

REPORT DOCUMENTATION PAGE			Form Approved OMB NO. 0704-0188		
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA, 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</p>					
1. REPORT DATE (DD-MM-YYYY) 10-01-2018		2. REPORT TYPE Final Report		3. DATES COVERED (From - To) 1-Aug-2016 - 31-Jan-2017	
4. TITLE AND SUBTITLE Final Report: 2016 Ionic Liquids Gordon Research Conference & Gordon Research Seminar			5a. CONTRACT NUMBER W911NF-16-1-0414		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER 611102		
6. AUTHORS			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAMES AND ADDRESSES Gordon Research Conferences, Inc. 512 Liberty Lane West Kingston, RI 02892 -1502			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS (ES) U.S. Army Research Office P.O. Box 12211 Research Triangle Park, NC 27709-2211			10. SPONSOR/MONITOR'S ACRONYM(S) ARO		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S) 69771-CH-CF.1		
12. DISTRIBUTION AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other documentation.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	15. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON Anja Mudring
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER 515-509-5616

RPPR Final Report as of 04-Jun-2018

Agency Code:

Proposal Number: 69771CHCF

Agreement Number: W911NF-16-1-0414

INVESTIGATOR(S):

Name: Anja Verena Mudring
Email: mudring@iastate.edu
Phone Number: 5155095616
Principal: Y

Organization: **Gordon Research Conferences, Inc.**

Address: 512 Liberty Lane, West Kingston, RI 028921502

Country: USA

DUNS Number: 075712877

EIN: 050300482

Report Date: 30-Apr-2017

Date Received: 10-Jan-2018

Final Report for Period Beginning 01-Aug-2016 and Ending 31-Jan-2017

Title: 2016 Ionic Liquids Gordon Research Conference & Gordon Research Seminar

Begin Performance Period: 01-Aug-2016

End Performance Period: 31-Jan-2017

Report Term: 0-Other

Submitted By: Nancy Ryan Gray

Email: nih@grc.org

Phone: (401) 360-1505

Distribution Statement: 1-Approved for public release; distribution is unlimited.

STEM Degrees: 0

STEM Participants: 0

Major Goals: Organizing a Gordon Research Conference involves extensive communication with the research community to identify important issues at the frontiers of the field, and solicit suggestions for speakers and discussion leaders to participate in the conference. The Chair then contacts prospective participants to invite them to talk and discuss the nature of their contributions. The Chair then communicates the topics and aims of the conference through web pages, contact with relevant international professional bodies and email to members of the research community around the world to encourage applications for participation in the conference. The Chair is then responsible for assessing and accepting the applications and fielding a host of questions both concerning the technical content and practical aspects of conference participation.

Accomplishments: World-wide activities in ionic liquids (ILs) are bursting and ionic liquid research is well past its infancy. The time is ready to inspect ILs for applications. For that reason, the 2016 Ionic Liquid GRC focused on the technological aspects of ionic liquids: The development of ILs as smart materials, their use for advanced technologies and the use of ILs in the manufacturing of high value products.

After first efforts in applying ILs as battery electrolytes in the late 1940s, it soon became apparent that ILs also possess other unique properties, e.g. a negligible vapor pressure which renders them attractive as safer and more environmentally benign solvent replacement in chemical processes. Increasing economic, societal and environmental awareness brings along an increasing demand for green technologies. Although ionic liquids are not intrinsically green, they can be designed to be green and the implementation of ILs in industrial processes may lead to a cleaner environment, enhanced work safety and a more efficient use of resources. For today and the future, probably the most important and desirable feature of ILs is that they can be intelligently engineered for a specific application due to their modular tuneability. Consequently, ILs are currently evolving from electrochemical and general solvents to novel materials with diverse applications such as lubricants or thermal, magnetic and optical fluids.

Ionic Liquids truly lie at the intersection of interdisciplinary sciences, where research areas intercept to create something new, promoting an "out-of-the-box" way of thinking. This was also reflected in the program of the 2nd Ionic Liquids GRC. This GRC provided an opportunity to meet and discuss scientific and technological topics with international experts. Academic and industrial scientists provided insight into key issues such as scale-up, costs, availability, governmental regulations, and other key parameters needed to plan new ventures. Poster sessions provided much time for interaction with ionic liquid scientists and engineers from around the world.

State-of-the-art research in ionic liquids is at a crossroads between established fundamental knowledge, new

RPPR Final Report

as of 04-Jun-2018

discoveries, and exciting challenges. Theoretical and applied efforts in the field are driving emerging technologies forward and continuously reshaping the complex chemical, structural, and dynamical landscape of ionic liquids. The 2016 Gordon Research Seminar (GRS) on Ionic Liquids focused on the challenges ahead and the opportunities of today that are key to fuel the evolution of next-generation ionic liquids. The program highlighted the role of ionic liquids as tunable materials with superior chemical, medicinal, environmental, mechanical, optical, magnetic, and electronic properties. The engaging and open format characteristic of Gordon Conferences gave young investigators the opportunity to present their work and to enjoy extended discussion and poster sessions.

