

The 1st ICAI 2015

International Conference on Advanced Imaging

June 17-19, 2015

National Center of Science Tokyo, Japan
(Hitotsubashi Memorial Hall)

Preliminary Programs



Host Societies

The Imaging Society of Japan (ISJ)

The Institute of Image Electronics Engineers of Japan (IIEEJ)

The Japanese Society of Printing Science and Technology (JSPST)

The Institute of Image Information and Television Engineers (ITE)

The Society of Photography and Imaging of Japan (SPIJ)



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Registration Desk

The registration desk will be open in the entrance lobby, from 9:00 to 17:00 during conference dates (June 17–19).

Reception

The conference reception will be held at the venue in the evening of June 18 (Thu.), from 18:00 to 19:30.

Incubation Sessions

This is a place for meetings of the minds both from industry and academia in the fields of imaging technologies. We provide opportunities for collaboration with potential industrial partners by presenting research projects at member universities of the international conference.

Presentation: June 19 (Fri.), 12:40–13:40 at Hitotsubashi Hall (2F)

Exhibition: June 19 (Fri.), 12:40–16:00 at Special Conference Room (1F)

Products Exhibition

Exhibition of printing and imaging related products will be open from 12:00 to 16:00 on June 17, and from 9:00 to 16:00 on June 18 & 19.

Invitation to the 1st International Conference on Advanced Imaging

We are pleased to announce that “The 1st International Conference on Advanced Imaging” will be held from June 17th to June 19th, 2015. Now the imaging technology sees a more complicated technological landscape than before: the combination of digitization and network expansion makes technology fusion a necessity. Accordingly, we need to think about how the images should be in a variety of scenes. What are the best image displaying devices in a particular scene? How do we want to share information by using images? How do we recognize images?

The imaging technology is to explore the new horizons. Its use will not be limited to conventional business scenes. The imaging technology can now provide tools to inform you in countless situations. While you are in the traffic, what image information do you get? You can also choose different information devices whether you get information personally or share it in a group of people. You can see different modes of price tags or signs in a supermarket. You can display images in different modes in your living room. The imaging technology has huge potentials, e.g., highlighting the affected part in the Region of Interest in medical imaging, and using the technology for security purposes. By studying these possible scenes, we can further improve the technology to reach a new level of sophistication, when you may be able to choose the optimal image information efficiently wherever you will be.

This international conference will provide you with opportunities to discuss topics exemplified below: - optimal image generation modes - where we are heading to increase sophistication of this technology - subjects and solutions in the next-generation material technology for image generation.

Your active participation in this conference is more than welcome. We hope that fruitful discussions in this conference will lead to the incubation of new imaging technologies for the future.

Junichi HANNA, *General Chair*

Takao ABE, *Program Chair*

Program Topics

T1. Digital Processing

Image Processing,
Medical & Bio Imaging,
3D Imaging,
Cross Media Technology

Track Management:
The Institute of Image
Information and Television Engineers

T2. International Standardization and its Strategy

Standardization for Creation, Coding,
Presentation, Recognition,
Interchange, Interface, Color,
and Accessibility technologies,
Standardization of Human
Resources Development

Track Management: The Institute of
Image Electronics Engineers of Japan

T3. Capturing & Utilization of Image

Photography in Life and Culture,
Image Acquisition,
Sensing of Radiation and
Emission,
Acquisition and Modeling of
Material Appearance,
Restoration and Archiving of
Images

Track Management: The Society of
Photography and Imaging of Japan

T4. Imaging Materials & Devices

New Materials for Novel Imaging Technology,
New Applications of Printing by
Material technology,
EX: Electronic Paper, Liquid Crystal Display,
Ink Jet Printing, Electrophotography, Thermal
Printing

Track Management: The Imaging Society of Japan

T5. Printing & Fabrication

Traditional/Innovative Printing,
Digital Fabrication,
Pre/Post Press, Color Management,
Digital Workflow, Security/ Archive

Track Management:
The Japanese Society of Printing Science and Technology

Presentation Time

Presentation time allotted for each type of paper is as follows:

Keynote Talks:	50 minutes (including 5-minute Q&A time)
Invited Papers:	30 minutes (including 5-minute Q&A time)
Regular Papers (Oral):	20 minutes (including 5-minute Q&A time)
Regular Papers (Interactive):	2 min. oral presentation (without Q&A) and 110 min. poster exhibition.

