The Blue Ridge Chemist

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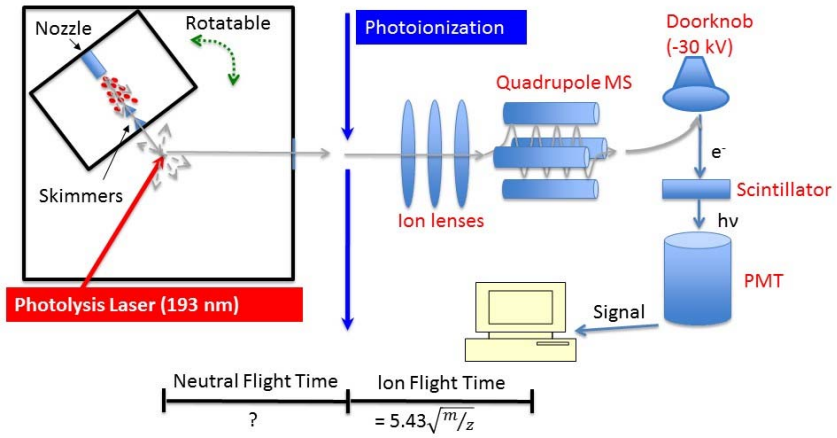


Liberty University Hosts the November Meeting

VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

681st SECTION MEETING
Liberty University
Monday, November 14, 2016

PROGRAM:

5:30-6:00 Social time, Hancock Welcome Center
6:00-7:00 Dinner, Hancock Welcome Center
7:00-8:00 Talk, Hancock Welcome Center

The social time, dinner, and presentation will all take place in the Hancock Welcome Center at Liberty University. The speaker will be Dr. Matt Brynteson. His talk is "Radically Rotating Radicals".

The buffet will consist of pot roast, salad, macaroni and cheese, steamed vegetable medley, rolls, apple pie, and chocolate cake along with choice of beverages. The dinner is $15, with students and retired members being half price.

Reservations for the dinner must be made by MONDAY November 7, (7 DAYS BEFORE THE MEETING) by contacting Nancy Richardson at (434) 592-4302, or by e-mail to narichardson@liberty.edu .

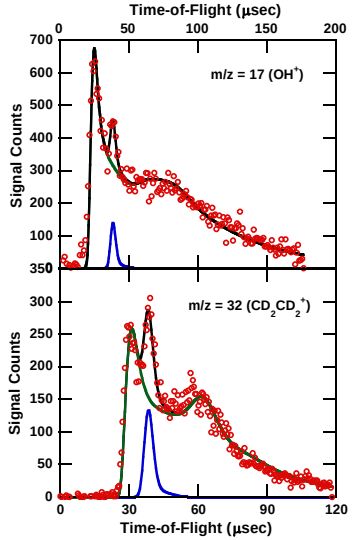
Dr. Matt Brynteson
Assistant Professor, Liberty University

Dr. Brynteson was born in Virginia where he lived until age 15, but completed high school and attended college and graduate school in Illinois. After graduating with a B. S. in chemistry and mathematics from Rockford College (now known as Rockford University) in 2009, he began his graduate work at The University of Chicago working under Professor Laurie Butler at The University of Chicago. During his graduate studies, he investigated the unimolecular dissociation dynamics of radical intermediates playing key roles in atmospheric and explosives chemistry. During the time at The University of Chicago he taught the advanced chemistry course during the Summer Institute for the Gifted (SIG) program, and was awarded the Nathan Sugarman teaching award for instructing general chemistry lab and recitation sections. After completing his Ph.D., he began teaching as an assistant professor at Liberty University in the fall of 2014. Thus far, he has taught general, physical, and inorganic chemistry courses.

Dr. Brynteson is also currently the advisor to the Liberty University chemistry club Lutetium and the National Society of Collegiate Scholars. He is also involved in various undergraduate research projects ranging from synthesis to computational studies investigating potential energy surfaces of radicals to chemical education

Radically Rotating Radicals

A model which accurately predicts the net speed distributions of products resulting from the unimolecular dissociation of rotationally excited CD_2CD_2OH radicals will be presented. The radicals are produced photolytically from a halogenated precursor under collision-free conditions, so they are not in a thermal distribution of rotational states. The accuracy of the model relies on the radical dissociating with negligible energetic barrier beyond the endoergicity. These predictions are tested using crossed laser-molecular beam scattering experiments that photolytically generated rotationally excited CD_2CD_2OH radicals from brominated precursors. Some of those radicals then undergo further dissociation to CD_2CD_2 + OH. We model the rotational trajectories of these radicals, with high vibrational and rotational energy, first near their equilibrium geometry, and then by projecting each point during the rotation to the transition state (continuing the rotational dynamics at that geometry). This allows us to accurately predict the recoil velocity imparted in the subsequent dissociation of the radical by calculating the tangential velocities of the CD_2CD_2 and OH fragments at the transition state. The model also gives a prediction for the distribution of angles between the dissociation fragments' velocity vectors and the initial radical's velocity vector. These results are used to generate fits to the previously measured time-of-flight distributions of the dissociation fragments; the fits are excellent. The results demonstrate the importance of considering the precession of the angular velocity vector for a rotating radical.



