

# Program of the International Workshop on *Spin Coherence and Topological Order in Semiconductor Nanosystems*

CSRC Conference Room I, 1<sup>st</sup> Floor | November 2 – November 4, 2016

Wednesday, November 2, 2016	
08:00 – 17:00	<b>Registration</b>
09:00	<i>Pickup from Holiday Inn Hotel</i>
09:15	<i>Pickup from Yitel</i>
09:30 – 09:40	<b>Welcoming Address</b>
<b>Morning Session I, Chair: Daniel Loss</b>	
09:40 – 10:15 (35 minutes)	David Awschalom Quantum Control of Single Spins in Semiconductors
10:15 – 10:50 (35 minutes)	Martin B. Plenio Diamond Hyperpolarisation for Sensing and Quantum Simulation
10:50 – 11:20	<b><i>Photo Taking &amp; Coffee Break</i></b>
<b>Morning Session II, Chair: Shun-Qing Shen</b>	
11:20 – 11:55 (35 minutes)	Rosario Fazio Localized Majorana-Like Modes in a Number Conserving Setting: An Exactly Solvable Model
11:55 – 12:30 (35 minutes)	Daniel Loss Majorana Fermions to Parafermions in Nanostructures and Atomic Chains
12:20 – 14:00	<i>Lunch &amp; Break</i>
<b>Afternoon Session I, Chair: Yaroslav Tserkovnyak</b>	
14:00 – 14:35 (35 minutes)	Andre Bernevig TBA
14:35 – 15:10 (35 minutes)	Jin-Feng Jia Observation of Majorana fermions in the vortex on Bi <sub>2</sub> Te <sub>3</sub> /NbSe <sub>2</sub>
15:10 – 15:45 (35 minutes)	Li Lu Search for Majorana Zero Modes in Josephson Devices Constructed on Bi <sub>2</sub> te <sub>3</sub> Surface
15:45 – 16:15	<i>Coffee Break</i>
<b>Afternoon Session II, Chair: Peter Stano</b>	
16:15 – 16:50 (35 minutes)	Jelena Klinovaja Topological States in Coupled Wire and Floquet Systems
16:50 – 17:25 (35 minutes)	Wang Yao Moire Superlattice Modulation of Optical and Topological Properties in Van Der Waals heterobilayers
17:25 – 19:00	<i>Dinner</i>
19:00	<i>Pickup to Yitel &amp; Holiday Inn Hotel</i>

Thursday, November 3, 2016	
09:00	<i>Pickup from Holiday Inn Hotel</i>
09:15	<i>Pickup from Yitel</i>
<b>Morning Session I, Chair: Rosario Fazio</b>	
09:30 – 10:05 (35 minutes)	Klaus Ensslin Experimental Fingerprint of the Inverted Phase in InAs/GaSb Coupled Quantum Wells
10:05 – 10:40 (35 minutes)	Yaroslav Tserkovnyak Domain Wall in a Quantum Anomalous Hall Insulator as a Magnetoelectric Piston
10:40 – 11:10	<i>Coffee Break</i>
<b>Morning Session II, Chair: Jelena Klinovaja</b>	
11:10 – 11:45 (35 minutes)	Kai Chang Semiconductor Interface Engineering Towards Topological Phases
11:45 – 12:20 (35 minutes)	Hong-Qi Xu TBA
12:30 – 14:00	<i>Lunch &amp; Break</i>
<b>Afternoon Session I, Chair: Andre Bernevig</b>	
14:00 – 14:35 (35 minutes)	Shun-Qing Shen Chiral Anomaly in Topological Weyl Semimetal and Graphene
14:35 – 15:10 (35 minutes)	Hong Yao Emergence of Supersymmetry on the Boundary of Topological Insulators and in the Bulk of Weyl Semimetals
15:10 – 16:10	<i>Coffee Break &amp; Poster session</i>
<b>Afternoon Session II, Chair: William A. Coish</b>	
16:10 – 17:45 (35 minutes)	Seigo Tarucha Hybrid Spin-1/2 and Singlet-Triplet Spin Qubits with A Triple Quantum Dot
17:45 – 17:20 (35 minutes)	Peter Stano Dephasing of a Singlet-Triplet Qubit in a Gated GaAs Dot due to Non-Ergodic Hyperfine Noise
17:20 – 19:00	<i>Dinner</i>
19:00	<i>Pickup to Yitel &amp; Holiday Inn Hotel</i>
Friday, November 4, 2016	
09:00	<i>Pickup from Holiday Inn Hotel</i>
09:15	<i>Pickup from Yitel</i>
<b>Morning Session I, Chair: Richard Warburton</b>	
09:30 – 10:05	Andrew S. Dzurak

(35 minutes)	Spin-Based Quantum Computing in A Silicon CMOS-Compatible Platform
10:10 – 10:40 (35 minutes)	Dimitrie Culcer A Charge Insensitive Single-Atom Spin-Orbit Qubit in Silicon
10:40 – 11:40	<i>Coffee Break &amp; Poster session</i>
<b>Morning Session II, Chair: Guido Burkard</b>	
11:40 – 12:15 (35 minutes)	Silvano De Franceschi Silicon CMOS Platform for Spin-Based Quantum Information Processing
12:15 – 14:00	<i>Lunch &amp; Break</i>
<b>Afternoon Session I, Chair: Seigo Tarucha</b>	
14:00 – 14:35 (35 minutes)	Richard Warburton The Hyperfine Interaction of Single Spins in a Self-Assembled Quantum Dot
14:35 – 15:10 (35 minutes)	William A. Coish Decoupling and Decoherence for Spin-Resonator State Transfer
15:10 – 15:45 (35 minutes)	Xue-Dong Hu Nonadiabatic Spin Manipulation with Adiabatic Protocols
15:45 – 16:15	<i>Coffee Break</i>
<b>Afternoon Session II, Chair: Jian-Qiang You</b>	
16:15 – 16:50 (35 minutes)	Guido Burkard Coupling of Three-Spin Qubits to Their Electric Environment
16:50 – 17:25 (35 minutes)	Guo-Ping Guo TBA
17:25 – 17:30	<b>Closing Remarks</b>
17:30 – 19:00	<i>Dinner</i>
19:00	<i>Pickup to Yitel &amp; Holiday Inn Hotel</i>