



ISOTOPICS

The Cleveland Section of the American Chemical Society

Volume 91

Issue 7

October 2015

On Deck:

TBD

October Meeting Notice

Wednesday, October 21, 2015

BASF, Beachwood

23700 Chagrin Blvd, Cleveland, OH 44122

4:30 pm Forum and Tour of BASF for Students / Executive Committee Meeting

5:30 pm Registration

5:45 pm Introduction to BASF in Cleveland (BASF in Construction Materials, Industrial Chemicals, and Battery Materials)

6:15 pm An evening of Socializing and Networking – heavy hors d'oeuvres will be served

Celebrating BASF in Cleveland: A Social/Networking Event

“Badische Anilin- & Sodafabrik” (BASF) is celebrating its 150th year, having been founded in 1865 to produce dyes.

<https://www.basf.com/en/company/about-us/history.html>

DINNER RESERVATIONS REQUIRED:

Please RSVP to Dr. David Orosz at dorosz@ndc.edu with the names and number of people in your party by 5:00 p.m. on Wednesday, October 14. Heavy hors d'oeuvres will be offered with vegetarian options. We now can take credit card payments, checks made out to “Cleveland ACS,” or cash. \$20 for members and guests, \$5 for students.

Cleveland ACS Officers

Chair:

Theresa Nawalaniec
Cleveland State University
(216) 687-3504
t.nawalaniec@csuohio.edu

Chair-Elect:

David Orosz
Notre Dame College
(216) 373-5322
dorosz@ndc.edu

Treasurer:

John Moran
Notre Dame College
(216) 373-6380
jmoran@ndc.edu

Secretary:

Anna Cronin
Anna.Bowman@gmail.com

Isotopics

Interim Editor:

Anna Cronin
(see contact info above)

Cleveland Section Web Site:

http://www.csuohio.edu/sciences/dept/cleveland_acs/

ACS Discoveries

How the "heat" compound from chili peppers could help kill cancer cells

The Journal of Physical Chemistry B

Capsaicin, the compound responsible for chilis' heat, is used in creams sold to relieve pain, and recent research shows that in high doses, it kills prostate cancer cells. Now researchers are finding clues that help explain how the substance works. Their conclusions suggest that one day it could come in a new, therapeutic form. Their study appears in ACS' The Journal of Physical Chemistry B.

About 10 years ago, researchers reported that capsaicin can kill prostate cancer cells in mice while leaving healthy cells unharmed. But translating that dose to humans would require them to eat a huge number of chili peppers per day. Figuring out how capsaicin works could help researchers transform it into an effective drug in the form of an injection or pill. Researchers have figured out that the molecule binds to a cell's surface and affects the membrane, which surrounds and protects the cell. That finding prompted Ashok Kumar Mishra and Jitendriya Swain to try to gain a deeper understanding of capsaicin's effects so it might be harnessed in the future for new medicines.

The scientists were able to detect how the compound interacts with cell membranes by monitoring its natural fluorescence. The study showed that capsaicin lodges in the membranes near the surface. Add enough of it, and the capsaicin essentially causes the membranes to come apart. With additional research, this insight could help lead to novel tools against cancer or other conditions.

The authors acknowledge funding from the Government of India's Department of Science and technology.

A note from your Interim Editor

If you have submissions for Isotopics, please note my new e-mail address -

anna.bowman@gmail.com

My apologies if any articles were lost in the transition.

We are always 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

We are also seeking help with producing Isotopics each month (8 issues a year), the time commitment is minimal, and your contributions will be invaluable to our local section. If you are interested, please contact a member of the Executive Committee.