

6 th GCOE International Symposium on Photonics and Electronics Science and Engineering

March 11 (Mon), 2013

Katsura-Hall, Katsura-Campus, Kyoto University, Kyoto, Japan

Technical Program

Opening (9:30 - 9:45)

9:30-9:35 Opening

9:35-9:45 Overview of Photonics and Electronics Science and Engineering
Susumu Noda (Kyoto University)

Session 1: Photonics (9:45 - 12:05)

9:45-10:15 Semiconductor Quantum Technologies for Information Processing and Precision
Measurements (Invited)

Dirk Englund (Massachusetts Institute of Technology)

10:15-10:40 Thermal Emission Control using Photonic Crystals

Takashi Asano and Susumu Noda (Kyoto University)

10:40-11:10 Prospect of GaN Light-Emitting Diodes on Glass Substrates (Invited)

Jun Hee Choi (Samsung Electronics)

11:10-11:40 AlN-based UV/Visible Light-Emitting Devices (Invited)

Yoshitaka Taniyasu, (NTT Basic Research Laboratories)

11:40-12:05 Crystal Growth and Optical Properties of AlGa_N Based Quantum Wells for Deep
Ultraviolet Emitters

Mitsuru Funato and Yoichi Kawakami (Kyoto University)

Lunch (12:05 - 13:00)

Poster Session (13:00 - 14:15)

Session 2: Electronics (14:15 - 16:05)

14:15-14:45 Polarization-Engineered Nitride Heterostructure Devices by MBE (Invited)

Debdeep Jena (University of Notre Dame)

14:45-15:10 Pseudomorphic AlN Grown on SiC with Various Orientations by Molecular Beam Epitaxy

Jun Suda (Kyoto University)

15:10-15:40 Tunable THz emission from Bi₂Sr₂CaCu₂O_{8+δ} mesa devices (Invited)

Ulrich Welp (Argonne National Laboratory)

15:40-16:05 Collective quantum functions of superconducting intrinsic Josephson junctions

Itsuhiro Kakeya and Minoru Suzuki (Kyoto University)

Break (16:05-16:20)

Session 3: Fundamentals (16:20 - 17:40)

16:20-16:50 Quantum Computation with Surface Electrode Ion Traps (Invited)

Ken Brown (Georgia Institute of Technology)

16:50-17:15 Development Status of Yb^+ and Ba^+ Optical Clocks for Search for Temporal Variation of the Fine Structure Constant

Kazuhiko Sugiyama, Yasutaka Imai, Masatoshi Mitaki, Tatsuya Nishi, Yoshihiro Hara, Tomoya Momiyama, Yoshikazu Ideta, Hirotoyo Fujisaki, Shohei Higashitani, and Masao Kitano (Kyoto University)

17:15-17:40 Nanoscale Electrical Properties at Solid-liquid Interfaces Investigated by Frequency Modulation Atomic Force Microscopy

Hirofumi Yamada, Kei Kobayashi, and Kei Noda (Kyoto University)

Closing (17:40 - 17:45)

Reception (18:00 – 19:30)