

5th Anniversary

IWP2015

Interdisciplinary Workshop on Science and Patents 2015

University Hall, University of Tsukuba

4th September, 2015

TICMS

*Tsukuba International Conference on
Materials Science (TICMS)*

University of Tsukuba

General Chair

Kenichi Hino, Prof.

Hiromasa Goto

University of Tsukuba, Japan

Rafaël H. L. Kiebooms

Dr., Patent Lawyer, MBA (Master of Business Administration)

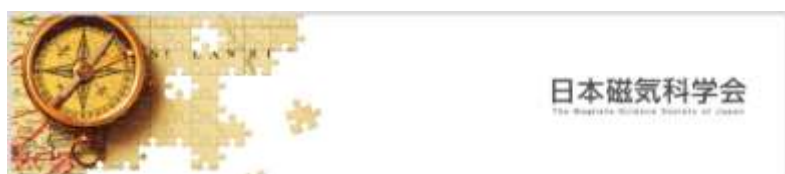
European Patent Office, the Netherlands





The Interdisciplinary Workshop on Science and Patents (IWP) is an international workshop, which has been organised to commemorate the many contributions of Dr. Rafaël H. L. Kiebooms to the University of Tsukuba since his first visit in 1999. Dr. MBA. Kiebooms is an expert in the science of light emitting and conducting organic and polymer materials. He is qualified as a European patent attorney and presently works as a patent examiner at the European Patent Office in the Netherlands. During IWP 2015 interdisciplinary lectures and poster communications will be presented on topics concerning international patents, physics, chemistry, biology, medical, and technologies for industry.

Co-hosts



The Magneto-Science Society of Japan



Tsukuba Research Center for
Interdisciplinary Materials Science



The Chemical Society of Japan



IWP2015

Interdisciplinary Workshop on Science and Patents

- 9 : 00 Registration
- 9 : 30-9:35 Opening address
Rafaël H. L. Kiebooms (European Patent Office, EPO)
- 9:35-9:55 **1 min oral presentations (20 papers), IWP01~IWP20**
- Chairman: R. Kiebooms*
- 9:55-10:20 **Takeshi Mori** (Industrial Technical Center of Wakayama Prefecture)
Functional Materials from Rice Bran Based Ferulic Acid
- 10:20-10:45 **Md Aftabuzzaman** (U. Tsukuba)
Effect of Electric Field on Phase Transition Temperature
 $0.7\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ - 0.3PbTiO_3 Single Crystal in a
- 10:45-11:10 **Jin Wang** (U. Tsukuba)
A micro Irox Potentiometric Sensor for Direct Determination of Organophosphate Pesticides
- 11:10-11:35 **1 min oral presentations (20 papers), IWP21~IWP40**
- Chairman: H. Goto*
- 11:35-12:00 **Chiharu Watanabe** (U. Tsukuba)
THz Waves Emitted from the Josephson Junctions
- PM**
- 13:00-13:35 **1 min oral presentations (30 papers), IWP41~IWP70**
- 13:35-14:35 **Rafaël H. L. Kiebooms** (European Patent Office, EPO)
Protecting Your Intellectual Property by Means of Patents
- 14:35-15:00 **1 min oral presentations (24 papers), IWP71~IWP94**
- 15:00-17:00 Poster session
- 17:20-17:40 Closing ceremony
Comment on IWP2015 and Awarding
Rafaël H. L. Kiebooms

Address and Closing Declaration
Kenichi Hino (President of TICMS)

TICMS
University of Tsukuba



IWP2015
Interdisciplinary Workshop on Science and Patents 2015

日本磁気科学会

European Patent Office
Dr. MBA, Patent lawyer
Rafael Kiebooms

1-min Oral Presentations

9:35-9:55, IWP01~IWP20

IWP01 New D- π -A Type Polymer

ZhongMin Geng, Gou Satou, Kazuhiro Marumoto, Masashi Kijima

Synthesis and characterization of polymers having phosphine oxide unit for blue light emitting devices

