matrix. S. Palsule, P. M. Lakra, A. A. Singh
Thursday Morning, June 28 – Oral Sessions

**Symposium: Commercial Frontiers**
Torgersen 1050
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

**Polymers for Energy Applications**—K. Haider, Session Leader
10:30 Lithium ion battery and polymer materials. A. Yoshino
11:10 Layered inorganic oxide stabilized conducting polyaniline for electrode material of supercapacitor. X. Wang, S. Zhou, H. Zhang, J. Li, F. Wang
11:50 Rapid scalable electrostatic assembly for electrochemical energy. S. Kim, N. Hyder, K. Saetia, Y. Shao-Horn, P. T. Hammond

**Symposium: Complex Macromolecular Systems I**
McBryde 113
T. Lodge, L. Leibler, Organizers

**Novel Ion-Containing Polymeric Materials**—M. J. Park, Y. Elabd, Session Leaders
10:30 Water-soluble polyelectrolyte-surfactant complexes with crystalline cores. M. Uchman, M. Štěpánek, S. Prévost, M. Gradzielski, B. Angelov, K. Prochazka
11:00 CO2-switchable block copolymer self-assembly. D. Han, B. Yan, O. Boïsiére, Y. Zhao
11:30 MIPSILP: Polymers molecularly imprinted with ionic liquids as novel carrier systems for supported ionic liquid phase catalysis. W. Fuerst, O. Brueggemann

**Symposium: Complex Macromolecular Systems II**
Holden 114
L. Leibler, T. Lodge, Organizers

**Self-Assembly in Solution, Bulk, and Thin Films**—C. Ryu, G. Liu, K. Cavicchi, K. Wynne, R. Heflin, G. Battaglia, Session Leaders
11:10 Chemotactic polymersomes. S. Nyberg, D. Cecchin, L. Ruiz Perez, G. Battaglia
11:30 Phase behavior of pure pluronic block copolymers. H. Park, C. Y. Ryu
11:50 Self-assembled conductive network composites in ionic liquid polymeric electromechanical actuators. J. R. Heflin, R. Montazami, D. Wang

**Symposium: Macromolecules and Nanotechnology I**
ICTAS 310
S. Cheng, Y. Cao, Organizers

**Optoelectronic Polymers and Properties**—I. Samuel, Session Leader
10:30 Design concepts on conjugated polymers for highly efficient opto-electronic devices. S. Chen
11:00 Formation of stable PIN junction in polymer thin films: Mechanism, materials, and stretchable light emitting diodes. Q. Pei
11:30 Poly(p-phenylene vinylenes): Impact of constitutional defects on the performance of light-emitting devices. N. Vilbrandt, M. Rehahn
11:50 Thermally cross-linkable fluorene-bridged triptylenamines with terminal vinyl groups to enhance electroluminescence of MEH-PPV: Synthesis, curing and optoelectronic properties. C. Wu, Y. Yang, S. Fang, Y. Chen

**Symposium: Macromolecules and Nanotechnology II**
McBryde 126
P. Hammond, K. Char, Organizers

**Hierarchically Structured and Biomimetic Polymers**—D. Pochan, Session Leader
10:30 Stimuli-responsive mechanically dynamic cellulose whisker nanocomposites. S. J. Rowan
11:00 Stimuli-responsive nanostructures from aqueous assembly of rod amphiphiles. M. Lee
11:50 Hierarchical assembly of isodiameteric polymeric micro/ nanofibers in aligned configurations using STEP technique. J. Wang, A. Nain

**Symposium: Macromolecules and Nanotechnology III**
McBryde 129
P. Hammond, K. Char, Organizers

**Organic and Inorganic Polymer Nanocomposites**—S. Baik, Session Leader
10:30 Metal oxide/polymer hybrid nanoparticles with versatile functionality prepared by controlled surface crystallization. V. Fischer, K. Landlester, R. Munoz-Espi, I. Lieberwirth, G. Jakob
10:50 Using nanosilica to finely tune polyamide 6/polylpropylene blends morphology and properties. L. Bonnau, F. Laoutid, P. Dubois
11:10 Smart hybrid latexes as binders for paints with improved chemical resistance. S. Piçarra, J. Martinho, J. Farinha
11:30 Diamine-based benzoxazine dimers molecular assembly: Will molecular interaction under different concentrations induce different morphologies? P. Tanphibal, S. Chiranchanai
11:50 Effect of reaction conditions on the synthesis of macrocyclic amide compounds and a study of their complexation behavior using 1H NMR. H. F. Sleem
**Symposium: Macromolecules in Biotechnology and Medicine I**
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