Training Opportunities: Speakers, discussion leaders, poster presenters and attendees simultaneously contributed to and benefited from the collective skills and experience shared throughout the conference.

Results Dissemination: Conference Program

Honors and Awards: Nothing to Report

Protocol Activity Status:

Technology Transfer: Nothing to Report



GORDON RESEARCH CONFERENCES

FINAL PROGRESS REPORT

Army Research Office
Ionic Liquids GRC/GRS

Grant Number W911NF-16-1-0414

August 13-19, 2016

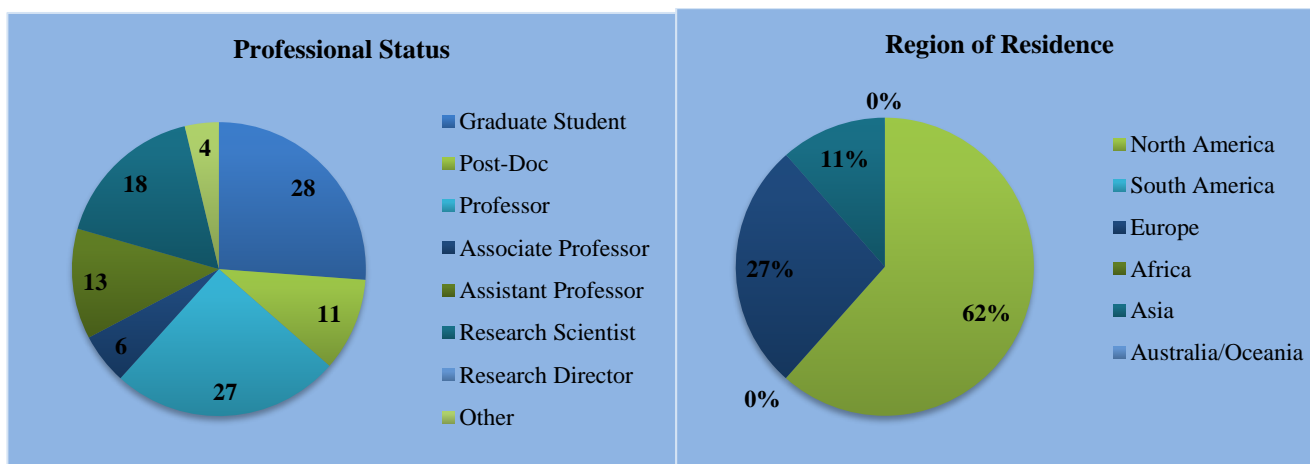
Operational Summary

The Gordon Research Conference (GRC) and Gordon Research Seminar (GRS) on Ionic Liquids were held at the Sunday River Conference Center in Newry, Maine from August 13-19, 2016. The meeting covered a variety of scientific topics and the content presented was highly rated by participants.



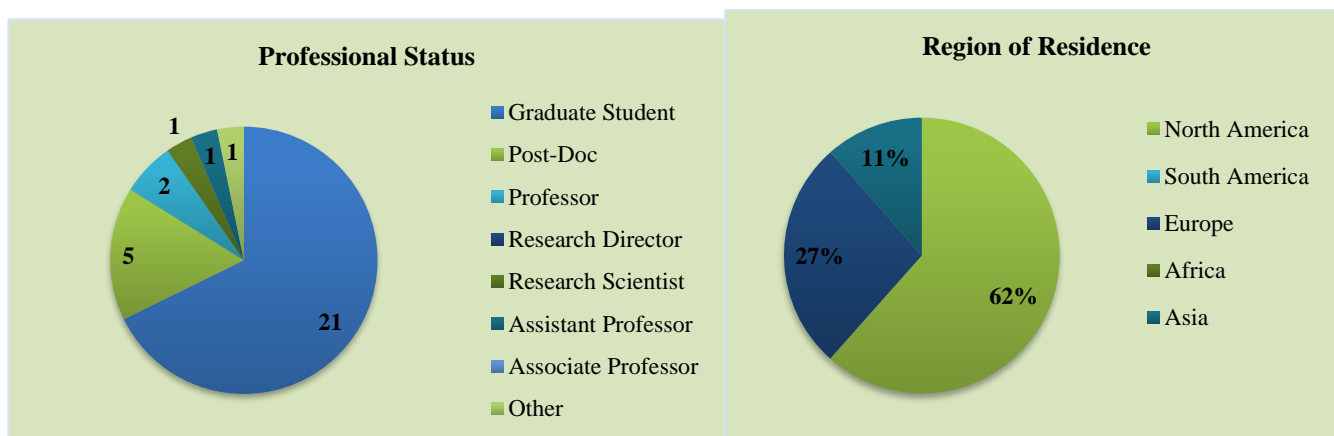
Conference Participants

The Conference had 107 participants. Scientists from academia represented 87% of the participants while attendees from government accounted for 8% and those from industry totaled 5%. The meeting also attracted a strong mix of young investigators and senior scientists. Students and post-docs accounted for 36% of all attendees. Approximately 26% of the participants at the 2016 meeting were women.



