The 16th Takayanagi Kenjiro Memorial Symposium
Research Institute of Electronics, Shizuoka University

Toward Advanced Imaging Science Creation
Interdisciplinary Innovation in Nano Vision, Materials Science, and Mechatronics

Tuesday, November 11, 2014

10:00 Opening: Chair; Hideki Asai
Yukihiro Ito (President of Shizuoka University)
Taichi Usui (Trustee of Shizuoka University)
Hidenori Mimura (Director of Research Institute of Electronics, Shizuoka University)

10:15 PL1, Plenary Session 1: Plenary Talks
Chair; Hideki Asai
1-1. (Invited) Strain engineering via octahedral distortions in epitaxial perovskite oxide films
Arturas Vailionis (Stanford University, USA)

10:45 PL1, Plenary Session 1: Plenary Talks
Chair; Michiharu Tabe
1-2. (Invited) TeraByte/s Data-bandidth TSV and Interposer Design for 2.5D and 3D IC
Joungho Kim (Department of Electrical Engineering, KAIST, Korea)

12:15 Lunch
14:00  CP1, Collaborative Project Session 1: Collaborative Project Supported by Special Budget for Education and Research
Chair: Hiroya IKEDA
1-5. (Invited) Methodology of single atom control for quantum processing in silicon and diamond
Takahiro Shinada (Tohoku University, Japan)

1-6. (Invited) Application of terahertz imaging in pharmaceutical sciences
Tomoaki Sakamoto (National Institute of Health Sciences, Japan)

15:00  PS1, Poster Session 1: Young Researchers’ Presentations (Poster Viewing)
1. Contribution of Phonon Transport to Seebeck Coefficient of P-Doped SOI Layer
F. Salleh1, T. Oda1, Y. Suzuki1, Y. Kamakura2, and H. Ikeda1 (1RIE, Shizuoka University, 2 Graduate School of Engineering, Osaka University, Japan)

2. Study on the Theoretical Estimation of Phonon-Drag Part of Seebeck coefficient between Ge-on-insulator and Si-on-insulator
V. Manimuthu1, S. Yoshida2, Y. Suzuki2, F. Salleh2, and H. Ikeda2 (1 Graduate School of Science and Technology, 2 RIE, Shizuoka University, Japan)

3. Visualization of entry of cell-penetrating peptide transportan 10 into a single vesicle by translocating across lipid membrane and its induced pores
Md. Zahidul Islam1, H. Ariyama1, J. Md. Alam2, and M. Yamazaki1,2 (1 Graduate School of Science and Technology, 2 RIE, Shizuoka University, Japan)

4. Visualization of initial step of pore formation induced by antimicrobial peptide magainin 2
J. Md. Alam1, Md. Abu Sayem Karal2, T. Takahashi3, V. Levadnay4, and M. Yamazaki1,2,3 (1 RIE, 2 Graduate School of Science and Technology, 3 Faculty of Science, Shizuoka University, Japan, 4 Russian Academy of Sciences, Russia)

5. Psychological states to sound stimuli evaluated by alpha wave
Xi Chen1, Y. Mizutani3, I. Takahashi1, Y. Okita1,2, H. Hirata3, and T. Sugiura1,2,3 (1 Graduate School of Science and Technology, 2 Graduate School of Engineering, 3 RIE, Shizuoka University, Japan)

6. Stress induced effect of Ca-doped Barium Zirconate Titanate thin films by RF magnetron sputtering
T. Arai1, Y. Kama2, N. Sakamoto3, T. Ohno4, T. Matsuda4, N. Wakiya3, and H. Suzuki3 (1 Graduate School of Science and Technology, 2 Graduate School of Engineering, 3 RIE, Shizuoka University, 4 Kitami Institute of Technology, Japan)

7. Low-temperature spectroscopy of donor states in silicon nano-channels
D. Moraru, A. Samanta, T. Tsutaya, Y. Takasu, T. Mizuno, and M. Tabe (Research Institute of Electronics, Shizuoka University, Japan)
8. Single Electron Transport in Double-Donor System at Si/SiO₂ Interface in Ultrathin SOI-FETs

A. Samanta, D. Moraru, T. Mizuno, and M. Tabe
(Research Institute of Electronics, Shizuoka University, Japan)

9. KPFM observation of donors in field effect transistor channel

K. Tyszka¹,², D. Moraru¹, T. Mizuno¹, R. Jablonski², and M. Tabe¹ (¹RIE, Shizuoka University, Japan, ²Warsaw University of Technology, Poland)

