

AGENDA

Day 1 (Morning) – Thursday, September 19, 2019
MLK Building, Tilden Room (5th floor)

Time	Activity / Topic	Speakers
7:30 AM	Breakfast & Check-In	
8:00 AM	Welcome & Introduction	
	Review of Agenda Goals for the Retreat Center Overview	Eli Yablonovitch
8:30 AM	Theme I: Nanoelectronics	
	Theme I Overview	Eli Yablonovitch
	Progress on Graphene Nanoribbon Project	Steven Louie
	Progress on III-V Nanowire Transistor Project	Jesus del Alamo
	Progress on 2D Chalcogenide Transistor Project	Shiekh Zia Uddin
	Open Discussion	
9:45 AM	Break & Poster Set-Up	
10:05 AM	Theme II: Nanomechanics	
	Theme II Overview	Tsu-Jae King Liu
	Progress on NEM Relay Project	Junqiao Wu
	Progress on Squitch Project	Farnaz Niroui
	Progress on Stritch Project	David Zubia (remote)
	Open Discussion	
11:20 AM	System Integration	
	System Integration Overview	Rawan Naous
	Open Discussion	
11:50 AM	Lunch and Poster Session	

AGENDA

Day 1 (Afternoon) – Thursday, September 19, 2019

MLK Building, Tilden Room (5th floor)

Time	Activity / Topic	Speakers
1:10 PM	Theme IV: Nanomagnetism	
	Theme IV Overview	Jeffrey Bokor
	Progress on Ultrafast Magnetic Switching	Jeffrey Bokor
	Progress on Spin-Orbit Torque Switching Using Topological Effects	Xiang Li
	Spin Currents in Amorphous Materials	Sayeef Salahuddin
	Open Discussion	
2:25 PM	Break	
2:45 PM	Theme III: Nanophotonics	
	Theme III Overview	Ming Wu
	Progress on Antenna-Enhanced LEDs	Ming Wu
	Progress on Antenna Waveguide Coupling	Nicolas Andrade
	Progress on III-V Hetero Epitaxy	Jeehwan Kim
	Open Discussion	
4:00 PM	Walk to <u>Faculty Club</u> (E3S Industry Partners and Faculty) or <u>Sutardja Dai Hall</u> (E3S Students and Postdocs)	
4:30 PM	Parallel Sessions:	
	— E3S Faculty and Industry Partners: Feedback & Discussion Meeting (Lewis Room, Faculty Club)	
	— Students and Postdocs: Professional Development Workshop (Room 250, Sutardja Dai Hall)	
6:00 PM	Wine Reception, Dinner and Recognitions (Faculty Club)	
	Heyns Room (Faculty Club)	

AGENDA

Day 2 (Morning) – Friday, September 20, 2019

MLK Building, Tilden Room (5th floor)

Time	Activity / Topic	Speaker / Facilitator
7:30 AM	Breakfast	
8:00 AM	Center Management	
	Management, Budget, Preparing for September 2020	Michael Bartl
	Open Discussion	
8:30 AM	Education and Diversity	
	Education Overview	Nicole McIntyre
	Diversity Overview	Kedrick Perry
	Open Discussion	
	Diversity Training/Workshop	Kedrick Perry
9:45 AM	Break	
10:00 AM	E3S Education Legacy	
	Breakout Sessions	Nicole McIntyre, Michael Bartl (Moderators)
	Reporting from Breakout Sessions	
	Open Discussion	
11:25 AM	Closing Remarks	Eli Yablonovitch
11:30 AM	Lunch (boxed)	
11:30 AM	Executive Committee ONLY ExComm Meeting (1 hour)	

LIST OF POSTERS

Pin-Chun Shen, Yuxuan Lin, Cong Su, Christina McGahan, Katherine Aidala, Ju Li, Tomas Palacios, Jing Kong, "Healing of Donor Defect States in Monolayer Molybdenum Disulfide through CVD Oxygen Doping"

Sri Krishna Vadlamani, Tianyao Patrick Xiao, Eli Yablonovitch, "Lineshape and Optimization"

Ilya Piskun, Raymond Blackwell, Erin Brooks, Joaquim Jornet-Somoza, Angel Rubio, Felix R. Fischer, "Nitrogen substitutional doping in graphene nanoribbons"