Seminar Participants

The Seminar was well-attended with 31 participants. Scientists from academia represented 90% of the participants while attendees from government accounted for 10%. Students and post docs combined accounted for 84% of all attendees. Approximately 32% of the participants at the 2016 seminar were women.



Conference Program

World-wide activities in ionic liquids (ILs) are bursting and ionic liquid research is well past its infancy. The time is ready to inspect ILs for applications. For that reason, the 2016 Ionic Liquid GRC focused on the technological aspects of ionic liquids: The development of ILs as smart materials, their use for advanced technologies and the use of ILs in the manufacturing of high value products.

After first efforts in applying ILs as battery electrolytes in the late 1940s, it soon became apparent that ILs also possess other unique properties, *e.g.* a negligible vapor pressure which renders them attractive as safer and more environmentally benign solvent replacement in chemical processes. Increasing economic, societal and environmental awareness brings along an increasing demand for green technologies. Although ionic liquids are not intrinsically green, they can be designed to be green and the implementation of ILs in industrial processes may lead to a cleaner environment, enhanced work safety and a more efficient use of resources. For today and the future, probably the most important and desirable feature of ILs is that they can be intelligently engineered for a specific application due to their modular tuneability. Consequently, ILs are currently evolving from electrochemical and general solvents to novel materials with diverse applications such as lubricants or thermal, magnetic and optical fluids.

Ionic Liquids truly lie at the intersection of interdisciplinary sciences, where research areas intercept to create something new, promoting an "out-of-the-box" way of thinking. This was also reflected in the program of the 2nd Ionic Liquids GRC. This GRC provided an opportunity to meet and discuss scientific and technological topics with international experts. Academic and industrial scientists provided insight into key issues such as scale-up, costs, availability, governmental regulations, and other key parameters needed to plan new ventures. Poster sessions provided much time for interaction with ionic liquid scientists and engineers from around the world.

State-of-the-art research in ionic liquids is at a crossroads between established fundamental knowledge, new discoveries, and exciting challenges. Theoretical and applied efforts in the field are driving emerging technologies forward and continuously reshaping the complex chemical, structural, and dynamical landscape of ionic liquids. The 2016 Gordon Research Seminar (GRS) on Ionic Liquids focused on the challenges ahead and the opportunities of today that are key to fuel the evolution of next-generation ionic liquids. The program highlighted the role of ionic liquids as tunable materials with superior chemical, medicinal, environmental, mechanical, optical, magnetic, and electronic properties. The engaging and open format characteristic of Gordon Conferences gave young investigators the opportunity to present their work and to enjoy extended discussion and poster sessions.

Conference Budget

Funding provided by the Army Research Office supported partial or full registration for 4 assistant professors, 3 associate professors, 12 professors and 2 research scientists at the GRC and partial registration for 3 graduate students, 2 postdocs, 1 assistant professor, 1 other and 2 professors at the GRS.

Conference Feedback

Participants had an opportunity to provide feedback at the end of the Conference. The feedback collected from the meeting was extremely positive. Evaluations included numerous positive remarks regarding the diversity in topic areas, the multiple poster sessions which provided adequate time to view all the posters and the discussions during the poster session and free time. Evaluations from the GRS included positive comments regarding the high quality oral presentations, panel discussion and the discussions during the poster sessions.

GRC would like to thank the Army Research Office for its continued support of the meetings. The contributions received from the Army Research Office have been critical to the success of the conferences and are having a measurable impact in advancing the frontiers of science worldwide.

Dr. Anja Mudring, GRC Chair
Ames Laboratory / Iowa State University

Dr. Juan Araque, GRS Chair
Benedictine College

Dr. Nancy Ryan Gray
President and Chief Executive Officer
Gordon Research Conferences

Ionic Liquids
Gordon Research Conference

Ionic Liquids for Future Technologies
August 14-19, 2016

Sunday River
Newry, ME

Chair: **Anja V. Mudring**
Vice Chair: **Jim Davis**

Contributors



Final Meeting Program

Sunday

2:00 pm - 9:00 pm Arrival and Check-in

6:00 pm Dinner

7:30 pm - 7:40 pm Welcome / Introductory Comments by GRC Site Staff

7:40 pm - 9:30 pm **Keynote Session: Ionic Liquids - Where Do We Stand and Where Do We Go?**

Discussion Leader: **Gerd Meyer** (Iowa State University, USA)

7:40 pm - 7:50 pm Introduction by Discussion Leader: Ionic Liquids - The Past and Future