Grad. School of Pure & Appl. Sci., Univ. Tsukuba

IWP02 Conjugation of Electrochemistry and Solid State Physics

R. L. Magnússon, W. Kobayashi, Y. Moritomo

Li⁺ intercalation into layered chalcogenides

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP03 Ferroelectric Materials

INVITED

Invited Oral Communication

Md Aftabuzzaman, Seiji Kojima

Effect of electric field on phase transition temperature in a 0.7Pb(Mg_{1/3}Nb_{2/3})O₃-0.3PbTiO₃ single crystal

Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba

IWP04 Microbiology

Hiroki Watanabe^u, Tomohiro Inaba, Masanori Toyofuku, Yasuyuki Miyano, Nobuhiko Nomura

Visualization of microbiologically influenced corrosion by using continuous optimizing confocal reflection microscopy

College of Agrobiological Resource Sciences University of Tsukuba

IWP05 Material Science

T. Yuasa^U, T. Kashiwagi, T. Kitamura, C. Watanabe, Y. Saiwai, Y. Shibano, H. Kubo, K. Sakamoto, T. Katsuragawa, T. Tanaka, Y. Komori, T. Yamamoto, H. Minami, K. Kadowaki

Development of high power THz emitter based on Bi2212

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP06 Inorganic-Organic Hybrid

Tomonori Ito, Hitoshi Hayashi, Hiromasa Goto

Preparation of Prussian Blue for Inorganic-Organic Hybrid Material

Graduate School of Pure and Applied Sciences, Institute of Material Science, University of Tsukuba

IWP07 Algae Biomass Utilization

Roan Ito^u, Masashi Kijima

Research plan for utilization of biomass products and residue from microalgae
College of Engineering Sciences, U. Tsukuba

IWP08 Microbiology

Sachi Inoue^u, Tomohiro Inaba, Nozomu Obana, Yutaka Yawata, Hidenobu Senpuku, Nobuhiko Nomura

Sucrose induces extracellular DNA release in *Streptococcus mutans*
College of Agrobiological Resource Sciences, University of Tsukuba

IWP09 Nanostructured Carbon Materials

Yuki Okuda^u, Masashi Kijima

Carbonization of surface-modified γ -cyclodextrin microcubes
College of Engineering Sciences, Univ. Tsukuba

IWP10 Material Science

T. Tanaka^u, Y. Saiwai, T. Kitamura, C. Watanabe, Y. Shibano, H. Kubo, K. Sakamoto, T. Katsuragawa, T. Yamamoto, T. Kashiwagi, H. Minami, K. Kadowaki

An Imaging Application of THz Waves
University of Tsukuba

IWP11 Carbon Materials

Aohan Wang, Hiromasa Goto

Synthesis and Properties of a Liquid Crystalline π -Conjugated Polymer
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP12 Light-Emitting Polymer

Shinnosuke Okabe, Kosuke Shibasaki, Masashi Kijima

Synthesis and characterization of N-substituted poly(2,7-carbazole)s as efficient blue fluorescent materials for organic light-emitting diode
Grad. Sch. Pure & Appl. Sci., Univ. Tsukuba

IWP13 Organic-Inorganic Solar Cells

Yuji Okamoto, Yoshikazu Suzuki

Perovskite solar cells using SrTiO₃ for the electron transport layer
Division of Materials Science, Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP14 The Production of Metallic Atomic Contacts

Koichi Onda, Tokushi Kizuka

Critical Shear Stress of Copper Nanocontacts

Division of Materials Science, Univ. of Tsukuba

IWP15 Fiber Material

Yuki Kaitsuka, Hiromasa Goto

Synthesis and Characterization of Polyaniline Composite using Shell Membrane

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP16 Polymer Composite

Ryousuke Kikuchi^u, Hiromasa Goto

Physical properties of polyaniline/lignin blends

College of Engineering Sciences, University of Tsukuba

IWP17 Conjugated Polymer Photonics

Soh Kushida, Yohei Yamamoto

WGM photoemission from Conjugated Polymer Sphere

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP18 Bio-Template Polymer

Hiromasa Goto

Polyaniline-Butterfly Scale Composite

Division of Materials Science, Faculty of Pure and Applied Science, University of Tsukuba

