September 1, 2008 - February 28, 2009 Bulletin

News

- Due to the Economic downturn, Varian Inc. has decided to exit the equipment business in the ACOMP area. This gives PolyRMC the exciting opportunity to re-orient the commercialization dimension of ACOMP; several possible options on how to proceed with the ACOMP development are under investigation.

- As a part of the Louisiana Initiatives, scientists from Nalco (Garyville, LA) visited PolyRMC. PolyRMC also hosted visitors from Lion Copolymer, Total, and Chevron Oronite.

- PolyRMC director, Dr. Wayne Reed, was the keynote speaker at a conference on polymer characterization, sponsored by Shimadzu, on November 14, 2008. (Gonzales, LA).

- The Louisiana Initiatives Subgroup of the Advisory Board, Dr. Wilmer R. Bottoms, Mr. Daniel S. Borné, Mr. Ronald J. Evans, Mr. Paul H. Flower, and Prof. Hyuk Yu had a meeting with the PolyRMC staff and Mr. John M. Christie, of the Tulane Technology Transfer Office, on Friday, February 13, 2009 to discuss possibilities for ACOMP development, and other PolyRMC issues.

New scientific projects and results

- First time application of ACOMP to semi-batch polymerization reactions:
  - Predictive control of $M_w$ and composition for free radical (co)polymerization in solution under reagents feed (Acrylamide/VB).
  - Study of kinetics of semi-batch emulsion polymerization under monomer-starved and monomer flooded conditions (MMA).

- First time online monitoring using ACOMP of living polymerization reactions in heterogeneous media:
  - Reversible addition-fragmentation chain transfer (RAFT) polymerization in emulsion (BA).

- Adaptation of ACOMP to monitoring reactions in pressurized reactors

Publications

Some of these publications were done with visitors and collaborators from across the country and the globe.


**Ongoing/completed projects with PolyRMC clients**

- As a part of the Louisiana Initiatives, with help from Dan Borné, President of the Louisiana Chemical Association (LCA), PolyRMC completed a project for Rubicon LLC (Geismar, LA).
- Also as a part of the Louisiana Initiatives, PolyRMC is currently working on a project with Lion Copolymer LLC. (Geismar, LA).
- PolyRMC is currently completing a project for Arkema Inc. (King of Prussia, PA). Arkema has been a long-time collaborator with the Reed research group and PolyRMC.

**New Instrumentation**

- Brookhaven Instrument Company, recently donated a particle size analyzer for flow and batch mode applications (NanoDLS) to the center.

**Current and Recent Visitors**

*PolyRMC collaborates with scientists and groups from around the world in the polymer characterization field. Our collaborators choose to come to PolyRMC to learn to use our proprietary technologies, ACOMP and SMSLS, as well as to share knowledge using traditional methods such as GPC to characterize a broad range of polymers. Most of our visitor collaborations result in publications in high-impact journals. As part of our new visiting scientist program guidelines, PolyRMC will only accept collaborators that can spend enough time with PolyRMC to add value to PolyRMC research and projects.*
• Dr. Frank Bentram arrived at PolyRMC in September 2008, on an 8-month sabbatical from the U.S. Naval Research Center (Gulfport, MS). He is working on computer simulations for chain growth reactions and phase transition behavior in polymers.

• Prof. Rilton Alves de Freitas, Univali Univ. (Itajai, Brazil) visited PolyRMC on sabbatical from March-Sept. 2008, sponsored by CNPq. He investigated chitosan derivitization using online monitoring and other characterization methods, ACM, SEC and SMSLS.

• Prof. Fabio H. Florenzano, Dean of the Health Sciences Center at Univ. do Vale do Supucuí (Pouso Alegre, Brazil) visited PolyRMC on a 2 month sabbatical to work on characterization of functionalized materials. He has a long history of collaboration with PolyRMC.

• Prof. Nodirali Normakhamatov, Uzbek Academy of Sciences (Tashkent, Uzbekistan) is visiting PolyRMC under CRDF Program between U.S. and Uzbekistan. He works on monitoring and characterization of sulfonated cellulose for use as new generation antibiotics, using PolyRMC technologies.

• Prof. Hyuk Yu, Walter H. Stockmayer Prof. Emeritus and Eastman Kodak Prof. Emeritus of Chemistry at Univ. of Wisconsin-Madison, and an Advisory Board member of PolyRMC is wintering in New Orleans. He will be consulting PolyRMC personnel on different scientific matters and other strategies regarding PolyRMC development.

**New Students**

- PolyRMC welcomes PhD candidate Zifu Zhu as a new student. He is working with Prof. Alina Alb on adapting DLS to online monitoring of particle size during polymerization reactions.

**Upcoming Events**

- The Tulane Engineering Forum, which will have corporate sponsorship and participation from around the world, is scheduled for April 3, 2009 at the Ernest N. Morial Convention Center in New Orleans, LA. PolyRMC will be present at this event with a booth and a presentation by Director Reed, University-based Expertise as a Resource for Industry.

Thank you,

The PolyRMC Team