***Biopolymer Design I***—A. Smith, **Session Leader**

10:30 Plastic viruses. G. Battaglia
11:00 Metal-chelating polymers for multiplexed immunoassays and for radioimmunotherapy. M. A. Winnik, D. Majonis, N. Illy, O. Ornatsky, P. Liu, Y. Lu, M. Nitz, A. J. Boyle, R. M. Reilly
11:50 Embedded enzymatic biomaterial degradation: Solution for tunable lifetime biomaterials. M. Ganesh, R. Gross

**Symposium: Macromolecules in Biotechnology and Medicine II**
Torgersen 1040
B. Ratner, J. San Roman del Barrio, Organizers

***Biopolymer Design II***—K. Edgar, **Session Leader**

10:30 Self-assembly of bionanoparticles for biomedical application. Q. Wang
11:00 Construction of giant glycopolymer vesicles. A. M. Eissa, N. R. Cameron
11:30 Effect of surface wetability and roughness on protein adsorption for castor oil/polyethylene glycol-based polyurethane surfaces. F. Guner

**Symposium: Modern Methods of Characterization**
McBryde 332
K. Beers, T. Chang, Organizers

***Advances in Scattering***—M. Gradzielski, **Session Leader**

10:30 Structure and dynamics of polymers by various quantum beams. T. Kanaya
11:05 Using copolymers to control the formation and stability of vesicles: a stopped-flow SANS/SAXS study. K. Bressel, S. Prevost, P. Heunemann, I. Grillo, J. Gummel, T. Narayanan, M. Gradzielski
11:40 Characterization of polymer micelles in copolymer solutions by scattering techniques. T. Sato

**Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I**
McBryde 100
B. Freeman, A. Thornton, Organizers

***Sustainable and Novel Polymeric Materials***—J. Meng, L. Greenlee, **Session Leader**

10:30 Protonic ionic liquids as novel coagulating solvents for regenerated silk fibroin. N. Byrne, X. Wang
11:00 Aluminum complexes for the living and immortal ring-opening polymerization of rac-β-butylactone, rac-lactide and ε-caprolactone. E. D. Cross, M. P. Shaver
11:30 Kinetic study of the production of poly(3-hydroxybutyrate) from jatropha oil by Cupriavidus necator H16. D. Reddy Prasad, A. Fatima, M. Rahman Khan, H. bt Abdullah, R. Yunus
11:50 Development of waste cotton fabrics (WCF) reinforced composites. M. S. Bodur, M. Bakkal, M. Savas, O. B. Berkalp

**Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications II**
Randolph 331
B. Freeman, A. Thornton, Organizers

***Materials for Water Purification and Fuel Cells, Batteries and Energy Storage Materials***—R. Guo, C. H. Lee, **Session Leaders**

10:30 Nanocomposite membranes for liquid separations: Sustainable water purification and bio-alcohol recovery. M. Lind
11:00 Removal of Cu2+ ions from aqueous solutions using crosslinked polyacrylamide (PAA) hydrogels. Z. Boyuñeqmez, &. Kaya, F. Tumsek, M. Sölener, O. S. Kabasakal
11:30 Surface modification of electropun cellulose acetate nanofibers via RAFT polymerization. S. Demirci, A. Celebioglu, T. Uyar
11:50 Synthesis of multifunctional superabsorbent hydrogel poly(acrylic acid/acrylamide/sodium humate) for the removal of Cu2+ ions and methylene blue dye. R. Singhal

**Symposium: Polymer Physics**
Torgersen 1030
R. Colby, D. Vlassopoulos, Organizers

***Polymer Networks and Gels***—B. Moore, **Session Leader**

11:00 Cavitation rheology of polymer networks: Living and not. A. J. Crosby
11:30 Study on complex phase separation behavior of the ultra-high molecular weight polyethylene/liquid paraffin system. S. Liu, C. Zhou, W. Yu

**Symposium: Recent Developments in Synthesis I**
Torgersen 2150
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

***Synthesis I***—P. Wilke, **Session Leader**

10:30 Mechanistic transformation of active species during vinyl polymerizations using dormant C–S covalent bond. K. Satoh, M. Kamigaito
11:00 Poly(styrene-block-vinyl acetate) synthesized with a singleRAFT agent with no “switching”. L. A. Dayter, K. A. Murphy, D. A. Shipp

