



# ISOTOPICS

The Cleveland Section of the American Chemical Society

Volume 84 Issue 4

April 2008

## On Deck:

Wednesday, May 21  
*Morley Award*

**Dr. Janet E. Del Bene**  
*Youngstown State University*

Venue: CWRU (tentative)

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## April Meeting Notice

### Education Night

Wednesday, April 16, 2008  
Oberlin GrafTech International

4:30 pm	Executive Committee Meeting
5:30 pm	Social Time: Short tours of the GrafTech facility will be available
6:30 pm	Dinner
7:30 pm	Lecture
8:30 pm	Informal Discussion

## Membranes for an Energy-Hungry Earth

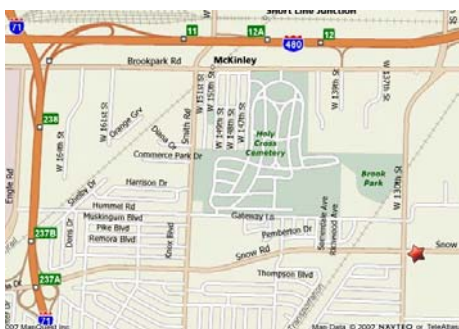
*Dr. Ryszard Wycisk, Case Western Reserve University*

Energy is essential for humankind's survival and for advancement of civilization. Surprisingly, over 90% of the world energy comes from nonrenewable sources. Some predict that, at the current consumption rate, fossil fuels supplies will only last for 100 years. That's not all. As less developed nations industrialize, their share of the world's energy resources will grow. Additionally, the world's population increase will drain fossil fuel supplies even faster. Should I mention pollution and global warming? We need clean and renewable energy sources and we need more efficient consumption strategies. Membranes can help to do the job cleanly and efficiently. In fact, life would not exist without membranes – the human body contains over 100 million square feet of cell membrane area! Synthetic membranes have been used for separation processes for over 40 years and their future seems quite bright. Membrane operations are generally simple, they do not involve phase changes, and scale-up is easy. Still, there are fouling issues that need to be addressed if membranes are to assist us in eliminating traditional, energy intensive processes like distillation. Recently, fuel cells have become a hot topic as they are considered the ultimate power source of the future. Proton-conducting membranes are at the heart of hydrogen fuel cells and they are actively researched all over the world. In my talk I will exemplify the multiple roles that membranes play in the global quest for renewable, clean energy and energy efficient technologies.

**DINNER RESERVATIONS REQUIRED:** Please RSVP by contacting Rachael Barbour, by phone at 216-839-7238 or by e-mail at rachael.barbour@basf.com by **noon on Friday, April 11** (For phone reservations, please clearly spell your last name and leave a return phone number). Cost of the dinner is \$20 for members & guests and \$10 for students. Checks made out to <sup>3</sup>Cleveland ACS<sup>2</sup> are greatly appreciated. **Invited student guests, accompanied by their parents or guardians and one teacher, will be free.** Dinner will include green salad, rigatoni with meat sauce, chicken marsala, rice pilaf, green beans almondine, and an ice cream sundae bar.

## Directions to GrafTech International

12900 Snow Road  
Parma, OH 44130



**From the South (I-77).** Take Route 71 to the Snow Road exit and go east. GrafTech will be on the left, just after West 130th Street. There will be signs directing you in the parking lot.

**From the East or West (I-90).** Take Route 480 to the West 130th exit and go south to Snow Road. Turn left onto Snow Road and left into the GrafTech parking lot. There will be signs directing you in the parking lot.

## Speaker Bio

Ryszard Wycisk is an Assistant Research Professor in the Department of Chemical Engineering at Case Western Reserve University. He received his B.S. and Ph.D. degrees from Wroclaw University of Technology in Poland. Dr. Wycisk's research interests are in the area of

polymeric membranes and especially ion conducting polymers for fuel cell applications. He is the co-author over 70 papers, book chapters and conference presentation. Dr. Wycisk received awards from the Polish Ministry of Education and the American Institute of Chemists. He is a member of the American Chemical Society, the Electrochemical Society, and the North American Membrane Society, where he serves as a workshop instructor.