IWP19 Asymmetric Polymer

Hiromasa Goto

Synthesis of Polycarbazole in Chiral Liquid Crystal Polypyrrole/hydroxypropyl cellulose

Division of Materials Science, Faculty of Pure and Applied Science, University of Tsukuba

IWP20 Sociomicrobiology

Yuka Ehashi^u, Itsuko Kawashima, Nozomu Obana, Hiromi Kubota, Tatsunori Kiyokawa,

Seizo Yashiro, Kensuke Kakihara, Nika Koyama, Nobuhiko Nomura

Colony morphology and biofilm formation by lactic acid bacterium *Lactobacillus plantarum*

College of agrobiological Resource Sciences, University of Tsukuba

11:10-11:35, IWP21~IWP40

IWP21 Conductive Polymer

Naoto Eguchi, Hiromasa Goto

Synthesis of Conductive Polymer by Electrical Polymerization in Discotic Liquid Crystal
Division of Materials Science, Faculty of Pure and Applied Science, University of Tsukuba

IWP22 Perovskite Solar Cells

Kenta Takahashi, Yoshikazu Suzuki

An inorganic hole conductor for inorganic-organic perovskite solar cells
Graduate school of Pure and Applied Sciences, University of Tsukuba

IWP23 Strongly Correlated Electron System and Secondary Battery

Masamitsu Takachi, Yuya Fukuzumi, Yutaka Moritomo

Diffusion constant of Li^+/Na^+ in Prussian Blue Analogues (PBAs)
Graduate School of Pure and Applied Sciences, Moritomo lab, University of Tsukuba

IWP24 Surface Structure of Model Catalyst

Junpei Konno, Takahiro Kondo, Junji Nakamura

STM studies of $\text{TiO}_2/\text{Au}(111)$ model catalyst
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP25 Vibrational Spectroscopy

Toru Sasaki^u, Yusuke Hashimoto, Tatsuya Mori, Seiji Kojima

Terahertz Dynamics of Ancient Glass
School of Engineering Sciences, University of Tsukuba

IWP26 Nonlinear Spectroscopy

Yoshiharu Yamada^u, Hideaki Kano

TiO_2 -surface sensitive spectroscopy using a hyper-Raman process
College of engineering Science, University of Tsukuba

IWP27 The Production of Metallic Atomic Contacts

Kohei Yamada, Tokushi Kizuka

Structure and Electrical Properties of Zirconium Atomic Contacts
Division of Materials Science, Univ. of Tsukuba

IWP28 N-Enriched Carbon Materials

Kazuya Yamada, Masashi Kijima

Carbonization and nano-structure evaluation of melamine-phthalaldehyde condensation polymers
Graduate School of Pure and Applied Sciences, University of Tsukuba



IWP29 Polymer Chemistry

Kouhei Yamabe¹, Hiromasa Goto
Synthesis of polyaniline with lecithin
University of Tsukuba

IWP30 Semiconducting Polymer

Kosuke Shibasaki, Masashi Kijima
Investigation of electron accepting capability of carboxylate-substituted benzodithiophene to construct D-A type narrow band gap copolymers
Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP31 Photosynthesis

Hirohisa Komatsu, Masami Kobayashi
Unique photosystems of prochlorococcus marinus NIES-2086
Division of Materials Science, Faculty of Pure and Applied Science, University of Tsukuba

IWP32 Surface Chemistry and Catalyst Development

Akinori Okonogi, Takahiro Kondo, Junji Nakamura
Preparation of new type of electrochemical catalysts for methanol synthesis
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP33 Coordination Chemistry

T. Matsunaga, K. Nakagawa, Y. Miyamoto, S. Ohkoshi, H. Tokoro
Temperature dependence of crystal structure of Prussian blue analog, manganese hexacyanochromate
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP34 Electrochemistry of Catalyst

Keiichiro Matsumoto, Takahiro Kondo, Junji Nakamura
Electro-catalytic performance of Pt/graphene for PEFC
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP35 Material Science

