

International workshop on Advanced Materials and Devices

Workshop Program

August 23

10:00 – 10:10 Opening remark

Session I: Chair Prof. Kazuhiko Hirakawa

10:10 – 10:50 **Carbon nanotube networks for electronics and optoelectronics applications:** Prof. Paolo Lugli (TUM)

10:50 – 11:30 **Coherent terahertz dynamics in low-dimensional plasmas:**
Prof. Junichiro Kono (Rice Univ.)

Session II: Chair Prof. Mitsuaki Yano

11:30 – 11:45 **Some approaches to enhance the response property of liquid crystal displays:** Prof. Shoichi Ishihara (OIT)

11:45 – 12:00 **Intense terahertz emission from InAs thin films:**
Prof. Shigehiko Sasa (OIT)

12:00 – 13:00 Lunch

Session III: Chair Prof. Shigehiko Sasa

13:00 – 14:00 **Keldysh meets Capasso: Green's functions and quantum cascade lasers:** Prof. Peter Vogl (TUM)

14:00 – 14:40 **Physics and applications of metal nanogap/quantum nanostructure junctions:** Prof. Kazuhiko Hirakawa (Tokyo Univ.)

14:40 – 15:20 **Dynamic terahertz emission microscopy of optically excited photo-conductive switches:** Prof. Masayoshi Tonouchi (Osaka Univ.)

15:20 – 15:40 Break

Session IV: Chair Prof. Masayoshi Tonouchi

15:40 – 16:20 **Nonequilibrium carrier transport in emerging CMOS devices:**
Prof. Walter Hansch (UBW)

16:20 – 17:00 **Advanced optical spectroscopy of nanostructures designed for novel applications:** Prof. Jan Misiewicz (WUT)

17:00 – 17:15 **Radiation hardness of ZnO:** Ao. Prof. Kazuto Koike (OIT)

17:15 – 17:30 **High-performance ZnO flexible thin-film transistors:**
Ao. Prof. Toshihiko Maemoto (OIT)

17:40 – 18:20 Poster viewing

Poster Presentation

P-1

Localized surface plasmon resonance sensing properties of photocatalytically prepared Au/TiO₂ and Ag/TiO₂ films

I. Tanahashi

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P-2

Midinfrared luminescence from PbSnTe nanodots fabricated by lattice-type mismatched epitaxy

Y. Nakata, A. Iwamoto, K. Koike, and M. Yano

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P-3

Fabrication and characterization of antimonide-based composite-channel InAs/AlGaSb HFETs using high-k gate insulators

T. Kiso, K. Nishisaka, K. Ogata, T. Maemoto, S. Sasa, and M. Inoue

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P-4

Fabrication and transport properties in InAs-based self switching nano-diodes

T. Kiso, K. Nishisaka, T. Maemoto, S. Sasa, and M. Inoue

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P-5

Growth of ZnO nanorods from aqueous solution by microwave heating and their application to high sensitive glucose detection

K. Ogata, K. Koike, S. Sasa, and M. Yano

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P-6

Radiation hardness of ZnO

T. Aoki, R. Fujimoto, R. Wada, K. Koike, S. Sasa, and M. Yano

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P-7

Radiation hardness of ZnO/ZnMgO HFETs

T. Yabe, T. Aoki, Y. Higashiyama, K. Koike, S. Sasa, and M. Yano

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P-8

Fabrication of high transconductance InZnO transparent thin film transistors by sol-gel method

Y. Fujihara, T. Maemoto, and S. Sasa

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Flexible zinc oxide thin-film transistors using oxide buffer layers on polyethylene naphthalate substrates

T. Higaki, Y. Kimura, T. Maemoto, and S. Sasa

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P-10

Zinc oxide ion-sensitive FETs for biosensor applications

T. Nogami, S. Tanabe, K. Mukai, K. Koike, S. Sasa, and M. Yano

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Charging simulation of a resist film on Si substrate by electron beam irradiation

A. Osada, M. Otani, Y. Ohara, and M. Kotera

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P-12

Measurement of surface potential of a resist film irradiated by electron beam

M. Otani, Y. Ohara, A. Osada, and M. Kotera

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Measurement of fogging electrons in scanning electron microscope

Y. Ohara, M. Otani, A. Osada, and M. Kotera

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Multiscale nonlinear simulation of ferroelectric materials

T. Hata¹, Y. Uetsuji¹, H. Kuramae², K. Tsuchiya³, and M. Kamlah⁴

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Crystal morphology and finite element analyses of piezoelectric materials

S. Kimura¹, Y. Uetsuji¹, H. Kuramae², K. Tsuchiya³, and M. Kamlah⁴

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First-principles study on novel lead-free piezoelectric materials

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