## Call for Nominations: Yeager Award

By Kenneth W. Street

This award is presented annually to an outstanding undergraduate student who is attending a college or university in Northeastern Ohio, and who has demonstrated an interest in some phase of spectroscopy. The Award, cosponsored by the Cleveland Sections of the American Chemical Society and the Society for Applied Spectroscopy, consists of a \$300 honorarium, a framed certificate and local recognition. Nominations for the award may be made by any faculty member or SAS/ACS Sponsor. Nominations should arrive no later than **April 14, 2008**. For further details concerning nominations contact Kenneth Street at 216-433-5032 or [kenneth.w.street@nasa.gov](mailto:kenneth.w.street@nasa.gov). More information about the Yeager Award is available at: <http://www.s-a-s.org/Cleveland-local/Yeager-award.html>.

## **April Historical Events in Chemistry**

By Leopold May

The Catholic University of America, Washington, DC

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|----------------|---|
| April 8, 1911  | Melvin Calvin, who received the Nobel Prize in Chemistry in 1961 for his research in photosynthesis, was born on this date.   |
| April 14, 1969 | NASA's Nimbus III weather satellite made the first civilian use of nuclear batteries on this day.   |
| April 21, 1970 | The first Earth Day was founded by Sen. Gaylord Nelson, Father of Earth Day and organized by Denis Hayes and celebrated on this day. It is celebrated by ACS on April 22.                               |
| April 26, 1775 | Antoine L. Lavoisier reported on this day that heating mercury in air forms red calx, HgO, while the air is reduced in volume and no longer supports combustion. He heated red calx to liberate oxygen. |

**Annual SAS/ACS/AVS May Conference**  
**Thursday, May 15<sup>th</sup> at John Carroll University**

Co-sponsored by the Cleveland Sections of Society for Applied Spectroscopy, American Chemical Society: Analytical Topics Group, and American Vacuum Society

*Free conference registration & lunch for all students*  
*Panel Discussion on Careers in Science*  
*Cash Awards to Best Student Papers*

- Return to the Moon - A Dusty Place, **Ken Street**, *Nasa-Glenn*
- Materials in Sports, **Gary Michal**, Case Western Reserve University
- Mining Natural Products Extracts, **Kim Colson**, *Bruker-Biospin*
- Gas Chromatographic Solutions for Biodiesel Characterization, **Terry Jeffers**, *ThermoFisher*
- MALDI-TOF of Polymers and Additives, **Ron Snelling**, *Shimadzu*
- Application Solutions: Get the Most from Your ICP-OES System, *ThermoFisher*
- Application of Conductive Organic Polymers-Attempt to Heal CdS/CdTe Solar Cells, **Misle Tessema**, *UToledo*
- Optimization of Cleaning Procedures for Trace Residue in Multi-use cGMP Manufacturing Equipment Using UV-Vis Spectroscopy, **Nicholas Janofsky**, *Ricerca Biosciences, Inc.*
- Nonlinear Optical Spectroscopy to Study Confined Liquids, *UAkron*
- State of the Art ICP-MS, *ThermoFisher*
- Synthesis of Materials in the AA'W3O12 Family using a Non-Hydrolytic Sol-Gel Process, **Tamam Baiz**, *UToledo*
- HPLC Method Development and Impurity Isolation and Identification for a Commercial Drug Product, **Jason Blanchard**, *Ricerca Biosciences, Inc.*
- Highly Efficient Caged Drug Delivery with Gold Nanoparticle Vectors for Photodynamic Therapy, **Yu Cheng**, *Case Western Reserve University*
- **Yeager Award**
- **Acknowledgement of the John Bell Award winners at the dinner banquet**

Please contact Brian Perry (brian\_perry@lord.com) if you are interested in presenting a paper. Please contact Sara Freeman (freeman@ferro.com, 216-750-6655) if you interested in attending the May Conference.

## MIM Report

By Norman C. Craig

Eight awards were given at this year's MIM (Wednesday, March 19 at Oberlin College) for outstanding presentations by students. Two of the awards were supported by BASF, two were supported by the Department of Chemistry at Cleveland State University, and one was supported by Lubrizol. The others were supported by anonymous donors.

### Undergraduate Awards

Nathan Moss, John Carroll University

Deacon Nemchick, Oberlin College

Alex Nichols, Oberlin College

Jamie Rhodes, John Carroll University

### Graduate Awards

Ian Atkinson, Cleveland State University

Charbel Abou Diwan, Cleveland State University

Mary Manson, Case Western Reserve University

John Moran, Cleveland State University

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*Isotopics* is looking to highlight local chemistry professionals, companies, teachers, research groups, students, events, and more. If you have an idea for an *Isotopics* article, please contact the editor. *Isotopics* is also looking for local members to join our staff. Time commitments for staff members are minimal (a few hours a year!) and your contributions will be invaluable to our local section. If you are interested in joining *Isotopics*, please contact the editor.