S. Matsuo, Y. Suzuki, F. Kimizuka, T. Enomoto, Y. Mizuno, K. Terao, K. Ohara, S. Osuga, T. Kashiwagi, K. Kadowaki
Growth of the single crystal of $\text{BiSb}_{1.1}\text{Te}_{1.1}\text{Se}_2$
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP36 Organic Photochemistry

Hisato Matsumoto, Yoshinobu Nishimura, Tatsuo Arai
Excimer Emission and Photodimerization of Dianthrylurea
Doctoral Program in Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP37 Liquid Crystal and Polymer Technology

Tomoaki Jo, Hiromasa Goto

Synthesis of Blending Polymer in Liquid Crystal

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP38 Bio Based Materials

INVITED *Invited Oral Communication*

Takeshi Mori

Functional Materials from Rice Bran Based Ferulic Acid

Industrial Technology Center of Wakayama Prefecture

IWP39 Microbiology

Kana Morinaga, Masanori Toyofuku, Nobuhiko Nomura

Monitoring of cell to cell communication in polymicrobial community

Faculty of life and Environmental Sciences, University of Tsukuba

IWP40 Elementary Particle Physics

Koya Moriuchi

Development of Superconducting Tunnel Junction photon detector using Niobium and Aluminum (Nb/Al-STJ).

Doctoral and Master's Programs in Physics, Graduate School of Pure and Applied Sciences, University of Tsukuba

13:00-13:35 IWP41~IWP70

IWP41 Photosynthesis

Daisuke Fukayama, Masami Kobayashi

Redox potential of chlorophyll a by optical waveguide spectroscopy

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP42 Polymer Chemistry

Zhiyong Qin, Hiromasa Goto

Synthesis and Properties of Functional Novel Paramagnetic Polymers having 2,6-Di-tert-butylphenoxy Radicals in Side Chains

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP43 Functional Peptides

Tsukasa Mizutaru, Taro Sakuraba, Toru Nakayama, Yohei Yamamoto

Cysteine-containing peptide as redispersants for agglomerated metal nanoparticles

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP44 Biotechnology

Kazunori Sugihara, Seiya Tsujimura

Stabilization of glucose dehydrogenase utilizing ionic characteristics of electrolytes

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP45 Dye-Sensitized Solar Cells

Natsumi Ishii, Yoshikazu Suzuki

Preparation and evaluation of dye-sensitized solar cells by using

stannate-based double-oxide electrode

Graduate school of Pure and Applied Sciences, University of Tsukuba

IWP46 Conjugation of Electrochemistry and Solid State Physics

S. Akama, W. Kobayashi, T. Shibata, M. Takachi, Y. Moritomo

XAFS analysis of layered oxides as sodium ion secondary battery cathode material

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP47 Elementary Particle Physics

Ren Senzaki

R&D of status of FD-SOI-MOSFET Cold Amplifier

Division of Physics, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP48 Piezoelectric Ceramics

Tasuku Kawashima, Yoshikazu Suzuki

Preparation and evaluation of $(\text{Bi}_{0.5}\text{Na}_{0.5})\text{TiO}_3$ by reactive sintering

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP49 Conjugated Polymer

Kaito Suzuki, Masashi Kijima

Synthesis of soluble poly(P-phenylphosphafluorene) derivatives and their luminescence properties

Graduated School of Pure and Applied Sciences, University of Tsukuba

IWP50 Optical Properties of Semiconductors

Kenta Kusaka, Kiyoto Matsuishi

Fabrication and Optical Properties of Zinc-Chalcogenide Nanosheet Superlattices

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP51 The Production of Metallic Atomic Contacts

Satoshi Murata, Tokushi Kizuka

Structure and Electrical Properties of Tantalum Nanocontacts during the Passage of Pulsed Electric Currents

Division of Materials Science, Univ. of Tsukuba

IWP52 Bio-artificial Organ and Tissue Engineering

Tatsuya Osaki, Hiroaki Suzuki, Junji Fukuda

Engineering of bio-artificial liver with iPS-derived hepatic cells

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP53 Material Science

S. Osuga^u, Y. Suzuki, F. Kimizuka, T. Enomoto, Y. Mizuno, K. Terao, K. Ohara, S. Matsuo, T. Kashiwagi, K. Kadowaki

Electrical transport properties of topological insulator Bi₂Te₂Se

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP54 Coordination Chemistry

T. Ohno, K. Imoto, S. Ohkoshi

Syntheses of octacyano-based molecular magnets, [M^{II}(4-bromopyridine)₄]₂[Nb^{IV}(CN)₈]·zH₂O (M = Mn, Ni, Zn)

