

# Breaking and Making Bonds with Light

*Organizers: Jeffrey J. Rack (Ohio University)  
Ted Burkey (University of Memphis)*

*Telluride Science Research Center, Telluride, Colorado*

*July 2 – 6, 2012*



OHIO  
UNIVERSITY

THE UNIVERSITY OF  
MEMPHIS®

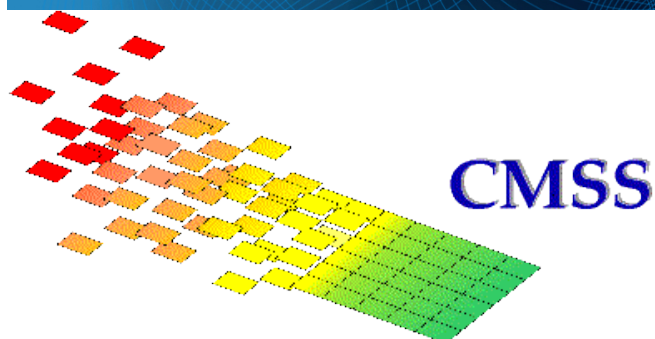
VP for Research  
College of Arts and Sciences  
The Department of Chemistry and  
Biochemistry

**Vice Provost  
Research Support Services**



FedEx INSTITUTE OF TECHNOLOGY

Department of Chemistry



Condensed Matter and Surface Science Program at Ohio University



ACS  
Chemistry for Life®

Upper Ohio Valley Local Section



## BREAKING AND MAKING BONDS WITH LIGHT, July 2-6, 2012

TSRC @ Telluride Intermediate School  
725 W. Colorado Avenue  
Telluride CO  
(Contact Nana 970-708-0004 or Rory 970-708-4542)

### SCHEDULE

Each Presentation is 35 minutes with 15 minutes for discussion, except for postdoctoral or graduate students

Monday, 2 July	Event	
7:30 – 8:25 am	TSRC Catered Breakfast	
8:25 – 8:30	Opening Remarks	
8:30 am – 12:00 pm	<i>Cornelia Bohne, moderator</i>	
8:30 – 9:20 am	<b>Devens Gust</b>	Analog and Digital Control of Molecular Function by Photochromes
9:20 – 10:10 am	<b>Christopher Bardeen</b>	Photoreactive molecular crystal nanostructures that bend, twist and curl.
10:10 – 10:20 am	Break	
10:20 – 11:10 am	<b>Leonard MacGillivray</b>	Supramolecular Control of Solid-State Reactivity: Covalent Bonds by Design with Light
11:10 am – 12:00 pm	<b>Neil Branda</b>	Controlling Chemical and Biochemical Processes with Light
12:00 – 1:00 pm	TSRC Catered Lunch	
1:00 – 5:00 pm	Free Time	
5:00 – 7:00 pm	Dinner	
7:00 – 9:00 pm	<i>Tomoko Fujiwara, moderator</i>	
7:00 – 7:50 pm	<b>Jack Saltiel</b>	The Photoisomerization of Provitamin D and Previtamin D to Tachysterol in Glassy Media at 77 K
7:50 – 8:00 pm	Break	
8:00 – 8:50 pm	<b>Cornelia Bohne</b>	Photochromism in soft supramolecular systems in aqueous solution.
<b>Tuesday, 3 July</b>		
7:30 – 8:30	TSRC Catered Breakfast	
8:30 – 12:00 am	<i>Susann Ullrich, moderator</i>	
8:30 – 9:20 am	<b>Lin Chen</b>	Watching bond breaking and formation with x-ray snapshots
9:20 – 10:10 am	<b>Roland Allen</b>	Response of materials and molecules to femtosecond-scale laser pulses

*Tuesday, July 3 continued*

10:10 – 10:20 am	Break	
10:20 – 11:10 am	<b>Jacqueline Cole</b>	Solid-state sulfur-dioxide photo-isomerism in ruthenium based complexes
11:10 am – 12:00 pm	<b>Extra Discussion/Free Time</b>	
12:00 – 1:30 pm	<b>Lunch on your own</b>	
1:30 – 5:00 pm	<i>Ted Burkey, moderator</i>	
1:30 – 2:20 pm	<b>Jeffrey Rack</b>	Molecules in motion: isomerization in solutions and solids
2:20 – 3:10 pm	<b>Martial Boggio-Pasqua</b>	Theoretical mechanistic studies of photochromic systems: the central role of conical intersections
3:10 – 3:20 pm	Break	
3:20 – 4:10 pm	<b>Claudia Turro</b>	Photoisomerization and Photoinduced Ligand Exchange in Ru(II) Complexes: Yields and Ultrafast Kinetics
6:00 pm – 7:15 pm	Town talk	
8:00 pm - 10:00 pm	<b>Banquet dinner Sponsored by Ohio University and University of Memphis</b>	

