



Invitation

2nd Annual CdTe Device Workshop

November 1-2nd, 2018, at The University of Toledo, Ohio

Organized by First Solar, Colorado State University, and The University of Toledo,

Dear Colleagues,

Last year we held our first CdTe workshop in Santa Clara, CA, and the feedback we have received from the participants was overwhelmingly positive. A deeper technical interaction than what is usually achievable at conferences and the exclusive focus on CdTe made this a memorable and useful event. We as the organizers always envisioned this first workshop to be a beginning of a series of meetings, with the intention to initiate a closer research community, clearer definition of research needs, and identification of new opportunities for collaborative research.

In this spirit, it is our pleasure to invite you to the 2nd workshop to be hosted at The University of Toledo Campus. Randy Ellingson has volunteered to be our co-organizer and host for this year's event. The 2nd workshop will yet again be structured in two parts:

1. Day 1: Presentation of research results. Every primary participating organization is strongly encouraged to participate and present results.
2. Day 2: A discussion on research directions structured around the main themes of the problems (front interface, absorber, etc) and guided by short presentations of the participants. At least one short presentation from every organization is required. Where we have two or more PIs from the same organization, multiple submissions are strongly encouraged.

More details on the agenda will follow.

~~For the moment, please register for participation following this link by 9/21/2018. This registration is required for everyone, including those that may have already responded to the earlier inquiry. Provide A) Name, B) Day 1: Title of p~~

Registration is closed

<https://goo.gl/forms/mKPGsHhYv7z5a153>

This event is by invitation only; please do not forward this message. Similar to last year, we feel it is appropriate that Day 1 may have additional attendees, in particular, allowing locals to hear about new results and to interact with all of you. On day 2, we want to keep the group size limited.

Directions to the meeting site and agenda will be distributed later. **Please follow instructions on the next page for hotel reservations.**

Looking forward to a great workshop!

Markus Gloeckler, Jim Sites, Gang Xiong, and Randy Ellingson

Recommended Hotel

Hampton Inn and Suites, Toledo Westgate
3434 Secor Road
Toledo, OH 43606
t: 419.214.5555 f: 419.214.5556
hampton.com

\$114 Group Rate is available until

October 16th

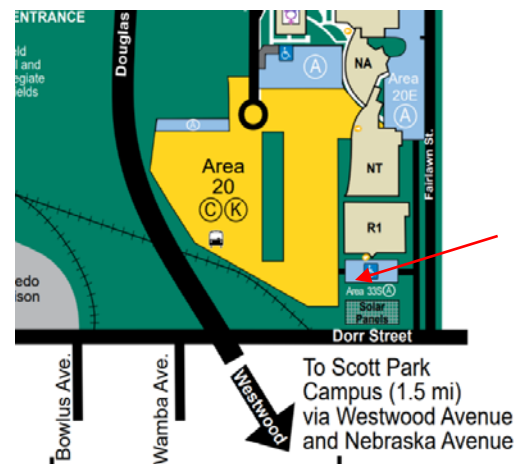
Workshop attendees wanting to stay at the Hampton Inn should call the hotel and ask for a reservation under the “University of Toledo CdTe Workshop”. Amenities include free hot breakfast offered daily, free high-speed and Wireless Internet access in the lobby and all guestrooms, and Guests have the option to earn both HHonors points & airline miles. The room rate is \$114 plus tax for a typical Oct. 31 arrival and Nov. 2 departure, and the hotel will give you the same rate if you want to add a night either before or after those dates. The standard King guest rooms have a King bed with a sleeper sofa and the standard doubles have two queen beds. There are King & Queen Suites available.

Event Location

Research and Technology Complex 1 “R1”
2600 Dorr St., Toledo, OH 43607
Campus Map: <https://www.utoledo.edu/campus/directions/pdfs/Main-Campus-Map.pdf>

Transportation

- Most practical airport is Detroit Metropolitan (DTW) – approx. 1hr transportation
- Toledo Express (TOL) offers very few flights daily – approx. 20mins transportation
- No local transportation is arranged, share rides or rely on Uber/Lyft, etc.



Parking

Parking is allowed in Area 20 (see map) next to R1 Building. Anyone parking in Lot 33 in front of the R1 may be ticketed unless they register their vehicle details (year, make, model, color, license plate) with the R1 receptionist.