Department of Chemistry, School of Science, the University of Tokyo

IWP55 Surface Treatment, Coating, Lacquer

Makoto Ikenaga, Hiroshi Oyabu, Nobuyuki Ando, Yoichi Tachibana

Modification of the lacquer (Urushi) using triple roll mill

Kyoto Municipal Institute of Industrial Technology and Culture

IWP56 Learning and Short-Term Memory

Meri Nakamura^u, Maina Ishida, Takaomi Sakai

Influence to Learning Effect which is given by Difference of Smell Condition

Division of Biological Science, School of Science and Engineering, Faculty of Urban Liberal Arts, Tokyo Metropolitan University

IWP57 Polymer Chemistry

Sae Nakajima^u, Soh Kushida, Yohei Yamamoto

Self-assembly of CarbazoleDendrimers and Whispering Gallery Mode Photoemission

College of Engineering Science, University of Tsukuba

IWP58 Spectroscopy of Inorganic Materials

Koki Nakano^u, Shota Koda, Yusuke Hashimoto, Tatsuya Mori, Seiji Kojima

Terahertz Time-domain Spectroscopy of Volcano Glass

School of Engineering Science, University of Tsukuba

IWP59 Optical Active Conjugated Polymer

Haoyue Shen, Hiromasa Goto

Chiral Side Chain Modified Poly(phenylene-alt-fluorene)

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP60 Biosensors and Bioelectrochemistry

Nozomu Tsuruoka, Kazuki Murata, and Seiya Tsujimura

Glucose Biosensor based on a Glassy Carbon Electrode Modified with Poly(methylene green) and FAD-dependent Glucose Dehydrogenase

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

14:35-15:00, IWP71~IWP94

IWP61 Carbonization of Woody Materials

Hidenori Amano, Masashi Kijima

Effects of aromatic additives on carbonization of hydroxyethyl cellulose

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP62 Microbiology and Immunology

Kyoko Nagayama, Nozomu Obana, Ryoma Nakao, Hidenobu Senpuku, Kouji Nakamura, Nobuhiko Nomura

Functional analysis of membrane vesicles produced by gram-positive intestinal bacteria

Grad. Sch. Life Environ. Sci., Univ. Tsukuba

IWP63 Porous Polymer and Porous Carbon

Takafumi Watanabe, Masashi Kijima

Synthesis of rigid conjugated polymers having binaphthyl unit for constructing porous materials

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP64 Electrochemical Synthesis of Conjugated Polymers

Jiuchao Dong, Kohsuke Kawabata, Aohan Wang, Hiromasa Goto

Electrochemical polymerization in liquid crystal and correlation between macromolecular orientation and molecular structure

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP65 Bacterial Communication Through Signaling Compounds (Languages)

Hiroko Shimamura, Masanori Toyofuku, Tomohiro Morohoshi, Tsukasa Ikeda, and Nobuhiko Nomura

How do bacteria recognize different signaling compounds and its concentrations?

Faculty of life and Environmental Sciences, University of Tsukuba

IWP66 Liquid Crystalline Conjugated Polymer

Wenli Peng^u, Masashi Kijima

Synthesis and characterization of liquid crystalline polycarbazole

College of Engineering Sciences, Univ. Tsukuba

IWP67 Photosynthesis

Yuhta Sorimachi, Masataka Nakazato, Masami Kobayashi

IsChl e 15¹-OH-lactone Chl a ?