Registration

Registration fees

	Early Bird Registration (Until June 6, 2015)	On-site Registration
Member*	22,000 JPY	25,000 JPY
Non Member	28,000 JPY	33,000 JPY
Student (ID required)	3,000 JPY	4,000 JPY

* A member of one of the following Societies:

The Imaging Society of Japan	ISJ
The Society of Photography and Imaging of Japan	SPIJ
The Japanese Society of Printing Science and Technology	JSPST
The Institute of Image Electronics Engineers of Japan	IIEEJ
The Institute of Image Information and Television Engineers	ITE
The Society for Imaging Science and Technology	IS&T
Japan Society of Colour Material	JSCM
The Institute of Electrical Engineers of Japan	IEEJ
The Institute of Electronics, Information and communication Engineers	IEICE
The Illumination Engineering Institute of Japan	IEIJ
Information Processing Society of Japan	IPSJ
The Institute of Electrical and Electronics Engineers	IEEE
The Society for Art and Service	SAS
The Chinese Society for Imaging Science and Technology	CSIST

Conference registration fee includes:

- Admission to all technical sessions
- Proceedings (hardcopy and USB memory)
- Entrance to the exhibition
- Coffee breaks

Separate registration fee is required for conference reception.

Online registration

Please visit the conference web site:

<http://www.isj-imaging.org/event/ICA12015/>

* Registration fee for residents in Japan will be payable only by CASH at on-site registration desk.

Visa letter requests

Invitation letters will be sent by email and will be issued only after payment of registration fees.

Wednesday, June 17, 2015

June 17

	Hitotsubashi Hall (2F)	Mid-size Conference Room I (2F)	Mid-size Conference Room II (2F)	Mid-size Conference Room III (2F)	Conference Room (2F)
9:00	Opening Remarks				
9:20-10:10	[T1K] Keynote Talk 1: Prof. Tsuhan Chen				
10:20-11:10	[T2K] Keynote Talk 2: Dr. Tineke M. Egedi				
11:10-12:00	[T3K] Keynote Talk 3: Prof. James A. Forwerda				
12:00					
13:00-14:00	[T301] Restoration and Archiving of Images (1) 13:00-15:00	[T401] New Materials for Novel Imaging Technology (1) 13:00-14:20	[T501] Printing Technologies (1) 13:00-14:10	[T101] Advanced Image Processing 13:00-14:50	[T201] Standardization in Global Perspective 13:00-14:50
14:00-15:00	[T302] Restoration and Archiving of Images (2) 15:10-17:00	[T402] New Materials for Novel Imaging Technology (2) 14:40-15:50	[T502] Printing Technologies (2) 15:00-16:50	[T404] Display and Electronic Paper 15:40-16:30	[T202] Panel session: "Challenges in Standardization for Advanced Imaging" 15:10-17:00
15:00-16:00		[T403] New Materials for Novel Imaging Technology (3) 16:00-17:00			
16:00-17:00					
17:00-18:00		[T4G] ISJ General Meeting 17:20-19:00	[T3G] SPIJ General Meeting 17:20-19:00		
18:00					

[OP] Opening Remarks

June 17 (Wed.), 9:15-9:20, Hitotsubashi Hall (2F)

- Jun-ichi Hanna (*General Chair: Tokyo Institute of Technology*)

[T1K] Keynote Talk 1

June 17 (Wed.), 9:20-10:10, Hitotsubashi Hall (2F)

Session chair: Satoshi Ueno (*KDDI R&D Laboratories Inc.*)

- **From Image Processing to Scene Understanding: Learning and Sharing Context for Holistic Image Analysis**

