Frontiers in Quantum Information Physics and Technology

June 10th, 2019

Koshiba Hall, University of Tokyo

9:00-9:10

Opening Remarks

Prof. Tetsuo Kodera (Tokyo Institute of Technology)

9:10-10:30

Session I **Chair: A. Oiwa**

Prof. Daniel Loss (University of Basel, RIKEN) (40 min)

Majorana and Andreev Bound States in Proximitized Rashba Wires and Layers

Prof. Hongqi Xu (Peking University) (40 min)

Semiconductor InSb nanolayers: A new platform for developments of quantum and topological devices

10:30-10:50 COFFEE BREAK

10:50-12:10

Session II **Chair: M. Yamamoto**

Prof. Laurens W. Molenkamp (University of Würzburg) (40 min)

Topology in HgTe

Prof. Wilfred G. van der Wiel (University of Twente) (40 min)

Evolving functionality in disordered nanosystems

12:10-13:40 LUNCH

13:40-15:20

Session III **Chair: K. Ono**

Prof. Yoshiro Hirayama (Tohoku University) (40 min)

Hyperfine interaction and resistively-detected NMR in semiconductor quantum systems

Prof. Michihisa Yamamoto (RIKEN) (30 min)

Detection of the Kondo cloud using electron interferometers

Prof. Akira Oiwa (Osaka University) (30 min)

Transferring quantum states form single photons to single electron spins in gate-defined quantum dots

15:20-15:40 COFFEE BREAK

15:40-17:30

Session IV **Chair: T. Kodera**

Prof. Michel Pioro-Ladrière (Université de Sherbrooke) (40 min)

Engineering solid-state qubits with silicon industrial solutions

Prof. Keiji Ono (RIKEN) (30 min)

A high-temperature silicon qubit

Prof. Seigo Tarucha (RIKEN) (40 min)

Si-based quantum computing

17:30-17:40

Closing Remarks

Prof. Seigo Tarucha (RIKEN)

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