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP68 Agrobiology and Genetics

Hitomi Takei^u, Hiroshi Ezura, Tohru Ariizumi

Genetic mapping of a novel tomato mutation that induces fruit set without pollination

College of Agro-biological Resource Sciences, University of Tsukuba, Japan

IWP69 Elementary Particle Physics

Kenichi Takemasa

Development of Superconducting Tunnel Junction photon detector using Hafnium(Hf-STJ)

Division of Physics, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP70 Energy and Environmental Materials

Y. Fukuzumi, W. Kobayashi, Y. Moritomo

Na⁺/Li⁺ diffusion in Na₂Ti_nO_{2n+1} (n=3, 6)

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP71 Nano Structure of Organic Photovoltaic Films

K. Yonezawa, Y. Moritomo

Molecular Mixing in Donor and Acceptor Domains as Investigated by Scanning Transmission X-ray Microscopy (STXM)

Graduate School of Science and Engineering, University of Tsukuba

IWP72 Spectroscopy of Organic Material

Mikitoshi Kabeya^u, Shota Koda, Yusuke Hashimoto, Tatsuya Mori, Seiji Kojima

Boson peak dynamics of glassy glucose

School of Engineering Sciences, University of Tsukuba

IWP73 Advanced Inorganic Materials

Ryosuke Maki, Yoshikazu Suzuki

Synthesis and microstructural characterizations for murataite ceramics with fluorite superstructure

Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP74 Photosynthesis

Kanako Kimura

Pheophytinization of chlorophylls

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP75 Semiconducting Polymer Films

Hiroki Hayashi, Hitoshi Hayashi, Hiromasa Goto

Polymer Orientation Controlled by Liquid Crystalline Templates: Enhanced Electrical Conductivity

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP76 Bioelectrochemistry

Aimi Suzuki, Seiya Tsujimura

Characterization of Glucose Oxidase-Redox Hydrogel on MgO-templated Carbon Electrode

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP77 Bioelectrochemistry

Hiroto Funabashi, Seiya Tsujimura

Pore-size dependence of the direct electron transfer-type enzyme reaction in the meso-macro pores

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP78 Photosynthesis

Katsuhiko Wada, and Masami Kobayashi

Physico-chemical characterization of Chl f

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP79 Nano Science

Akihisa Saito, Ryuusuke Kimura, Hiroyuki Watanabe, Shintaro Nomura

Photoconductivity measurements of back gated MoS₂ Photodetectors

Division of Physics, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP80 Medical Microsystems

Koji Tanabe^U, Masatoshi Yokokawa, Hiroaki Suzuki

Electrochemical microdevice for stress monitoring

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP81 Ferroelectric Polymer Colliods

Daichi Okada, Yohei Yamamoto

Whispering gallery mode photoemission from self-assembled ferroelectric polymer microspheres

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

IWP82 Spectroscopy of Pharmaceutical Materials

Yuta Nomura^{1, U}, Shota Koda², Tatsuya Mori², and Seiji Kojima²

Terahertz Dynamics of RS- and S-ketoprofen

¹College of Engineering Science, University of Tsukuba, ²Graduate School of Pure and Applied Sciences, University of Tsukuba

IWP83 Photosynthesis

Terumitsu Kanjoh¹, Yuhta Sorimachi¹, Hirohisa Komatsu¹, Mikihide Demura², Masaki Yoshida², Makoto Watanabe², Masataka Nakazato³, Masami Kobayashi¹

Solubility of chlorophylls in squalene and squalane

¹Div. Materials Sci., Fac. Pure Appl. Sci., Univ. Tsukuba. ²Fac. Life Environ. Sci., Univ. Tsukuba. ³Chl. Res. Inst.

IWP84 Electrochemistry

INVITED *Invited Oral Communication*

Jin Wang, Hiroaki Suzuki and Takaaki Satake

A micro IrOx potentiometric sensor for direct determination of organophosphate pesticides
Graduate School of Life and Environmental Sciences, University of Tsukuba

IWP85 Superconductivity, Josephson effect

INVITED *Invited Oral Communication*

C. Watanabe, H. Minami, T. Kitamura, Y. Saiwai, Y. Shibano, H. Kubo, K. Sakamoto, T. Katsuragawa, T. Tanaka, T. Yuasa, Y. Komori, T. Kashiwagi, R. A. Klemma, K. Kadowaki
THz waves emitted from the Josephson junctions

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba.