Tsuan Chen¹, Congcong Li²

¹Cornell University, ²Google Inc. (USA)

[T2K] Keynote Talk 2

June 17 (Wed.), 10:20-11:10, Hitotsubashi Hall (2F)

Session chair: Toshiaki Kurokawa (*Design Thinking Research & Education*)

- **Standardizing Emergent Innovations in Converging Areas of Technology**

Tineke M. Egyedi

The Delft Institute for Research on Standardization (Netherlands)

[T3K] Keynote Talk 3

June 17 (Wed.), 11:10-12:00, Hitotsubashi Hall (2F)

Session chair: Shoji Tominaga (*Chiba University*)

- **Image Quality and Material Appearance**

James A. Ferwerda

Rochester Institute of Technology (USA)

[T301] Restoration and Archiving of Images (1)

June 17 (Wed.), 13:00-15:00, Hitotsubashi Hall (2F)

Session chairs: Katsuhisa Ohzeki (*Nagoya University*), Shunji Takada (*Chiba University*)

- **Archiving Digital Image Data and Motion Picture: Concepts and Solutions** (*Invited*)

Peter Fomaro

University of Basel (Switzerland)

- **Digitization of 25,000 Films a Year. A Challenge of Filmarchiv Austria** (*Invited*)

Fumiko Tsuneishi

Filmarchiv Austria (Austria)

- **A Study of Magnetic Tape Media for High Density Recording**

Takeshi Harasawa, Masahito Oyanagi, Osamu Shimizu

FUJIFILM Corporation (Japan)

- **Long-term Stabilities of Magnetic Tapes for Data Storage**

Kazutoshi Katayama¹, Yuka Chinda², Osamu Shimizu¹, Yasutomo Goto², Mayumi Suzuki², Hitoshi Noguchi¹

¹FUJIFILM Corporation, ²FUJIFILM Corporation Analysis Technology Center (Japan)

- **Digital Silica Photography with Fire Resistance and Semi-permanent Lifetime**

Takao Watanabe, Ryo Imai, Shigeki Mori, Toshiyuki Mine, Toshimichi Shintani, Koichi Watanabe

Hitachi, Ltd. (Japan)

[T302] Restoration and Archiving of Images (2)

June 17 (Wed.), 15:10-17:00, Hitotsubashi Hall (2F)

Session chairs: Akihito Seto (*IMAGICA Corporation*), Akira Tochigi (*The National Museum of Modern Art, Tokyo*)

- **A Delayed Love Letter to Moving Image** (*Invited*)

Hisashi Okajima

The National Museum of Modern Art, Tokyo (Japan)

- **The Challenges of National Film Center for Digital Cinema Preservation**

Katsuhisa Ohzeki, Kazuki Miura, Yoriaki Sasaki,

Tomonori Nakanishi, Hitomi Matsuyama, Akira Tochigi

The National Museum of Modern Art, Tokyo (Japan)

- **Content Espresso: Dispersed Storage for High-speed Network Access to Large-size Image Files**

Kunitake Kaneko, Daisuke Ando, Takuro Yamagishi,

Takeshi Sano, Fumio Teraoka

Keio University (Japan)

- **Photochemical Restoration of Mori-Kurenai's Pathe Baby 9.5mm Films**

Kanta Shibata

Imagica West Corp. (Japan)

- **Identification White Precipitate from Damaged Triacetate Base Movie Films**

Keiko Takahashi, Hiroshi Hayakawa, Hitoshi Yajima

Tokyo Polytechnic University (Japan)

[T401] New Materials for Novel Imaging Technology (1)

June 17 (Wed.), 13:00-14:20, Mid-size Conference Room 1 (2F)

Session chairs: Jun-Ichi Hanna (*Tokyo Institute of Technology*), Norihisa Kobayashi (*Chiba University*)

- **Long Bistability in Electrochemical Switching of Transmission** (*Invited*)

Chihyun Park, Haijin Shin, Eunyoung Kim

Yonsei University (Korea)