**Symposium: Recent Developments in Synthesis II**
Torgersen 1020
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

***Synthesis II***—C. Tang, **Session Leader**

10:30 Lifting off polymer brushes: From surface coatings to nanoparticles. C. Ohm, C. K. Ober
11:00 Regio- and stereoregular polymers produced by ROMP of 3-substituted cyclooctenones. M. A. Hillmyer
11:30 Engineering polymers based on 1,1-diphenylethylene derivatives: Polymer substrates for membrane development. G. J. Summers, G. M. Kasiama, C. A. Summers
Symposium: Surfaces and Interfaces
Torgersen 1060
T. Russell, J. Kim, T. Thurn-Albrecht, Organizers

Responsive Surfaces and Intersurfaces—T. Thurn-Albrecht, Y. Iskender,
Session Leaders

10:30 Capsules from films and films with capsules for controlled and remote release. H. Moehwald

11:00 Biomimetic water transport surface inspired by wharf roach, ligia exotica. M. Shimomura, T. Hariyama

11:30 Writing with enzymes: Creating well-defined patterns and holes on biomaterials. M. Ganesh, R. Gross, M. Rafailovic

11:50 Evaluation of ROMP-based zwitterionic surfaces for nonfouling applications. K. A. Gibney, S. Colak, G. N. Tew
Thursday Afternoon, June 28 – Oral Sessions

Symposium: Complex Macromolecular Systems I
McBryde 113
T. Lodge, L. Leibler, Organizers

Novel Ion-Containing Polymeric Materials—K. Prochazka, Y. Zhao, Session Leaders
1:45 Morphology and conductivity of ionic liquid containing block copolymers under water-free conditions. M. Park, S. Kim, J. Hong
2:15 Ionomer design principles for ion-conducting energy materials. R. H. Colby, M. J. Janik, W. Liu, H. Shlau
2:35 Correlating morphology and ion transport in polymerized ionic liquids. K. I. Winey
3:05 Polymers in ionic liquids: Dawn of neoteric solvents and innovative materials. M. Watanabe
3:35 Break

Novel Ion-Containing Polymeric Materials—O. Brueggemann, Q. M. Zhang, Session Leaders
4:30 Polymeric ionic liquids; Broadening the properties and applications of polyelectrolytes. D. Mecerreyes Molero
5:00 Thermo-reversible gelation based on self-assembly of triblock copolymers in an ionic liquid. Y. Kitazawa, T. Ueki, S. Imaizumi, L. McIntosh, T. P. Lodge, M. Watanabe
5:20 Ionic liquid polymers of ionic liquids. H. Gu, D. Chojnowski, J. Texter

Symposium: Complex Macromolecular Systems II
Holden 114
T. Lodge, L. Leibler, Organizers

1:45 Morphological transitions and toroidal micelles from a ABC triblock copolymer containing a liquid crystalline block. X. Li, G. Liu
3:05 Multiphase and multiscalar structures of regioregular poly(3-hexylthiophene) in THF solution. H. Cheng, C. C. Han
3:35 Break

3:50 Nanodomains on bulk polymers: Novel hybrid surface modification characterized by wetting dynamics and morphology. S. S. Nair, D. B. Henke, S. Chakraborty, K. J. Wynne
4:10 Network constrained surface phase seperation. C. Wang, W. Zhang, K. J. Wynne
4:30 Polycarbonate copolymers with enhanced thermal performance. R. H. Lambeth, A. J. Hsieh
4:50 Probing the structure-property relationship in hydroxyl-functionalized polypropylenes. S. Gupta, T. M. Chung, R. A. Weiss
5:10 Probing polymer chain scission with mechanically induced chemiluminescence. Y. Chen, R. Jakobs, R. Sijbesma
5:30 Closed cell poly(oxyethylene) foam. N. Mantaranon, S. Chirachanchai, D. Sunaga
5:50 Simulation of reacting polymer melts by dissipative particle dynamics: New insights into microstructure formation. A. V. Berezkin, D. V. Guseva, Y. V. Kudryavtsev

Symposium: Macromolecules and Nanotechnology I
McBryde 126
P. Hammond, K. Char, Organizers