7:50 pm - 8:30 pm	Robin Rogers (McGill University, Canada) "Ionic Liquids in Pharma: Is It Time for Manipulation of the Ionic Bond to Supplant Covalent Modification?"
8:30 pm - 8:40 pm	Discussion
8:40 pm - 9:20 pm	Barbara Kirchner (Rheinische Friedrich-Wilhelms-Universität Bonn, Germany) "Ionic Liquids: What Can Theory Do for Us?"
9:20 pm - 9:30 pm	Discussion

Monday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Ionic Liquids and Interfaces Discussion Leader: Juan Araque (Benedictine College, USA)
9:00 am - 9:45 am	Edward Castner (Rutgers University, USA) "Probing the Connections Between Structure, Friction, Transport and Reactivity in Ionic Liquids and Solutions"
9:45 am - 10:00 am	Discussion
10:00 am - 10:30 am	Coffee Break
10:30 am - 11:15 am	Robert Hayes (Rutgers University, USA) "Structure and Nanostructure in Ionic Liquids"
11:15 am - 11:30 am	Discussion
11:30 am - 12:15 pm	Sergei Glavatskhii (KTH Royal Institute of Technology, Sweden) "Ionic Liquids and Tribology"
12:15 pm - 12:30 pm	Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<u>Poster Session</u>
6:00 pm	Dinner
7:30 pm - 9:30 pm	Ionic Liquids as Nano-Ordered Solvents for Materials Design Discussion Leader: Arsalan Mirjafari (Florida Gulf Coast University, USA)
7:30 pm - 8:10 pm	Andreas Taubert (Universitaet Potsdam, Germany) "Ionic Liquids Guiding Materials Synthesis"
8:10 pm - 8:20 pm	Discussion

- 8:20 pm - 9:00 pm **Laurent Douce** (CNRS, France)
 "Ionic Liquid Crystals for Nanochemistry, Gene Delivery and Radiation Sensors"
- 9:00 pm - 9:10 pm Discussion
- 9:10 pm - 9:25 pm **Matthew Panzer** (Tufts University, USA)
 "Chemically Cross-Linked, Polymer-Supported Ionogels: Choosing the 'Right' Polymer for the Job"
- 9:25 pm - 9:30 pm Discussion

Tuesday

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Elucidating Structure and Interactions in Ionic Liquids**
 Discussion Leader: **Scott Shaw** (University of Iowa, USA)
- 9:00 am - 9:40 am **John Holbrey** (Queen's University Belfast, United Kingdom)
 "Using Neutron Scattering to Extract Atomistic Resolution of Structure-Property Relationships"
- 9:40 am - 9:50 am Discussion
- 9:50 am - 10:30 am **Andrea Mele** (Politecnico di Milano, Italy)
 "NMR Methods for Ionic Liquids Research"
- 10:30 am - 10:40 am Discussion
- 10:40 am - 11:10 am Coffee Break
- 11:10 am - 11:50 am **Alessandro Triolo** (Istituto Struttura della Materia, Consiglio Nazionale delle Ricerche, Italy)
 "Correlations Between Micro-and Mesoscopic Structural Properties in Neat and Mixed ILs"
- 11:50 am - 12:00 pm Discussion
- 12:00 pm - 12:20 pm **Sefik Suzer** (Bilkent University, Turkey)
 "XPS Enables Visualization of Charge Screening in Metal-Ionic Liquid Interfaces with Temporal- and Lateral-Resolution"
- 12:20 pm - 12:30 pm Discussion
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **Late-Breaking Topics**
 Discussion Leader: **Aaron Socha** (Proionic GmbH, Austria)
- 7:30 pm - 8:10 pm **Agilio Padua** (Université Blaise Pascal, Clermont-Ferrand II / CNRS, France)

"Exfoliation of van der Waals Materials in Ionic and Molecular Solvents"

8:10 pm - 8:20 pm Discussion

8:20 pm - 8:45 pm **Eamonn Conrad** (Solvay, Canada)

"Asking More from ChemistryTM: Addressing the Needs of Society with Sustainable Technology"

8:45 pm - 8:55 pm Discussion

8:55 pm - 9:20 pm **Peter Von Czarnecki** (IoLiTec - Ionic Liquids Technologies, USA)

"Recent Examples of Commercialized Applications of Ionic Liquids"

9:20 pm - 9:30 pm Discussion

Wednesday

7:30 am - 8:30 am Breakfast

8:30 am Group Photo

9:00 am - 12:30 pm **Ionic Liquids, Polymers and Where the Two Meet**

Discussion Leader: **Suojiang Zhang** (Chinese Academy of Sciences, China)

9:00 am - 9:40 am **Paul Trulove** (U.S. Naval Academy, USA)

"Modification and Manipulation of Natural Polymers Using Ionic Liquids"