Elections, Blue Ridge Section, ACS, for 2017

The Nominating Committee has prepared the following slate of nominees for the election at the November meeting. All have agreed to serve if elected. Other nominees will be accepted from the floor at that meeting. If you would like to nominate someone, please check with that person about his or her willingness to serve. You may also self-nominate.

Chair	_____	Paul Deck, Virginia Tech University
	_____	_____
Chair-elect	_____	
	_____	_____
Secretary	_____	_____
	_____	_____
Treasurer	_____	Chris Monceaux, Radford University
	_____	_____
Recorder	_____	Gary Hollis, Roanoke College
	_____	_____
Newsletter Editor	_____	Nancy Richardson, Liberty University
	_____	_____
Councilor	_____	Gary Hollis, Roanoke College
	_____	_____
Alternate-Councilor	_____	_____
	_____	_____

Bring your ballot to the November meeting, or mail it to Kim Lane, Radford University, 801 East Main St., Radford, Virginia 24142

Other notes:

The section is also in need of a webmaster to manage the section website.

Starting in the new year, all communications will be electronic through email and the website.

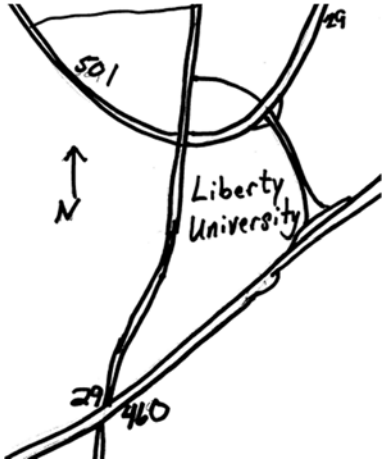
SCI Scholars Internship Program

Industrial Internships for Chemistry and Chemical Engineering Undergraduate Students, see https://www.acs.org/content/acs/en/education/students/college/experienceopp/scischolars.html

The Society of Chemical Industry (SCI), American Institute of Chemical Engineers (AIChE), and the American Chemical Society created the SCI Scholars Summer Internship Program to introduce chemistry and chemical engineering students to careers in the chemical industry.

Exceptional sophomores and juniors majoring in chemistry and chemical engineering can apply for a prestigious SCI Scholars summer internship. Students are selected based on the strength of their application, statement of interest in an industrial internship, and letters of recommendation. Approximately 30 scholars will be chosen for internship positions in the summer of 2017.

- $6,000–$10,000+ for a 10-12 week internship
- A certificate and an additional $1,000, which can be used for any purpose, such as participation at an ACS or AIChE meeting
- Scholars nominate a high school chemistry teacher for recognition. Teachers will be awarded a certificate from SCI and $1,000, which can be used for professional development or classroom materials



Directions to Liberty University

Northbound on 29 - Take 460 E to the exit for Candlers Mtn. Rd/Liberty University. At the stop sign, make a right. Go to the first light and make a left onto University Blvd. Continue on this road into Liberty's Main Campus.

Southbound on 29 Business - Take Exit 8b. Go through the first light. At the second light, make a right on S 670 (there is a Liberty University sign with an arrow pointing to the right). Go two more lights. Make a right on University Blvd. Continue on this road into Liberty's Main Campus.

Eastbound on 460 - Take the Candlers Mtn. Rd./Liberty University exit. At the stop sign, make a right. Go to the first light and make a left onto University Blvd. Continue on this road into Liberty's Main Campus.

Westbound on 460 or Northbound on 501 - Take the Candlers Mtn. Rd. / University Blvd. exit. At the light make a left to Liberty's main campus.

On campus: Several entrances to the campus lead to University Blvd. Follow this past the football stadium on the right. Continue on this same road further as it curves gently right with the bookstore on the left and then further with the visitor center to the right. Visitors may park in the visitor center lot or in the lot across the street by the bookstore. No permit is needed after 5. See http://www.liberty.edu/index.cfm?PID=6506 for a zoomable campus map.