Hierarchically Structured and Biomimetic Polymers II—S. Rowan, Session Leader
1:45 Multicomartment/multicomponent micelles with block copolymer blending through kinetic control of solution assembly. D. Pochan
2:15 Preparation of double-hydrophilic block copolymer architectures through a supramolecular handshake binding motif. U. Rauwald, X. Loh, J. Del Barrio, T. Lee, J. M. Zayed, O. A. Scheman
2:35 One-step multipurpose surface functionalization by adhesive catecholine. H. Lee
3:35 Break

Hierarchically Structured and Biomimetic Polymers III—L. Korley, Session Leader
3:50 Towards supramolecular light-responsive thermoplastic elastomers. X. Wang, Y. Zhao, C. Bazuin
4:10 Structural changes induced by temperature on liquid crystalline polymer vesicles. S. Hocine, A. Brulet, L. Jia, M. Rager, J. Yang, A. Di-Cicco, M. Li
4:30 Macromolecular scaffolding of protein cages. J. Cornelissen
5:00 Structural changes in liquid crystal polymer vesicles induced by external stimuli: Temperature change, magnetic field or UV irradiation. A. Brulet, S. Hocine, M. Li, L. Jia
5:20 Maximizing signal transduction within macromolecules: Large and efficient conformational changes of photoresponsive foldamers. Z. Yu, S. Hecht
Symposium: Macromolecules in Biotechnology and Medicine I
Torgersen 3100
B. Ratner, J. San Roman del Barrio, Organizers

Responsive Biopolymers—M. Rowan, Session Leader
1:45 Multifunctional polymeric substrates in synthetic biology. J. Gaitsch, D. Appelhans, P. Schwille, G. Battaglia, B. Voit
2:15 Mixed polymer brush biointerface for controlling adhesion and differentiation of cells. K. Yancey
2:35 Immunosensor based on SERS active polymer-encapsulated nanotags. N. Guarrotxena
3:05 Development of easily processable polymer hydrogels for biomedical applications. C. Sammon, V. Boyes, C. Le Maitre, S. Sabnis, B. Barthrop, J. Foulkes
3:35 Break
3:50 Grafting polymers from bacterial cellulose via atom transfer radical polymerization. A. M. Barros-Timmons, P. S. Lacerda, C. S. Freire, A. J. Silvestre
4:10 Effect of the monomer ratio on the prednisone adsorption/desorption kinetics in PLGA prepared by step growth polymerization. C. P. Rueda, M. d. Corea, E. G. Palacios, J. J. Chairez
4:30 Bio-environment sensitive polymer nano-assemblies for intracellular drug release. X. Shuai
5:00 Rapid hemostat and sustained antibiotic release from multilayer films for wound dressings. B. B. Hsu, F. R. Jensen, P. T. Hammond
5:20 Fabrication of bioabsorbable surgical suture via electrospinning process. F. Haghighat, S. Hosseini

Symposium: Macromolecules in Biotechnology and Medicine II
Torgersen 1040
B. Ratner, J. San Roman del Barrio, Organizers

Biopolymer Design—J. Matson, Session Leader
1:45 Role of aligned polymer fibers in tissue engineering. K. Sheets, A. Nain
2:15 Microwave effects on water-soluble polymers in aqueous solutions. V. Khutoryanskiy, J. Cook
2:35 pH-sensitive polymer-modified liposomes as an antigen delivery system for cancer immunotherapy. E. Yuba, A. Harada, Y. Sakaniishi, S. Watarai, K. Kono
3:35 Break
3:50 Synthesis, characterization and shape memory properties of poly(ethylene glycol) and castor oil based polyurethanes. B. Adsay, D. Daigkayran, S. F. Güner
4:10 In vitro degradation of porous PLA/QDs scaffolds. X. Gong, C. Tang, W. Li, G. Zhang, X. Wang, J. Jiang, J. Liu
5:00 Blackberry-like particles assembled from fluorescent-labeled quaternized amphiphilic chitosan: Preparation and their potential for bioimaging. K. Taboonyong, T. Vilialvan, V. P. Hoven

Symposium: Modern Methods of Characterization
McBryde 332
K. Beers, T. Chang, Organizers

Advances in Scattering—M. Gradzielski, Session Leader
1:45 Molecular dynamics and neutron scattering study of the dependence of polyelectrolyte dendrimer conformation on counterion behavior. B. Wu, T. Egami, X. Li, Y. Liu, Y. Wang, C. Do, L. Porcar, K. Hong, L. Liu, G. Smith, S. Smith, W. Chen
2:20 Grazing incidence scattering studies of thin films of molten polymers and nanoparticles. S. Sinha