9:40 am - 9:50 am Discussion

9:50 am - 10:30 am **Joshua Sangoro** (University of Tennessee, USA)

"Charge Transport and Dynamics in Molecular and Polymerized Ionic Liquids"

10:30 am - 10:40 am Discussion

10:40 am - 11:10 am Coffee Break

11:10 am - 11:50 am **Timothy Long** (Virginia Tech, USA)

"Ionic Liquids Inspiring the Design of Charged Polymers: The Allure of the Phosphorous Atom"

11:50 am - 12:00 pm Discussion

12:00 pm - 12:30 pm Poster Previews

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:00 pm - 7:30 pm Business Meeting

Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair

7:30 pm - 9:30 pm

Energy-Related Applications of Ionic Liquids

Discussion Leader: **Matthew Reichert** (University of South Alabama, USA)

7:30 pm - 8:15 pm

Jerry Boatz (Air Force Research Laboratory, AFRL/RQRP, USA)

"Theoretical Studies of Ionic Liquids+Nanoclusters as Hybrid Fuels"

8:15 pm - 8:30 pm

Discussion

8:30 pm - 9:15 pm

Jenny Pringle (Deakin University, Australia)

"Ionic Liquid Based Redox Electrolytes for Thermal Energy Harvesting"

9:15 pm - 9:30 pm

Discussion

Thursday

7:30 am - 8:30 am

Breakfast

9:00 am - 12:30 pm

Inorganic Chemistry's Contribution to Ionic Liquids

Discussion Leader: **Mihkel Koel** (Tallinn University of Technology, Estonia)

9:00 am - 9:45 am

Andreas Bund (Technische Universität Ilmenau, Germany)

"Electrodeposition of Refractory Metals from Ionic Liquids"

9:45 am - 10:00 am

Discussion

10:00 am - 10:30 am

Coffee Break

10:30 am - 11:15 am

Patricia Hunt (Imperial College London, United Kingdom)

"Inorganic Ionic Liquids"

11:15 am - 11:30 am

Discussion

11:30 am - 12:15 pm

Jared Anderson (Iowa State University, USA)

"Ionic Liquids and Magnetic Ionic Liquids in Separation Science"

12:15 pm - 12:30 pm

Discussion

12:30 pm

Lunch

1:30 pm - 4:00 pm

Free Time

4:00 pm - 5:30 pm

Poster Session

5:30 pm - 7:30 pm

Ionic Liquids for Future Sustainable Technologies

Discussion Leader: **Gabriela Gurau** (525 Solutions, Inc., USA)

5:30 pm - 6:15 pm

Anders Riisager (Technical University of Denmark, Denmark)

"Ionic Liquids and Their Application in Catalysis"

6:15 pm - 6:30 pm

Discussion

6:30 pm - 6:45 pm

Marco Haumann (Friedrich-Alexander-Universitat Erlangen-Nurnberg (FAU), Germany)

"Surface Influences on Catalytic Performance of Supported Ionic Liquid Phase (SILP) Materials"

6:45 pm - 6:50 pm Discussion

6:50 pm - 7:20 pm **Katharina Schröder** (Vienna University of Technology, Austria)

"From Waste Utilization to Food Control: New Out-of-the-Box Applications for Biomass Treatment with Ionic Liquids"

7:20 pm - 7:30 pm Discussion

8:00 pm Dinner

Friday

7:30 am - 8:30 am Breakfast

9:00 am Departure

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army or U.S. Government position, policy, or decision, unless so designated by other documentation.

