

Joint Meeting:  
5th Annual Workshop on  
**Laser Cooling of Solids**



and  
2nd Annual Review on MURI Project  
**Consortium for Laser Cooling in Solids (CLCS)**

**Friday, Oct. 6 8:30 am - 5:30 pm**



**Embassy Suites Hotel (NW corner of Lomas & I-25), Albuquerque, NM**

**Room: Ocotillo II**

*see page 3 for driving directions*

**Oral Presentations**

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
8:30 AM - 9:00 AM	<b>Registration &amp; Breakfast</b>	
9:00 AM - 9:30 AM	Mansoor Sheik-Bahae, <i>Univ. New Mexico</i>	Welcome and Introduction
9:30 AM - 10:00 AM	Mansoor Sheik-Bahae, <i>Univ. New Mexico</i>	Progress on Solid-State Laser Cooling at UNM
10:00 AM - 10:30 AM	Rolf Binder, <i>Univ. of Arizona</i>	Theory of semiconductor laser cooling: from few Kelvin to above room temperature
10:30 AM - 10:45 AM	Coffee Break	
10:45 AM - 11:15 AM	Diana Huffaker, CHTM- UNM	Advanced Heteroepitaxy for laser cooling applications.
11:15 AM - 11:45 AM	Yong-Hang Zhang, Arizona State Univ.	Latest Progresses in the Study of Electroluminescence Refrigeration
11:45 AM - 2:00 PM	<b>Lunch (Buffet, Room Ocotillo I) &amp; Poster Session</b>	
2:00 PM - 2:30 PM	Richard Epstein, <i>LANL/UNM</i>	Progress on Solid-State Laser Cooling at LANL
2:30 PM - 3:00 PM	Jacob Khurgin, <i>John-Hopkins Univ.</i>	Novel Concepts for Laser Cooling in Solids
3:00 PM - 3:30 PM	Zameer Hasan, <i>Temple University</i>	Laser cooling in Erbium doped soft phonon systems
3:30 PM - 3:45 PM	Coffee Break	
3:45 PM - 4:15 PM	David Emin, <i>UNM</i>	Electron-lattice interactions and solid-state optical refrigeration
4:15 PM - 4:45 PM	Dan Huang, <i>AFRL</i>	Microscopic theory for laser cooling of semiconductors
4:45 PM - 5:15 PM	Gary Mills, <i>Ball Aerospace Corp.</i>	A fluorescent element design concept (US Citizens & Residents Only)
5:15 PM -		

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**Posters (11:45 am-2:00 pm)**

#	Title	Presenter	Affiliation
1	Spectrally Resolved Phase Fluorometry on Double-Heterostructures grown by MBE and MOCVD	Alexander Albrecht	UNM - CHTM
2	Heterostructure Interface Investigations using Nearfield Fluorescence Lifetime Imaging	Daniel Bender	UNM- Physics
3	Theoretical analysis of the breakeven condition in the laser cooling of semiconductors	Greg Rupper	University of Arizona
4	Microscopic theory of luminescence of bulk semiconductors	Nai-Hang Kwong	University of Arizona
5	Differential Luminescence Thermometry in Yb-Doped Systems	Scott Greenfield	LANL
6	Advanced Algorithms for Luminescence Thermometry	Mark Fleharty	UNM- Comp. Science.
7	Advances in Laser Cooling of Tm-doped Solids	Ed Soto / Wendy Patterson	UNM- Physics
8	A general device platform for semiconductor optical refrigeration	Shuiqing Yu	Arizona State Univ.
9	Determination of internal quantum efficiency in semiconductors suitable for luminescence refrigeration	Jiangbo Wang	Arizona State Univ.
10	Performance of semiconductor optical refrigerators in terms of bandgap energy and conversion efficiency	Shane Johnson	Arizona State Univ.
11	Cavity Enhanced Absorption in Rare-Earth Laser Cooling	Denis Seletskiy	UNM- Physics
12	Laser Cooling Characterization in GaAs Heterostructures	Babak Imangholi /Chengago Wang	UNM- Physics
13	Thermal Nanogap Fabrication and Testing	Ryan Martin/ Andreas Stintz	UNM - CHTM
14	High Purity Yb <sup>3+</sup> : ZBLAN for Laser Cooling: Material Growth and Modeling	Markus Hehlen	LANL
15	Growth and Characterization of GaAs/InGaP Heterostructure for Semiconductor Laser Cooling	N. Nuntawong / R. Lahghumavarapu	UNM - CHTM

Registration (\$50), on-site (cash or personal checks only)

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**Driving Direction**

From the Albuquerque Intl. Sunport - Take I-25 North toward Santa Fe. Take Lomas, Exit 225. Turn left onto Lomas. Go 2 blocks and turn right onto Woodward Place. The hotel is located on right side.

From Santa Fe - Take I-25 South - Take Lomas, Exit 225. Turn right on Lomas. Go 1 block and turn right onto Woodward Place. The hotel will be on the right side.

I-40 West to I-25 South to Martin Luther King Jr. Blvd. Turn right on Martin Luther King Jr. Blvd. Go to 2nd stop light and turn right onto Edith. Go to Lomas Blvd. and turn right. Take an immediate left onto Woodward Place. The hotel will be on the right side.

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