Symposium: Surfaces and Interfaces
Torgersen 1060
T. Russell, J. Kim, T. Thurn-Albrecht, Organizers

Responsive Surfaces and Interfaces—D. Patton, D. Y. Ryu, Session Leaders
2:15 Facile preparation of superhydrophobic polymer surfaces. I. Yilgor, S. Bilgin, M. Isik, E. Yilgor
2:35 Chemotaxis of active, self-oscillating polymer gels in solution. P. Dayal, A. Bhattacharya, O. Kuksenok, A. C. Balazs
3:05 New methods for the generation of surface-attached polymer networks – from multilayers to bioengineered surfaces. J. Rühe
3:35 Break

Responsive Surfaces and Interfaces—D. Y. Ryu, D. Patton, Session Leaders
3:50 Stimuli responsive plating of graphene from water. J. Texter, D. Ager
4:30 Directed assemblies of block copolymer-based supramolecules toward responsive nanomaterials. T. Xu
5:00 RAFT-mediated polymerization of 2-(2-methoxyethoxy)ethyl methacrylate from self-assembled monolayers on silicon substrate. T. Caykara, A. Zengin
5:20 Intumescent multilayer thin films as environmentally-friendly flame retardant. J. C. Grunlan
5:40 Functional surfaces derived from reactive polymers poly(glycidyl methacrylate) and poly(vinylidimethyloxalactone). J. M. Messman, B. S. Lokitz, J. Hinstrosa, E. Soto-Cantu, J. F. Ankner, S. Kilbey, II

Symposium: Commercial Frontiers
Torgersen 1050
K. Haider, Z. Yang, M. van Tol, M. Wubbolts, Organizers

Polymers for Energy Applications—K. Haider, Session Leader
Advanced Engineering Plastics and Thermosets—K. Haider, Session Leader
3:30 Break
3:45 Turning an unexpected discovery into a polymer/clay aerogel business. D. A. Schiraldi
4:25 Transparent blends of polycarbonate and polymethylmethacrylate. J. Kamps, R. I’Abee, T. Hoeks

Symposium: Energy, Optics, and Optoelectronics
ICTAS 310
S. Cheng, Y. Cao, Organizers

Optoelectronic Polymer Design—Q. Pei, Session Leader
1:45 Ring fusion and heteroatom effects in low band gap conjugated polymers for OFET and OPV applications. M. Heeny
2:15 A polymeric approach to understanding complicated solid-state interactions in mechanochromic luminescence materials. X. Sun, X. Zhang, X. Li, T. Xie, G. Zhang
3:05 Conjugated polymers as light harvesting complexes for two-photon applications. Q. Xu
3:35 Break

Optoelectronic Polymer Design—L. Wang, Session Leader
4:30 Phosphorescent dendrimers and polymers for solution processed PLED. L. Wang
5:00 Stilbene-containing partially aromatic liquid crystalline polyesters for electronic applications. A. M. Nelson, T. E. Long
5:40 Combination of molecular, morphological and interfacial engineering to achieve highly efficient and stable plastic solar cells. C. Chang, S. Hung, C. Hsu, Y. Cheng

Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications I
McBryde 100
B. Freeman, A. Thornton, Organizers

Sustainable and Novel Polymeric Materials—J. Meng, L. Greenlee, Session Leaders
2:15 In-vitro degradation of modified starch-blended thermoplastic polyurethane. M. F. Valero
2:35 Metal-ligand containing polymers. G. Tew
3:35 Break

3:50 Biohybrid materials synthesized via surface-initiated controlled radical polymerization of functional monomers from renewable wood fibers. M. Save, L. Billon
4:30 Polyionic liquids derived from new 4-vinylimidazolium monomers. T. W. Smith, M. Zhao, F. Yang, D. Smith, P. Cebe
5:00 Efficient enzymatic route to unsaturated poly(glycerol-co-oleic diacid) with linoleic acid side chains. Y. Zhang, S. Spinella, W. Xie, J. Cai, Y. Yang, W. Gross
5:20 Design of cyclodextrin-based photopolymers with enhanced molecular recognition properties: A template-free high-throughput approach. P. Xiao, T. Hettich, P. F. Corvini, Y. Duda, G. Schlotterbeck, P. Shahgaldian
5:40 Precision radical polymerization of renewable vinyl monomers. M. Kamigaito, K. Satoh
Symposium: Polymer and Polymer-Based Membranes for Energy and Environmental Applications II
Randolph 331
B. Freeman, A. Thornton, Organizers