^aUniv. of Central Florida

IWP86 Optical Properties of Semiconductors

Yohei Watanabe, * Ken-ichi Hino, Muneaki Hase, Nobuya Maeshima

Analysis of Transient and Nonlinear Fano Resonance for Coherent Phonon Generation

*Grad. School of PAS, Univ. Tsukuba

IWP87 Electrochemical Microsensors

Isa Anshori, Masatoshi Yokokawa and Hiroaki Suzuki

Highly sensitive electrochemical immunoassay by coulometry coupled with silver metallization

Department of Nanoscience and Nanotechnology, Graduate School of Pure and Applied Sciences, University of Tsukuba.

IWP88 Functionalization of Micro/Nano-Scaled Particles

Yoshitaka Yoshizumi, Masatoshi Yokokawa, Hiroaki Suzuki

Self-stretchable micromotors powered by electrochemical reactions

Division of Nanoscience and Nanotechnology, Faculty of Pure and Applied Sciences, University of Tsukuba.

IWP89 Microfluidic Devices

Hiroataka Obata, Masatoshi Yokokawa, Hiroaki Suzuki

Electrochemical bidirectional micropump

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba.

IWP90 **Electrochemical Microsensors**

Shinnosuke Tsuchiya, Masatoshi Yokokawa, Hiroaki Suzuki

Highly sensitive and selective coulometric detection utilizing metal deposition

Division of Materials Science, Graduate School of Pure and Applied Sciences University of Tsukuba

IWP91 **Medical Microsystems**

Ryo Usuba, Nobuhiro Ohkohchi, Hiroaki Suzuki

Micro-optofluidic immunoanalysis for rapid cytokine detection

Institute of Materials Science, Graduate School of Pure and Applied Sciences, University of Tsukuba.

IWP92 **Nanoplasmonics**

Shunsuke Suzuki, Hiroaki Suzuki, Masatoshi Yokokawa

Gold nanoantenna for highly sensitive fluorescence sensing

Institute of Materials Science, Graduate school of Pure and Applied Sciences, University of Tsukuba.

IWP93 **Microfluidic Devices**

Takahiro Watanabe, Hiroaki Suzuki

Autonomous Control of Microfluidic Transport

Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba.

IWP94 **Microfluidic Devices**

Gokul Chandra Biswas, Takahiro. Watanabe, Edwin. T. Carlen, Masatoshi Yokokawa and Hiroaki Suzuki

Control of Microfluidic Transport by Platinum-Sam Hydrophobic Valves

Dept. of Nanoscience and Nanotechnology, Graduate school of Pure and Applied Sciences, University of Tsukuba.

IWP95 **Photonic Insect**

Hiromasa Goto

Division of Materials Science, Faculty of Pure and Applied Science, University of Tsukuba

Surface Structure of a Ground Beetle

IWP96 **International Patent**

Rafaël H.L. Kiebooms

Protecting your Intellectual Property by Means of Patents

European Patent Office, The Netherlands

IWP97 **International Patent**

Rafaël H.L. Kiebooms

The procedure to obtain the grant of a European patent

European Patent Office, The Netherlands



IWP98 International Patent

Rafaël H.L. Kiebooms

The Seven Deadly Sins of the Inventor
European Patent Office, The Netherlands



Master of Ceremony: A. Wang
Lightning engineer: T. Jyo
Music: Dr. Goto

U = undergraduate



IWP2015 has been organized in *Tsukuba International Conference on Materials Science (TICMS)*, University of Tsukuba

TICMS ORGANISATION

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Proceedings

-Call for papers-

Accepted papers will be included in conference proceedings to be published in “International Letters of Chemistry, Physics, and Astronomy” (ILCPA, Swiss) by SciPress Ltd. <http://www.scipress.com/ILCPA.55> (Swiss) after peer review. Manuscript should be sent to H. Goto (gotoh@ims.tsukuba.ac.jp) by September 30, 2015.

IWP proceedings committee

Masashi Kijima (Editor-in-chief)

Rafael H. L. Kiebooms

Hiromasa Goto



5th Anniversary

IWP2015

IWP2014
IWP2013
IWP2012
IWP2011



日本磁気科学会
The Magnetic Society of Japan

IWP