- **Brilliant Lanthanide Coordination Polymers for Full-color Imaging Applications** (*Invited*)

Yasuchika Hasegawa

Hokkaido University (Japan)

- **Electrochemical Modulation of Emission and Coloration by Using Luminescent Lanthanide(III) Complex and Viologen Derivatives via Intermolecular Energy Transfer**

Kazuki Nakamura, Kenji Kanazawa, Yuta Komiya, Norihisa Kobayashi

Chiba University (Japan)

[T402] New Materials for Novel Imaging Technology (2)

June 17 (Wed.), 14:40-15:50, Mid-size Conference Room I (2F)
Session chairs: *Hiroyoshi Naito (Osaka Prefecture University), Norio Nagayama (Ricoh Company, Ltd.)*

- **A Study on Dibenzocoronene Diimide Derivatives: Mesomorphic Behaviours and Charge Transport Properties** *(Invited)*
Jia-Ling Pu, Wenguang Wang, Tengzhou Yang, Yifei Wang, Zhongxiao Li
Beijing Institute of Graphic Communication (China)
- **Development of Practical Polycrystalline Organic Transistors Using Self-Organizing Molecular Semiconductors Having Highly Ordered Liquid Crystal Phase**
Hiroaki Iino, Hisashi Okamura, Takayuki Usui, Jun-ichi Hanna
Tokyo Institute of Technology (Japan)
- **Novel Smectic Liquid Crystals Based on Benzo[c]cinnoline: Synthesis, Mesomorphism and Electrochemical Properties**
Tengzhou Yang, Hiroaki Iino, Junichi Hanna
Tokyo Institute of Technology (Japan)

[T403] New Materials for Novel Imaging Technology (3)

June 17 (Wed.), 16:00-17:00, Mid-size Conference Room I (2F)
Session chairs: *Hideyuki Nakao (Toshiba Corporation), Akiteru Fujii (Mitsubishi Chemical Corporation)*

- **Material Design of Organic Semiconductor —How we can predict the charge carrier transport properties in a particular molecular system—**
Akira Ohno, Jun-ichi Hanna
Tokyo Institute of Technology (Japan)
- **Evaluation of Pigment Colors Based on Computational Chemistry**
Isao Kawata, Hiroya Nitta
Canon Inc. (Japan)

- **High Performance Organic Thin Film Transistor with Liquid Crystalline Ph-BTBT Derivatives**

Hiroaki Iino, Taiki Sato, Jun-ichi Hanna

Tokyo Institute of Technology (Japan)

[T501] Printing Technologies (1)

June 17 (Wed.), 13:00-14:10, Mid-size Conference Room II (2F)
Session chairs: *Makoto Omodani (Tokai University), Nobukazu Miyagawa (Chiba University)*

- **Integrated Material-Process Modeling and Control for Functional Printing** *(Invited)*
George T.-C. Chiu, J. Will Boley, Aaron Fulton, Nikhil Bajaj
Purdue University (USA)
- **Controlling Flexographic Printing Quality on DLE**
Mamoru Kuramoto¹, Masato Shirakawa¹, Yusuke Namba¹, Seiichiro Morikawa¹, Hiroshi Sato¹, Hiroshi Yamashita², Yuki Sakamoto²
¹*FUJIFILM Global Graphic Systems Co., Ltd.*
²*FUJIFILM Corporation (Japan)*
- **Development of Digital Imaging Technologies for Security Design**
Kazuya Oshima, Masato Kiuchi, Susumu Kiuchi, Kayoko Sato, Kiyosuke Uchida, Jun Furuta, Toshihiro Kimura, Yoshinobu Matsumoto, Kenichiro Yoneyama, Masanori Nakai
National Printing Bureau, Japan (Japan)

[T502] Printing Technologies (2)

June 17 (Wed.), 15:00-16:50, Mid-size Conference Room II (2F)
Session chairs: *Toshiharu Enomae (University of Tsukuba), Yoshihiko Azuma (Tokyo Polytechnic University)*