2:15 Anion exchange membrane synthesized by radiation-induced RAFT-mediated graft polymerization for vanadium redox flow battery. Y. Wang, J. Peng, J. Yuan, J. Qiang, M. Zhai


3:35 Break

3:50 Investigation on polymer blend electrolytes for its application in EDLCs using coconut shell based activated charcoal. A. Jain, S. K. Tripathi, A. Gupta, M. Mishra

4:10 Electrochemical activity and biosensitivity of free-standing electrospun carbon nanofiber webs. X. Mao, F. Simeon, G. C. Rutledge, A. Hatton

4:30 Studies on nano gel polymer electrolyte based EDLCs. S. K. Tripathi, A. Jain, A. Gupta, M. Mishra

5:00 Correlating Raman spectroscopy characterization of organic photovoltaic active layers to polymer crystallinity. L. Thompson, B. Mandrell, H. Chen, J. P. Camden, M. D. Dadmun

5:20 Covalent triazine-based frameworks - cooler ways to solid-state gas storage materials. M. J. Bojdys, S. Ren, A. I. Cooper

5:40 Study on conjugated polymer/TiO2 composites used as photocatalyst of degrading organic pollutants. Y. Dan

Symposium: Polymer Physics
Torgersen 1030
R. Colby, D. Vlassopoulos, Organizers

Polyurethanes, Etc.—C. Creton, Session Leader

1:45 Preparation and structural characterization of high-strength ion gels. K. Fujii, H. Asai, M. Shibayama

2:15 Elongational rheology of nipam-based hydrogel. F. J. Stadler, T. Friedrich, B. Tieke, C. Bailly

2:35 Long term behaviour of cured PDCPD. Y. Vidavsky, Y. Navon, N. G. Lemcoff, M. Gottlieb

3:05 Combined main-chain/side-chain liquid crystalline polymer with main-chain on the basis of “jacketing” effect. E. Chen, H. Xie, H. Zhang, Q. Zhou

3:35 Break

3:50 Lattice - fluid binary parameters for phase separated mixtures of PCL-PMMA. C. C. Riccardi, E. Serrano, W. F. Schroeder


5:00 Surface coil effects on sheet polymer morphologies. M. Han, E. Sim

5:20 Multiscale simulation of polyurethane network. A. V. Berezkin, P. Biedermann

5:40 Molecular dynamics simulation study on the multiphase formation controlled by intersegmental interactions in polyurethanes. E. Yildirim, M. Yurtsever
**Symposium: Recent Developments in Synthesis I**
Torgersen 2150
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis I**—D. Shipp, Session Leader

1:45  Enzymatic transformation of polymers as precise tool for post-synthetic manipulation. **P. Wilke**, H. G. Börner

2:15  Fixed diradical generation on solid microspheres for surface initiated polymerization. **B. Gure**, **N. Bicak**

2:35  Lipase catalyzed synthesis of six-membered cyclic carbonates as monomers for production of isocyanate free polymers. **R. Hatti-Kaul**, **S. Pyo**


3:15  Cyclic polymers as a building block. **K. Zhang**

3:35  Break

**Synthesis I**—E. Drockenmuller, Session Leader

3:50  One-pot synthesis of branched P(St-co-MAn) copolymers via the mercapto chain-transfer polymerization and their self-assembly micelles applied to disperse carbon nanotubes. **J. Liu**, **X. Xiong**, **X. Liu**

4:10  Polymerization of 1,3-pentadiene and copolymerization with ethylene promoted by titanium complexes containing a tetradeinate [OSSO]-Type bis(phenolato) ligand. **C. Capacchione**, **C. Costabile**, **D. Saviello**, **A. Proto**

4:30  Synthesis and characterization of dendritic-like polymers based on the convergent assembly of poly(ethylene oxide) blocks onto zinc tetraphenylporphyrin branching point. **A. Wirotius**, **M. Schappacher**, **A. Deffieux**


5:30  Ambient synthesis of polyaniline in functionalized sulphonic acids in non-aqueous solvent. **K. G. Manjunatha**

**Symposium: Recent Developments in Synthesis II**
Torgersen 1020
C. Hawker, A. Mueller, E. Drockenmuller, Organizers

**Synthesis II**—M. Hillmyer, Session Leader


2:35  Titanium alkoxides complexes of aminol based ligands for the ring-opening polymerization of cyclic esters and carbonates. **D. Dakshinamoorthy**, **F. Peruch**