10. Development of microparticle manipulation by optically controllable electrophoresis

T. Nagashima¹, W. Inami¹, and Y. Kawata¹,² (¹Graduate School of Engineering, ²RIE, Shizuoka University, Japan)

11. Surface hydrophilicity control of silicon nitride for cell culture

Y. Masuda¹, Y. Nawa², T. Furukawa², S. Lin², W. Inami³, and Y. Kawata²
(¹Graduate School of Science and Technology, ²RIE, ³Graduate School of Engineering, Shizuoka University, Japan)

12. Fabrication of luminescent thin films for electron beam excitation assisted optical microscope

T. Furukawa¹,⁴, S. Kanamori², M. Fukuta², Y. Nawa¹,⁴, H. Kominami¹, Y. Nakanishi¹, A. Sugita³, W. Inami¹,⁴, and Y. Kawata¹,⁴ (¹RIE, ²Faculty of Engineering, ³Department of Materials Science, Shizuoka University, ⁴CREST, Japan Science and Technology Agency, Japan)

13. The evaluation of cathodoluminescence analysis excited in Y₂O₃: Eu³⁺ luminescent thin film

M. Fukuta¹, W. Inami², A. Ono², and Y. Kawata² (¹Graduate School of Science and Technology, ²RIE, Shizuoka University, Japan)

14. High Sensitive Bioimaging using Surface Plasmon Resonance in Deep Ultraviolet Region

M. Kikawada¹, A. Ono²,³,⁴, W. Inami²,³,⁴, and Y. Kawata¹,²,⁴,⁵ (¹Graduate School of Science and Technology, ²RIE, ³Department of Electronics and Materials Science, Shizuoka University, ⁴CREST, Japan Science and Technology Agency, ⁵Department of Mechanical Engineering, Graduate School of Engineering, Shizuoka University, Japan)

15. Label-free organelle imaging with high spatial resolution by D-EXA microscopy

Y. Nawa¹,², W. Inami¹,³, A. Ono¹,³, S. Lin¹, Y. Kawata¹,³, and S. Terakawa³ (¹RIE, Shizuoka University, ²Research Fellow of the Japan Society for the Promotion of Science, ³CREST, Japan Science and Technology Agency, ⁴Faculty of Health Science, Tokoha University, Japan)
16. Analysis of the metallic nanostructure surface plasmon modes by the cathodoluminescence method ......................................................... PS1-16
M. Kawashima¹, A. Ono², W. Inami¹, and Y. Kawata¹ (¹Graduate School of Science and Technology, ²JST-CREST ³RIE, Shizuoka University, Japan)

17. The Characteristics of Nanocrystalline MgFe₂O₄ Spherical Particles Prepared by Ultrasonic Spray Pyrolysis Method for Hyperthermia Applications ............ PS1-17
H. Das¹, N. Sakamoto³, H. Aono⁴, K. Shinozaki⁵, H. Suzuki¹, and N. Wakiya¹ (¹Graduate School of Science and Technology, Shizuoka University, Japan ²Bangladesh Atomic Energy Commission, Bangladesh, ³Research Institute of Electronics, Shizuoka University, ⁴Ehime University, ⁵Tokyo Institute of Technology, Japan)

18. Hydrothermal growth of three dimensional ZnO nanostructures from one dimensional nanorods and functional properties ..................................... PS1-18
M. Navaneethan, J. Archana, T. Koyama, and Y. Hayakawa (Research Institute of Electronics, Shizuoka University, Japan)

J. Archana, M. Navaneethan, T. Koyama, and Y. Hayakawa (Research Institute of Electronics, Shizuoka University, Japan)

20. Energy transferred emission of NaGdF₄:Yb:Yb@NaGdF₄/Cs₂Mo₆Br₁₄ ................................ PS1-20
D. Thangarajau⁴, P. Gredin¹, M. Mortier¹, T. Aubert², C. Neaime², S. Cordier², F. Grasset², R. Karthikeyan³, T. Koyama¹, M. Arivanathan⁴, and Y. Hayakawa⁴ (¹UPMC-Chimie ParisTech, France ²Université de Rennes, France ³GSST, ⁴RIE, Shizuoka University, Japan)

21. Development of high sensitivity photodetector using amorphous selenium and diamond cold cathode ......................................................... PS1-21
T. Masuzawa¹, J. Ochiai², A. Ohata², R. Tsukimura², M. Onishi², T. Ebisudani², I. Saito², T. Yamada³, Y. Neo¹, H. Mimura¹, and K. Okano² (¹RIE, Shizuoka University, ²International Christian University, ³AIST, Japan)

