TSRC Workshop on Defect Chemistry and Physics of Low Dimensional Materials

July 11 - 15, 2017 Location: Telluride Intermediate School, 725 W Colorado Ave., Telluride Colorado

Overview

	Monday (7/10/17)	Tuesday 7/11	Wednesday 7/12	Thursday 7/13	Friday 7/14	Saturday 7/15
Morning		Breakfast Presentations (4)	Group hike or free time	Breakfast Presentations (4)	Group hike or free time	Breakfast Final Discussion
Lunch		catered on-site		catered on-site		Adjourn
Afternoon		Presentations (5)	Presentations (5)	Presentations (5)	Presentations (5)	
6pm	Informal Welcome Reception (the Phoenix Bean)	Public Town Talk (Mountain Village)	TSRC picnic (Telluride Intm. School)			
Evening					Group Dinner (Rustico Ristorante)	

All presentations are scheduled for 40 minutes (30 min presentation + 10 min discussion)

Monday

Evening	6:00-8:30 PM	Informal Welcome Reception The Phoenix Bean, 221 W Colorado Ave.

Tuesday		**Speaker**	**Institution**	**Title**
Morning	8:30 AM	breakfast served at TSRC		
Moderator:	8:50 AM	Phil Collins	UC Irvine	*Welcome and Introductory remarks*
Collins	9:00 AM	YuHuang Wang	Univ. of Maryland	*Molecularly tunable fluorescent quantum defects: What makes a "perfect defect"?*
	9:40 AM	Sergei Tretiak	Los Alamos Natl. Lab	*Chemical functionalization and optical properties of CNT materials*
	10:20 AM	coffee break		
	10:40 AM	Angela Hight Walker	NIST	*TBA*
	11:20 AM	Richard Martel	Univ. of Montreal	*Defect-mediated second order resonances in the mid-ir and Raman spectra of graphene and exfoliated black phosphorus*
	12:00 PM	catered lunch at TSRC		
Afternoon		**Speaker**	**Institution**	**Title**
Moderators:	1:30 PM	Mark Reed	Yale Univ.	*Tunneling spectroscopy of 0-dimensional states in semiconductor quantum wells*
Wang	2:10 PM	Alexander Hoegele	Munich Quantum Inst.	*Cryogenic spectroscopy of covalently functionalized CNTs*
	2:50 PM	coffee break		
	3:20 PM	Steve Doorn	Los Alamos Natl. Lab	*CNT defect states as quantum emitters*
	4:00 PM	Yuhei Miyauchi	Kyoto Univ.	*Up-conversion photoluminescence of CNTs and its enhancement by defect engineering*
	4:40 AM	Concluding discussion		
Evening	6:00 PM	Public "Town Talk"	Telluride Conference Center in Mountain Village	

Wednesday

Morning	7:00 AM	Challenge climb: Ajax Peak or Liberty Bell Peak
	9:00 AM	Group hike to Bear Creek Falls (5 mi. RT). Meet at Baked in Telluride

Afternoon		**Speaker**	**Institution**	**Title**
Moderators:	1:30 PM	Mark Hersam	Northwestern Univ.	*Probing and manipulating defects in two-dimensional materials*
Doorn &	2:10 PM	Jario Velasco	UC Santa Cruz	*Nanoscale control and visualization of graphene quantum dots*
Martel	2:50 PM	coffee break		
	3:20 PM	Laurent Cognet	Bordeaux, France	*Super-resolution imaging of exciton localization in pristine and covalently-functionalized CNTs*
	4:00 PM	Daniel Heller	MSKCC	*Defect SWCNT photoluminescence for biomedical applications*

	4:40 PM	Michael S. Strano	MIT	*Transport and phase behavior in CNT nanofluidic channels*
	5:20 PM	Concluding discussion		
Evening	6:00 PM	TSRC Picnic	Telluride Intermediate School	

Thursday		**Speaker**	**Institution**	**Title**
Morning	8:30 AM	breakfast served at TSRC		
Moderator:	9:00 AM	Shigeo Maruyama	Univ. of Tokyo	*Electrically induced full-length burning of metallic CNTs in horizontally aligned arrays*
Fagan	9:40 AM	Haitao Liu	Univ. of Pittsburgh	*Electric field modulation of graphene oxidation*
	10:20 AM	coffee break		
	10:40 AM	Su-Yuan Xie	Xiamen Univ.	*Defect chemistry of fused-pentagon on fullerene surfaces*
	11:20 AM	Shangfeng Yang	USTC	*Introducing heptagons into fullerene cages via skeletal transformation*
	12:00 PM	catered lunch at TSRC		
Afternoon		**Speaker**	**Institution**	**Title**
Moderators:	1:30 PM	Ming Zheng	NIST	*Controlling CNT chemistry by DNA coating*
Hight Walker &	2:10 PM	Michael Filler	Georgia Tech.	*Surface chemical choreography of group IV semiconductor nanowires and their heterostructures*
Cognet	2:50 PM	coffee break		
	3:20 PM	Chen Yang	Purdue Univ.	*Highly sensitive and high-speed imaging of grain boundaries in graphene by transient absorption microscopy*
	4:00 PM	Masahiro Ishigami	Univ. of Central Florida	*Resistance induced by a single potassium atom on chiral-angle known CNTs: understanding the impact of a model scatterer for nanoscale sensors*
	4:40 PM	Boris Yakobson	Rice University	*Theory of defect structure and electronics in low-dimensional materials*
	5:20 PM	Concluding discussion		

Friday				
Morning	7:00 AM	Challenge hike: Blue Lake		
	9:00 AM	Group hike to Bridal Veil Falls (3.6 mi. RT). Meet at Baked in Telluride		
Afternoon		**Speaker**	**Institution**	**Title**
Moderators:	1:30 PM	Svetlana Kilina	North Dakota State Univ.	*Impact of chemical functionalization and chlorine doping on photophysics of CNTs*
Reed	2:10 PM	Jeffrey Fagan	NIST	*Endohedral filling and specifying initial pristine populations of SWCNTs*
	2:50 PM	coffee break		
	3:20 PM	Yaqiong Xu	Vanderbilt Univ.	*Carbon-based optoelectronic probes for biological applications*
	4:00 PM	Delphine Bouilly	Columbia	*Electrical transport signature of ensemble and single-point covalent defects in CNTs*
	4:40 PM	Phil Collins	UC Irvine	*Electrical resistance of covalent and non-covalent defects in SWCNTs*
	5:20 PM	Concluding discussion		
Evening	6:00 PM	Group Dinner	Rustico Ristorante, 114 E. Colorado	

Saturday	8:30 AM	breakfast served at TSRC
Morning	9:00 AM	Future Directions Discussion
	10:30 AM	Adjourn