3:35  Break

**Synthesis II**—C. Ohm, Session Leader


4:30  Controlled synthesis of poly(ionic liquid) nanoparticles with highly ordered innerstructure. **J. Yuan**, **S. Soll**, **M. Antonietti**

5:00  Design and synthesis of folded polymeric structures. **P. J. Stals**, **A. R. Palmons**, **E. Meijer**


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Tuesday, June 26

Shopping at Concord Mills and South Park Mall • Charlotte, North Carolina

Depart from Squires Student Center at 8:00 a.m.
Arrive at Concord Mills at 11:00 a.m.
Depart from Concord Mills at 6:30 p.m.
Return to campus and all service hotels at 9:00 p.m.

All meals will be on your own. A shuttle between malls will be set mid-day if you wish to shop at both malls before leaving at 6:30 p.m.

Concord Mills features over 200 outlet stores including manufacturer and retail outlets, off-price retailers, and unique specialty stores. Representative stores include Levi’s, Nike, Coach, Jones New York, DYNY, Nautica, Oakley, and Perfumania.

South Park Mall is anchored by Nordstrom, Belk, Dillard’s, Macy’s and Neiman Marcus and offers stores ranging from luxury fashion such as Burberry and Louis Vuitton to casual staples such as J. Crew and Tommy Bahama.

Wednesday, June 27

Hiking at the Cascades Waterfall • Pembroke, Virginia

Depart from Squires Student Center at 11:00 a.m.
Return to Squires Student Center at 4:00 p.m.

Boxed lunch included

Experience outdoor adventure hiking in the New River Valley. This program provides fun, safe, and educational experiences in low risk outdoor adventures. The hike to the 66-foot Cascades waterfall, which can be hiked either using a more strenuous trail or recreational service road; though 4 miles, most anyone can hike to the falls at the top of the trail. This is one of the top recreational attractions in the New River Valley.

Tubing at the New River Junction • McCoy, Virginia

Depart from Squires Student Center at 11:00 a.m.
Return to Squires Student Center at 4:00 p.m.

Boxed lunch included

This program provides quality rental gear and valuable resources that make for the perfect educational adventure. As the river flows through Virginia into West Virginia, it picks up several warm water tributaries, making it an unusually warm water river. Along our stretch, the New River is wide, shallow, rocky, and clear, which allows the sun to further enhance the warm water conditions. The river can get as high as 85 or 90, but it is always less than your body temperature, so it still cools you off.
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Creating brighter lives

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Thank You to...

Michael Buback, IUPAC Polymer Division
Chris Ober, Past President, IUPAC Polymer Division

Thank you to the following Virginia Tech representatives:

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Teresa Dickerson, Macromolecules and Interfaces Institute
Tammy Jo Hiner, Macromolecules and Interfaces Institute
Vicki Long, Department of Chemistry
Susan Steeves, University Relations
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Dear Colleagues

On behalf of the organizing committee of the 2014 IUPAC World Polymer Congress or MACRO 2014 and the Chemical Society of Thailand (CST) under the patronage of Professor Dr HRH Princess Chulabhorn, it is my great pleasure to extend a warm welcome to you to participate in MACRO 2014 in the international convention and exhibition center, Chiangmai, THAILAND - The land of smile.

The MACRO2014 will provide the unprecedented opportunity for participants to learn the most recent advancement of polymer science and technology, as well as the occasion to bring together the participants from across region and around the world for research discussion, collaboration, and networking.

Chiangmai, as called the rose of north, is the land with full of the oriental culture and it is the capital city of the northern part of Thailand. During July, the weather in Chiangmai is nice which is about 25-28°C. The congress delegates will have a chance to impress the beauty of Lanna culture reflecting the local believes in Buddhist religion, enjoy shopping the local products, try Thai massage and experience the authentic Thai cuisine.

We are looking forward to giving a warm welcome to you, your family, and colleagues at MACRO 2014 in Chiangmai. We hope that you will find the congress both enjoyable and valuable. We thank you in advance for participating and contributing to the success of the event. Please mark your calendar on July 6-11, 2014.

With best wishes

Supawan Tantayanon
Chairperson of
The 2014 IUPAC World Polymer Congress
See inside back cover for exciting plans for the MACRO 2014 in Thailand!