M. Noyori,Y. Neo, and H. Mimura (RIE, Shizuoka University, Japan)

23. Fast Circuit Transient Simulation based on Multi-GPU LIM ........................ PS1-23
Y. Inoue¹, and H. Asai² (¹Graduate School of Engineering, ²Research Institute of Electronics, Shizuoka University, Japan)

17:30 Reception (to 19:30) North Cafeteria, Hamamatsu Campus, Shizuoka University
Wednesday, November 12, 2014

9:00  TP2 : Takayanagi Session, Lectures of Takayanagi Prize Winners
   Chair; Yoshimasa Kawata

2-1. (Invited) Effect of gravity on the dissolution and growth processes of InGaSb ternary alloy bulk semiconductor ................................................................. TP2-1
   Yasuhiro Hayakawa (RIE, Shizuoka University, Japan)

2-2. (Invited) Single-shot measurement of terahertz temporal waveforms using probe pulse with tilted pulse front ................................................................. TP2-2
   Yoichi Kawada (Hamamatsu Photonics K. K., Japan)

2-3. (Invited) Inverter Frequency and Transformer for Low Frequency Power Transmission ................................................................. TP2-3
   Atsushi Nakata (Shizuoka Institute of Science and Technology, Japan)

2-4. (Invited) Single-crystalline organic semiconductor microcavities .................. TP2-4
   Kazuki Bando (Graduate School of Science, Shizuoka University, Japan)

10:30  Coffee Break

10:50  PL2, Plenary Session 2 : Plenary Talks
   Chair; Hisao Suzuki

2-5. (Invited) High reflection coating on a silver nanorod array for enhanced directional scattering ................................................................. PL2-1
   Yi-Jun Jen (National Taipei University of Technology, Taiwan)

11:20  CP2, Collaborative Project Session 2: Collaborative Project Supported by Special Budget for Education and Research
   Chair; Hisao Suzuki

2-6. (Invited) Sensor surfaces ................................................................. CP2-1
   Saulius Juodkazis (Swinburne University of Technology and Melbourne Center for Nanofabrication, Australia)

2-7. (Invited) Phosphorescence and long after glow property of MSi₂O₂N₂:Eu (M=Ca, Sr, Ba) powder ................................................................. CP2-2
   Hidetoshi Miyazaki (Shimane University, Japan)
12:20  Lunch

14:10  NM2, RIE Session: Researches by New Members of Research Institute of Electronics

Chair; Yasuhiro Hayakawa

2-8. Designing CMOS image sensors as a key building block of new camera systems
Keiichiro Kagawa, Taishi Takasawa, Min-Woong Seo, Keita Yasutomi, and Shoji Kawahito (RIE, Shizuoka University, Japan)

2-9. Continuous wave GaP terahertz signal generator for industrial use
Tetsuo Sasaki¹, Tadao Tanabe², and Jun-ichi Nishizawa³ (¹RIE, Shizuoka University, ²Institute of Multidisciplinary Research for Advanced Materials, ³Nishizawa Center, Tohoku University, Japan)

2-10. Functions of Lipid in the Photosynthetic Membranes
Koichiro Awai¹,²,³, Hiroyuki Ohta⁴,⁵,⁶, and Naoki Sato⁶,⁷ (¹Graduate School of Science, ²RIE, Shizuoka University, ³JST, PRESTO, ⁴Center for Biological Resources and Informatics, ⁵Earth-Life Science Institute, Tokyo Institute of Technology, ⁶JST, CREST, ⁷Graduate School of Arts and Sciences, University of Tokyo, Japan)

2-11. Flower/pillar structured InN crystals grown by HCVD method under atmospheric pressure
Naonori Sakamoto¹, Haruka Sugiura², Tomohiro Murase³, Yumiko Kodama⁴, Takanori Kiguchi⁴, Toyohiko Konno⁴, Naoki Wakiya¹, and Hisao Suzuki¹ (¹RIE, ²Graduate School of Science and Technology, ³Graduate School of Engineering, Shizuoka University, ⁴Institute for Materials Research, Tohoku University, Japan)

2-12. Resolution-improved Optical Imaging by Low-coherence Interference Illumination
Shin Usuki, Tomohiro Takada, and Kenjiro Miura (Research Institute of Electronics, Shizuoka University, Japan)

15:50 Closing

Hideki Asai (Symposium Chair)