Ionic Liquids (GRS)
Gordon Research Seminar

Ionic Liquids for Future Technologies
August 13-14, 2016

Sunday River
Newry, ME

Chairs: **Juan Araque** & **Kevin Clark**

Contributors



Final Meeting Program

Saturday

2:00 pm - 5:00 pm	Arrival and Check-in
3:30 pm - 3:45 pm	Introductory Comments by GRC Site Staff / Welcome by the GRS Conference Chair
3:45 pm - 4:30 pm	Paving the Way Between Theory, Design, and Application Discussion Leader: Suraj Dev Prakash Dhiman (Brookhaven National Laboratory, USA)
3:45 pm - 4:00 pm	Ana Ferreira (University of Aveiro, Portugal) "Extraction and Purification of Antibodies Using Aqueous Biphasic Systems Comprising Ionic Liquids"
4:00 pm - 4:10 pm	Discussion
4:10 pm - 4:25 pm	Christopher Rumble (The Pennsylvania State University, USA) "Small Molecule Rotational Dynamics in Ionic Liquids"
4:25 pm - 4:30 pm	Discussion
4:30 pm - 6:00 pm	<u>Poster Session</u>
6:00 pm	Dinner
7:30 pm - 9:30 pm	Theory, Emerging Applications, and Where They Meet Discussion Leader: Paula Berton (McGill University, Canada)
7:30 pm - 7:45 pm	Oldamur Holloczki (University of Bonn, Germany) "On the Activity of Carbene Catalysts in Ionic Liquid Solvents"
7:45 pm - 7:55 pm	Discussion
7:55 pm - 8:10 pm	Sudhir Ravula (University of Missouri, USA) "Ferromagnetic Mesoporous Carbons Derived from the Cyclotrimerization of Alkyne-Functionalized Ionic Liquids and Their Application in Aqueous Dye Removal"
8:10 pm - 8:20 pm	Discussion
8:20 pm - 8:35 pm	Joshua Reid (University of York, United Kingdom) "Structure and Dynamics in Protic Ionic Liquid Systems"
8:35 pm - 8:45 pm	Discussion
8:45 pm - 9:00 pm	Shiori Suzuki (Kanazawa University, Japan) "The Reaction Mechanism of a Direct Trans-Esterification of Raw Biomass in Ionic Liquids"
9:00 pm - 9:10 pm	Discussion
9:10 pm - 9:25 pm	Chip Smith (University of Missouri, USA) "Confinement in Multipurpose Cellulosic Ionogels and the Ionogels' Applications"

9:25 pm - 9:30 pm Discussion

Sunday

7:30 am - 8:30 am Breakfast

9:00 am - 11:00 am **Fast Forward: The Future of Ionic Liquids, Now**

Discussion Leader: **Thomas Brinzer** (University of Pittsburgh, USA)

9:00 am - 9:15 am **Koji Osawa** (Brookhaven National Laboratory, USA)

"Photoinduced Radical Generation, Cage Escape and Recombination in Ionic Liquids"

9:15 am - 9:25 am Discussion

9:25 am - 9:40 am **Andrew Tibbits** (University of Delaware, USA)

"Allylic Ionic Liquids as Building Blocks for Ion Conductive Thiol-Ene Polymer Networks"

9:40 am - 9:50 am Discussion

9:50 am - 10:05 am **Ian Njoroge** (Vanderbilt University, USA)

"Surface-Initiated Polymerization of Ionic Liquids: Anion Effects on the Ion Transfer Properties of Surface-Tethered Poly Ionic Liquids"

10:05 am - 10:15 am Discussion

10:15 am - 10:30 am **Helena Passos** (CICECO - Aveiro Institute of Materials, University of Aveiro, Portugal)

"Characterization of the Coexisting Phases Polarities of Ionic-Liquid-Based Aqueous Biphasic Systems"

10:30 am - 10:40 am Discussion

10:40 am - 10:55 am **Betul Uralcan** (Princeton University, USA)

"Concentration Fluctuations and Capacitive Response in Dense Ionic Solutions"

10:55 am - 11:00 am Discussion

11:00 am - 12:30 pm Poster Session

Coffee will be served in the poster area from 11:00 am - 11:30 am

12:30 pm Lunch

1:30 pm - 2:30 pm **Mentorship Component: Career Panel Discussions**

Discussion Leaders: **Juan Araque** (Benedictine College, USA) and **Kevin Clark** (Iowa State University, USA)

1:30 pm - 2:30 pm Panel Discussion

"Career Development in Academia and National Labs"

- **Jim Davis** (University of South Alabama, USA)
- **Gerd Meyer** (Iowa State University, USA)
- **James Wishart** (Brookhaven National Laboratory, USA)

2:30 pm - 3:00 pm Evaluation Period

Fill in GRS Evaluation Forms

3:00 pm Seminar Concludes

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army or U.S. Government position, policy, or decision, unless so designated by other documentation.

Ionic Liquids GRC – Attendee List

Name	Organization	Participation	Status
Alammar, Tarek	Iowa State University	Poster Presenter	Registered
Anderson, Jared	Iowa State University	Speaker	Registered
Araque, Juan	Benedictine College	Discussion Leader	Registered
Baker, Gary	University of Missouri-Columbia	Poster Presenter	Registered
Berton, Paula	McGill University	Poster Presenter	Registered
Biddinger, Elizabeth J	City College of New York, CUNY	Poster Presenter	Registered
Boatz, Jerry	Air Force Research Laboratory, AFRL/RQRP	Speaker	Registered
Bocharova, Vera	Oak Ridge National Laboratory	Poster Presenter	Registered
Brinzer, Thomas	University of Pittsburgh	Poster Presenter	Registered
Bund, Andreas	Technische Universität Ilmenau	Speaker	Registered
Buttry, Daniel A	Arizona State University	Poster Presenter	Registered
Carreno, Angela	Universidad Industrial de Santander	Poster Presenter	Registered
Castner, Edward W	Rutgers University	Speaker	Registered
Clark, Kevin	Iowa State University	Poster Presenter	Registered
Conrad, Eamonn D	Solvay	Speaker	Registered
Coutinho, Joao	CICECO	Speaker	Registered
Cutfield, Tatum	McGill University	Poster Presenter	Registered
Davis, Jim	University of South Alabama	Vice Chair	Registered
Dhiman, Suraj Dev P	Brookhaven National Laboratory	Poster Presenter	Registered
Douce, Laurent	CNRS	Speaker	Registered
Driver, Michael S	Chevron ETC	Attendee	Registered
Durkin, David P	United States Naval Academy	Attendee	Registered
Dzyuba, Sergei V	Texas Christian University	Poster Presenter	Registered
Fahey, Patrick J	United States Naval Academy	Poster Presenter	Registered
Ferreira, Ana M	University of Aveiro	Poster Presenter	Registered
Garrett-Roe, Sean	University of Pittsburgh	Poster Presenter	Registered
Glavatskikh, Sergei	KTH Royal Institute of Technology	Speaker	Registered
Goff, George S	Los Alamos National Laboratory	Poster Presenter	Registered
Gurau, Gabriela	525 Solutions, Inc.	Discussion Leader	Registered
Haumann, Marco	Friedrich-Alexander-Universitat Erlangen-Nurnberg	Speaker	Registered