Meals

The University of Toledo is providing refreshments and lunches at the meeting venue. A group dinner is offered on Nov 1st, starting at or around 6pm and sponsored by First Solar, details to follow. **Please inform Randy Ellingson of any special dietary restrictions (randy.ellingson@utoledo.edu, 419.530.3874)**

Presentations

A presentation laptop will be available as well as a laser pointer. Attendees are strongly encouraged to bring presentation on a USB drive and upload presentations during breaks ahead of their assigned sessions.

Event Dinner (Update!)

[The Registry Bistro](#), 144 N Superior St, Toledo, OH 43604, (419) 725-0444

Appetizers will be served at arrival time (6-6:30p), Parking nearby in a garage or street parking ([MAP](#))

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Final 2018-10-28

DAY 1: 15 min/presentation incl Q/A				
	Arrive		8:15 AM	15
	Welcome		8:30 AM	15
Tom Myers	Valence band offsets in CdTeSe alloys		8:45 AM	Absorbers 15
Darius Kuciauskas	Comparison of CdSeTe and CdTe electronic properties		9:00 AM	Absorbers 15
Adam Phillips	Towards a wide bandgap CdZnTe solar cell		9:15 AM	Absorbers 15
Chris Ferekides	n-type CdTe Cells		9:30 AM	Absorbers 15
Heayoung Yoon	Characterization of Local Properties of Individual Grains and Their Interfaces		9:45 AM	Absorbers 15
	Discussion/Buffer/Break		10:00 AM	30
Alessandro Romeo	Wet deposition of Cu compound for the back contact of CdTe solar cells		10:30 AM	Contacts 15
Michael Heben	Towards a Passivated Back Surface		10:45 AM	Contacts 15
Yanfa Yan	Characterization of the effects of CdTe back surface treatment on device performance		11:00 AM	Contacts 15
Matthew Reese	Revealing and Effecting Changes to Buried Interfaces		11:15 AM	Contacts 15
Stuart J. C. Irvine	Tuning the band offset of the HRT layer to increase Voc		11:30 AM	Contacts 15
	Discussion/Buffer/Break		11:45 AM	15
	Lunch		12:00 PM	60
Craig L. Perkins	Tin oxide-catalyzed production of ultrathin sulfur and tellurium oxide layers in high efficiency CdTe		1:00 PM	Contacts 15
Colin Wolden	Understanding buried interfaces		1:15 PM	Contacts 15
Kuo-Jui Hsiao	Electroplated CdTe Solar Module And Its Application		1:30 PM	Devices 15
Al Compaan	Flexible CdTe minimodules on thin ceramic ribbon		1:45 PM	Devices 15
Jim Sites	Overview of CSU Cells		2:00 PM	Devices 15
Kurt Barth	Advances In Processing High Efficiency CdTe Devices		2:15 PM	Devices 15
	Discussion/Buffer/Break		2:30 PM	20
Dingyuan Lu	Sub-bandgap states in As-doped CdTe		2:50 PM	p-doping 15
John Moseley	Sub-bandgap states in As-doped CdTe cont'd		3:05 PM	p-doping 15
Igor Sankin	Kinetic simulation of Cu doping in chlorinated CdSeTe absorbers		3:20 PM	p-doping 15
	Discussion/Buffer/Break		3:35 PM	20
Admin	Tour of University of Toledo facilities (2 Groups)		3:55 PM	Tour 60
Admin	End Of Day		4:55 PM	
Dinner	The Registry Bistro, Toledo		6:00 PM	
DAY 2: 10min/presentation				
	Arrive		8:15 AM	15
Admin	Purpose/Rules of the day		8:30 AM	Welcome 15
	Fundamentals & Others		8:45 AM	90
	Gang Xiong			
	Bill Huber			
	Markus Gloeckler			
	W. S. Sampath			
	Jim Sites			
	Nik Podraza			
Admin	Break		10:15 AM	15
	Absorber Basics I		10:30 AM	90
	Chris Ferekides			
	Kuo-Jui Hsiao			
	Al Compaan			
	Wyatt Metzger			
	Colin Wolden			
	Tom Myers			
Admin	Lunch		12:00 PM	60
	Absorber Basics II & Gr V Doping		1:00 PM	60
	Robert Klie			
	Heayoung Yoon			
	Stuart J. C. Irvine			
	Kelvin G. Lynn			
Admin	Break		2:00 PM	15
	Contacts		2:15 PM	75
	Yanfa Yan			
	Michael Heben			
	Alessandro Romeo			
	Craig L. Perkins / Matt Reese			
	Darius Kuciauskas			
Admin	Open Floor on priorities for CdTe research		3:30 PM	45
Admin	Depart / Safe Travels!		4:15 PM	Depart