**Wednesday, 4 July**

7:30 – 8:30	<b>TSRC Catered Breakfast</b>	
8:30 – 12:00 am	<i>Claudia Turro, moderator</i>	
8:30 – 9:20 am	<b>Ted Burkey</b>	Engineering Organometallic Photochromes Based on Linked Functional Groups.
9:20 – 10:10 am	<b>C. Edwin Webster</b>	Engineering of Organometallic Photochromes with Computational Chemistry
10:10 – 10:20 am	Break	
10:20 – 11:10 am	<b>Ted Heilweil</b>	Ultrafast Infrared Measurements of Organometallic Photochromes
11:10 am – 12:00 pm	<b>Susann Ullrich</b>	The photochemistry of spiropyran studied by time-resolved photoelectron and fragmentation spectroscopy
12:00 – 1:30 pm	<b>Lunch on your own</b>	
1:30 – 5:00 pm	<i>Jeffrey Rack, moderator</i>	
1:30 – 2:20 pm	<b>Michael Wolf</b>	Thiophene-containing photoswitchable metal complexes
2:20 – 3:10 pm	<b>Francisco Raymo</b>	Photoswitchable Luminescent Probes for Imaging Applications

*Wednesday July 4, continued*

3:10 – 3:20 pm	Break	
3:20 – 3:55 pm	<b>Tim Kucharski (PD)</b>	Hybrid Nanostructures for High Energy Density Solar Thermal Fuels
3:55 – 4:30 pm	<b>Kristin Springfield (GS)</b>	Transition metal compounds for use in holography
Evening	Free Time	
<b>Thursday, 5 July</b>		
7:30 – 8:30	<b>TSRC Catered Breakfast</b>	
8:30 – 12:00 am	<i>Francisco Raymo, moderator</i>	
8:30 – 9:20 am	<b>Alison McCurdy</b>	Optimizing a reversible photocage for calcium ions
9:20 – 10:10 am	<b>Tomoko Fujiwara</b>	Designing Photochromic Polymer Conjugates to Enhance Photoswitch Properties and Applications
10:10 – 10:20 am	Break	
10:20 – 11:10 am	<b>Tamas Kosa</b>	Phototropic Liquid Crystals: Light Induced Order
11:10 am – 12:00 pm	<b>Artem Masunov</b>	Computational design of two-photon absorbing photochromic chromophores
12:00 – 1:00 pm	<b>Lunch on your own</b>	
1:00 – 6:00 pm	Free Time	
6:00 pm	<b>TSRC Picnic</b>	
<b>Friday, 6 July</b>		
7:30 – 8:30 am	<b>TSRC Catered Breakfast</b>	
8:30 – 12:00 am	Discussion (Proposal/Collaboration)	

## BREAKING AND MAKING BONDS WITH LIGHT, July 2-6, 2012

**TSRC @ Telluride Intermediate School**

**725 W. Colorado Avenue**

**Telluride CO**

**(Contact Nana 970-708-0004 or Rory 970-708-4542)**

### CONTACT INFORMATION

<i>Name</i>	<i>Affiliation</i>		<i>email</i>
Roland Allen	Texas A& M	USA	allen@tamu.edu
Christopher Bardeen	UC Riverside	USA	Christopher.bardeen@ucr.edu
Martial Boggio-Pasqua	Univ. Paul Sabatier	France	martial.boggio@irsamc.ups-tlse.fr
Cornelia Bohne	U. Victoria	Canada	cornelia.bohne@gmail.com
Neil Branda	Simon Fraser Univ.	Canada	Neil.branda@sfu.ca
Theodore Burkey	University of Memphis	USA	tburkey@memphis.edu
Sophie Canton	Lund University	Sweden	Sophie.Canton@maxlab.lu.se
Lin Chen	Northwestern/Argonne	USA	lchen@anl.gov
Jacqueline Cole	Cambridge University	UK	jmc61@cam.ac.uk
Tomiko Fujiwara	University of Memphis	USA	tfjiwara@memphis.edu
Devens Gust	Arizona State Univ.	USA	gust@asu.edu
Ed Heilweil	NIST/NRL	USA	edwin.heilweil@nist.gov
Tamas Kosa	Alpha Micron	USA	tamas@alphamicron.com
Tim Kucharski (PD)	MIT	USA	tkuch@mit.edu
Leonard MacGillivray	University of Iowa	USA	Len-macgillivray@uiowa.edu
Alison McCurdy	Cal. State Univ., LA	USA	amccurd@calstatela.edu
Jeffrey J. Rack	Ohio University	USA	rackj@ohio.edu
Francisco Raymo	University of Miami	USA	fraymo@miami.edu
Jack Saltiel	Florida State University	USA	jsaltiel@fsu.edu
Kristin Springfield (GS)	University of Osnabrück	Germany	kspringf@uni-osnabrueck.de
Claudia Turro	The Ohio State University	USA	turro@chemistry.ohio-state.edu
Susann Ullrich	University of Georgia	USA	ullrich@physast.uga.edu
Charles Webster	University of Memphis	USA	cewebstr@memphis.edu
Michael Wolf	University of British Columbia	Canada	mwolf@chem.ubc.ca
Artem Masunov	University of Central Florida	USA	Artem.masunov@ucf.edu