Hayes, Robert	Rutgers University	Speaker	Registered
Heller, Bettina	FAU Erlangen-Nuernberg	Poster Presenter	Registered
Holbrey, John	Queen's University Belfast	Speaker	Registered
Holloczki, Oldamur	University of Bonn	Poster Presenter	Registered
Hunt, Patricia A	Imperial College London	Speaker	Registered
Ispas, Adriana	Technische Universitaet Ilmenau	Poster Presenter	Registered
Jiang, Haihui Joy	The University of Sydney	Poster Presenter	Registered
Kelley, Steven P	McGill University	Poster Presenter	Registered
Kim, Dooli	King Abdullah University of Science and Technology	Poster Presenter	Registered
Kinch, Richard T	Department of Chemistry	Poster Presenter	Registered
King, Catherine A	McGill University	Poster Presenter	Registered
Kirchner, Barbara	Rheinische Friedrich-Wilhelms-Universität Bonn	Speaker	Registered
Koel, Mihkel	Tallinn University of Technology	Discussion Leader	Registered
Kore, Rajkumar	The University of Alabama	Poster Presenter	Registered
Kuroda, Kosuke	Kanazawa University	Poster Presenter	Registered
Li, Chenlin	Idaho National Laboratory	Poster Presenter	Registered
Long, Timothy E	Virginia Tech	Speaker	Registered
Macala, Megan K	DOE - National Energy Technology Laboratory	Poster Presenter	Registered
Mariani, Alessandro	La Sapienza - University of Rome	Poster Presenter	Registered
Maroncelli, Mark	Penn State	Discussion Leader	Registered
May, Benjamin DW	Friedrich-Alexander-Universität Erlangen-Nürnberg	Poster Presenter	Registered
Mele, Andrea	Politecnico di Milano	Speaker	Registered
Meyer, Gerd H	Iowa State University	Discussion Leader	Registered
Miller, Mallory A	Case Western Reserve University	Poster Presenter	Registered
Mirjafari, Arsalan	Florida Gulf Coast University	Discussion Leader	Registered
Mudring, Anja V	Ames Laboratory / Iowa State University	Chair	Registered
Newberg, John T	University of Delaware	Poster Presenter	Registered
Nishi, Naoya	Kyoto University	Poster Presenter	Registered
Njoroge, Ian G	Vanderbilt University	Poster Presenter	Registered
Noble, Richard D	University of Colorado	Attendee	Registered
Nulwala, Hunaid B	Carnegie Mellon University	Poster Presenter	Registered
Ohno, Hiroyuki	Tokyo University of Agriculture and Technology	Poster Presenter	Registered