Fangzhou Zhao, Jingwei Jiang, Ting Cao, Yea-lee Lee, Steven G. Louie, "Topological phases in graphene nanoribbons and metallic graphene nanoribbons"

Shiekh Zia Uddin, Der-Hsien Lien, Ali Javey, "Perfectly Bright Low Dimensional Semiconductors"

Zunaid Omair, Gregg Scranton, Luis M. Pazos-Outon, T. Patrick Xiao, Myles A. Steiner, Vidya Ganapati, Per F. Peterson, John Holzrichter, Harry Atwater, Eli Yablonovitch, "A new thermophotovoltaic record"

Luis M. Pazos Outon, Patrick T. Xiao, Eli Yablonovitch, "Fundamental efficiency limit of lead halide perovskite solar cells"

Xiaoer Hu, Sergio F. Almeida, Zhixin Alice Ye, Tsu-Jae King Liu, "Ultra-Low-Voltage Operation of MEM Relays for Cryogenic Logic Applications"

Zachary Nelson, Jinchi Han, Kosuke Yoshinaga, Jeffrey H. Lang, Vladimir Bulovic, Faranaz Niroui, Timothy M. Swager, "Tuning Squitch Performance Through Molecular Design"

Penghong Ci, Sara Fathipour, Sergio Fabian Almeida, Zhixin Ye, Bivas Saha, Farnaz Niroui, Tsu-Jae King Liu, Junqiao Wu, "Exploring the hysteresis in TMD FETs and NEM relays"

Jinchi Han, Zachary Nelson, Mingye Gao, Jing Kong, Timothy Swager, Farnaz Niroui, Jeffrey Lang, Vladimir Bulović, "Towards High-Performance NEM Switches Based On Tunneling Through Compressible Molecular Junctions (Squitch)"

Rawan Naous, Lazar Supic, Yoonhwan Kang, Ranko Sredojevic, Anish Singhani, and Vladimir Stojanovic, "Tuning Deep Learning Algorithms and Generators for Efficient Edge Inference"

Urmita Sikder, Giulia Usai, Ting-Ta Yen, Kelsey Herron, Mariana Martinez, Louis Hutin, Tsu-Jae King Liu, "BEOL Reconfigurable Interconnects in Standard CMOS Process"

Kevin Han, Seth Fortuna, Sujay Desai, Matin Amani, Ali Javey, Eli Yablonovitch, Ming C. Wu, "TMDC nanoLEDs for High-Speed Energy-Efficient Optical Interconnects"

Nicolas M. Andrade, Sean Hooten, Seth A. Fortuna, Eli Yablonovitch, and Ming C. Wu, "Efficient Coupling of an Electrically Injected Optical Antenna-LED to a Single-Mode Waveguide"

Sean Hooten, Nicolas M. Andrade, Ming C. Wu, Eli Yablonovitch, "Analysis of Antenna-LED versus Laser Modulation Speed"

Cheng-Hsiang (Jason) Hsu, Niklas Roschewsky, Sayeef Salahuddin, "Spin-orbit torque induced magnetization switching in nano-scale ferrimagnetic GdCo"

Jyotirmoy Chatterjee, Akshay Pattabi, Manel Molina Ruiz, Sayeef Salahuddin, Frances Hellman, Jeffrey Bokor, "Ultrafast helicity independent all-optical magnetization reversal of Co/Pt multilayers coupled with CoGd"

Shehrin Sayed, Cheng-Hsiang Hsu, Sayeef Salahuddin, "Electric-Field Control of Interlayer Exchange Coupling for Magnetization Switching"

Xiang Li, Shy-Jay Lin, Mahendra DC, Chengyang Yao, Wilman Tsai, Shan X. Wang, "Materials Requirements of High-Speed and Low-Power Spin-Orbit-Torque Magnetic Random-Access Memory"

Dennis Toledo, Brayan Navarrete, Mark Stone, Kevin Luongo, Ping Wang, Ping Liang, Sakhrat Khizroev, "A Theoretical Study of Switching Energy Efficiency in sub-10-nm Spintronic Devices"

Tony Vo Hoang, Derek Pople, Scott Meyer, Jeff Cain, Alex Zettl, "Synthesis and Characterization of Zirconium Diselenide Nanoribbons Encapsulated in Carbon Nanotubes"

Alice Wu, Alon Vardi, Jesús del Alamo, "Electrical Characterization of Non-Stoichiometric WOX"