Osawa, Koji	Brookhaven National Laboratory	Poster Presenter	Registered
Ouchi, Yukio	Tokyo Institute of Technology	Poster Presenter	Registered
Padua, Agilio	Université Blaise Pascal, Clermont-Ferrand II / CNRS	Speaker	Registered
Panzer, Matthew	Tufts University	Speaker	Registered
Passos, Helena	CICECO - University of Aveiro	Poster Presenter	Registered
Pringle, Jenny	Deakin University	Speaker	Registered
Rachiero, Giovanni P	McGill University	Poster Presenter	Registered
Ravula, Sudhir	University of Missouri	Poster Presenter	Registered
Reichert, Matthew	University of South Alabama	Discussion Leader	Registered
Reid, Joshua	University of York	Poster Presenter	Registered
Riisager, Anders	Technical University of Denmark	Speaker	Registered
Rogers, Robin	McGill University	Speaker	Registered
Rogers, Mihaela	Crystal Growth and Design	Attendee	Registered
Rumble, Christopher A	The Pennsylvania State University	Poster Presenter	Registered
Sangoro, Joshua	University of Tennessee	Speaker	Registered
Schröder, Katharina	Vienna University of Technology	Speaker	Registered
Schulz, Peter S	University Erlangen-Nuremberg	Discussion Leader	Registered
Schwenzer, Birgit	National Science Foundation	Attendee	Registered
Shamshina, Julia	McGill University	Poster Presenter	Registered
Sharma, Gyanendra	Indian Institute of Technology Madras	Poster Presenter	Registered
Shaw, Scott	University of Iowa	Discussion Leader	Registered
Shimada, Yumiko	Kanazawa graduate school	Poster Presenter	Registered
Singh, Dharmendra	Indian Institute of Technology Madras, Chennai	Poster Presenter	Registered
Smith, Chip J	University of Missouri	Poster Presenter	Registered
Socha, Aaron M	Proionic GmbH	Discussion Leader	Registered
Suzer, Sefik	Bilkent University	Speaker	Registered
Suzuki, Shiori	Kanazawa University	Poster Presenter	Registered
Takahashi, Kenji	Kanazawa University	Poster Presenter	Registered
Taubert, Andreas H	Universitaet Potsdam	Speaker	Registered
Tibbits, Andrew C	University of Delaware	Poster Presenter	Registered
Triolo, Alessandro	Istituto Struttura della Materia, Consiglio Nazionale delle Ricerche	Speaker	Registered
Trulove, Paul C	U.S. Naval Academy	Speaker	Registered

Tsurumaki, Akiko	Sapienza University of Rome	Poster Presenter	Registered
Uralcan, Betul	Princeton University	Poster Presenter	Registered
Vaid, Thomas	McGill University	Poster Presenter	Registered
Von Czarnecki, Peter	IoLiTec - Ionic Liquids Technologies	Speaker	Registered
Wagle, Durgesh V	University of Missouri	Poster Presenter	Registered
Wishart, James F	Brookhaven National Laboratory	Discussion Leader	Registered
Wu, Boning	Rutgers University	Poster Presenter	Registered
Yoo, Brian	University of Notre Dame	Poster Presenter	Registered
Zavgorodnya, O	The University of Alabama	Poster Presenter	Registered
Zhang, Yong	University of Notre Dame	Poster Presenter	Registered
Zhang, Suojian	Chinese Academy of Sciences	Discussion Leader	Registered
Zhang, Jianhua	The University of Alabama	Poster Presenter	Registered
Zhao, Man	Rutgers University	Poster Presenter	Registered

107 Attendees

Ionic Liquids GRS – Attendee List

Name	Organization	Participation	Status
Araque, Juan	Benedictine College	Chair	Registered
Berton, Paula	McGill University	Discussion Leader	Registered
Brinzer, Thomas	University of Pittsburgh	Discussion Leader	Registered
Clark, Kevin	Iowa State University	Chair	Registered
Cutfield, Tatum	McGill University	Poster Presenter	Registered
Davis, Jim	University of South Alabama	Speaker	Registered
Dhiman, Suraj Dev P	Brookhaven National Laboratory	Discussion Leader	Registered
Ferreira, Ana M	University of Aveiro	Speaker	Registered
Heller, Bettina	FAU Erlangen-Nuernberg	Poster Presenter	Registered
Holloczki, Oldamur	University of Bonn	Speaker	Registered
Kelley, Steven P	McGill University	Poster Presenter	Registered
Kim, Dooli	King Abdullah University of Science and Technology (KAUST)	Poster Presenter	Registered
Kinch, Richard T	Department of Chemistry	Poster Presenter	Registered
King, Catherine A	McGill University	Poster Presenter	Registered
Mariani, Alessandro	La Sapienza - University of Rome	Poster Presenter	Registered
May, Benjamin DW	Friedrich-Alexander-Universität Erlangen-Nürnberg	Poster Presenter	Registered
Meyer, Gerd H	Iowa State University	Speaker	Registered
Njoroge, Ian G	Vanderbilt University	Speaker	Registered
Osawa, Koji	Brookhaven National Laboratory	Speaker	Registered
Passos, Helena	CICECO - University of Aveiro	Speaker	Registered
Ravula, Sudhir	University of Missouri	Speaker	Registered
Reid, Joshua	University of York	Speaker	Registered
Rumble, Christopher	The Pennsylvania State University	Speaker	Registered
Shimada, Yumiko	Kanazawa graduate school	Poster Presenter	Registered
Smith, Chip J	University of Missouri	Speaker	Registered
Suzuki, Shiori	Kanazawa University	Speaker	Registered
Tibbits, Andrew C	University of Delaware	Speaker	Registered
Uralcan, Betul	Princeton University	Speaker	Registered
Wishart, James F	Brookhaven National Laboratory	Speaker	Registered
Wu, Boning	Rutgers University	Poster Presenter	Registered

Zhao, Man

Rutgers University

Poster Presenter

Registered

31 Attendees