- **Paper Recycling and Testing the Deinkability of Digitally Printed Products** *(Invited)*
Axel J Fisher
INGEDE e.V. (Germany)
- **Total Quality Management for Small Offset Lithography Printing Organisations**
Chinmay Bhattacharya
Indian Statistical Institute (India)
- **Stabilization of Gravure Printing Quality. Establishment of Engraving Cell Stabilization Technology**
Toshiaki Ichihara
Dai Nippon Printing Co., Ltd. (Japan)
- **Key Technologies Developed for Business Inkjet Printer**
Tetsuya Saito

Canon Inc. (Japan)

• **Development of Belt Scratches Detection Sensor**

Susumu Momma, Hidemasa Suzuki, Koji Masuda, Kazuya Miyagaki
Ricoh Company, Ltd. (Japan)

[T101] Advanced Image Processing

June 17 (Wed.), 13:00-14:50, Mid-size Conference Room III (2F)
Session chair: Toshiyuki Yoshida (University of Fukui)

◦ **A New Era of Television Led by 8K Super Hi-Vision** (Invited)

Toru Kuroda
NHK (Japan Broadcasting Corporation) Science and Technology Research Laboratories (Japan)

• **Scene Color Correction with De-hazing Algorithm Based on Atmospheric Scattering Model**

Hiroaki Kotera
Kotera Imaging Laboratory (Japan)

• **A Linear-Time Method for Multi-Exposure Image Fusion**

Kohei Inoue, Kenji Hara, Kiichi Urahama
Kyushu University (Japan)

• **Image-Simulation for Realistic Skin Visualization**

Yoshitaka Yamaguchi, Eriko Ikeda, Takeharu Tani, Naoko Yoshida, Hideyasu Ishibashi
FUJIFILM Corporation (Japan)

• **Edge Detection and Frame Difference Based Exposure Fusion Algorithm for Ghost Removal in Motion-Intense High Dynamic Range Video Generation**

Qin Liu¹, Hao Wang¹, Takeshi Ikenaga²
¹Nanjing University, ²Waseda University (China)

[T404] Display and Electronic Paper

June 17 (Wed.), 15:40-16:30, Mid-size Conference Room III (2F)
Session chairs: Shuichi Maeda (Tokai University), Kazuki Nakamura (Chiba University)

◦ **Application of Ceramic Nanophosphors for Various Imaging Devices** (Invited)

Kohei Soga
Tokyo University of Science (Japan)

• **The Development of a Black and White Reflective Electrochromic Display Having High White Reflectivity and High Contrast**

Keigo Takauji, Yoshihisa Naitoh, Yoshinori Okada, Satoshi Yamamoto, Daisuke Gotoh, Masato Shinoda, Toshiya Sagisaka, Tamotsu Horiuchi, Hiroyuki Takahashi, Tohru Yashiro

Ricoh Company, Ltd. (Japan)

[T201] Standardization in Global Perspective

June 17 (Wed.), 13:00-14:50, Conference Room (2F)
Session chair: Toshiaki Kurokawa (Design Thinking Research & Education)

◦ **The Making of OLM Open Tools** (Invited)

Marc Salvati
OLM Digital R&D (France)

◦ **Heterogeneous Imaging System Using Top-Down Adaptability** (Invited)

Ken Krechmer
IEEE Senior Member (USA)

◦ **Standardization in Building: A Review of MS1184:2014** (Invited)

Asiah Abdul Rahim, Nur Amirah Abd Samad
International Islamic University Malaysia (Malaysia)

• **Global Communication at International Standardization Discussion**

Shigeaki Takahashi
IEEEJ SIG on International Standardization Education (Japan)

[T202] Panel session: "Challenges in Standardization for Advanced Imaging"

June 17 (Wed.), 15:10-17:00, Conference Room (2F)

Coordinator:

· Toshiaki Kurokawa (IEEEJ)

Panellist:

- Ken Krechmer (IEEE)
- Tineke M. Egyedi (The Delft Institute for Research on Standardization)
- Hideaki Yoshida (Olympus Imaging, SPSTJ)
- Mitsuji Matsumoto (Waseda University, ITU, IEEEJ)
- Kohtaro Asai (Chair of ISO/IEC JTC 1/SC 29, Mitsubishi Electric, ITE)
- Osamu Ide (Fuji Xerox, ISJ)
- Akihiro Ito (Fuji Xerox, ISO/TC 130, JSPST)

[T4G] ISJ General Meeting

June 17 (Wed.), 17:20-19:00, Mid-size Conference Room I (2F)

[T3G] SPIJ General Meeting

June 17 (Wed.), 17:20-19:00, Mid-size Conference Room II (2F)

Thursday, June 18, 2015

	Hitotsubashi Hall (2F)	Mid-size Conference Room I (2F)	Mid-size Conference Room II (2F)	Mid-size Conference Room III (2F)	Conference Room (2F)	Special Conference Room (1F)
9:00	[T4K] Keynote Talk 4: Dr. Kars-Michiel H. Lenssen 9:00-9:50					
10:00	[PA] Poster A1 & A2 (Short Presentation) 10:00-11:20	[PB] Poster B1 & B2 (Short Presentation) 10:00-11:20	[T303] Photography in Life and Culture (1) 10:00-11:10	[T304] Image Acquisition (1) 10:00-11:10	[T203] Standardization in Various Applications (1) 10:00-11:10	
11:00						
12:00						
13:00	[T405] New Materials for Printing and Display 13:10-14:10	[T503] Expansion of Printing Technologies (1) 13:10-14:20	[T305] Photography in Life and Culture (2) / Image Acquisition (2) 13:10-14:10	[T102] Medical Imaging (1) 13:10-14:40	[T204] Standardization in Various Applications (2) 13:10-13:30 [T205] Standardization in Image Coding and Representation (1) 13:30-14:30	[PE1] Poster A1 & B1 (Exhibition) 12:20-14:10
14:00						
15:00	[T406] Ink Jet Process and Materials 14:20-15:50	[T504] Expansion of Printing Technologies (2) 14:40-15:20	[T306] Image Acquisition (3) 14:20-15:40	[T103] Medical Imaging (2) 14:50-15:50	[T206] Standardization in Image Coding and Representation (2) 14:40-15:50	[PE2] Poster A2 & B2 (Exhibition) 15:00-16:50
16:00						
17:00	[TAS] Special Talk: Prof. Hiroshi Amano 17:00-17:50					
18:00		[TAR] Reception (18:00-19:30)				
19:00						

June 18

[T4K] Keynote Talk 4

June 18 (Thu.), 9:00-9:50, Hitotsubashi Hall (2F)
 Session chairs: *Makoto Omodani (Tokai University), Yoshihiko Hotta (Ricoh Company, Ltd.)*

- **E-Skin Technology and Its Application in Smart Windows**
 Kars-Michiel H. Lenssen
Philips Research (Netherlands)

[PA] Poster A1 & A2 (Short Presentation)

June 18 (Thu.), 10:00-11:20, Hitotsubashi Hall (2F)

Poster A1

Session chair: *Toshifumi Satoh (Tokyo Polytechnic University)*

- PA1-01 (Withdrawn)

- PA1-02 **Elucidation of the Fraser-Wilcox Motion Illusion**
 Kazhiro Otsuki, Makoto Omodani
Tokai University (Japan)

- PA1-03 **Electrical Conductivities of Polymer-Silica Nanocomposite Sheets**
 Taito Sugitara¹, Takuma Syoji², Isao Komatsu³, Shuichi Maeda^{1,2,3}
¹Graduate School of Engineering, Tokai University,
²Tokai University, ³School of Engineering, Tokai University (Japan)

- PA1-04 **Enhancement of Electrochemiluminescence from Ruthenium(II) Complex by Adding TiO₂ Nano Particles**
 Shota Tsuneyasu, Kazuki Nakamura, Norihisa Kobayashi
Chiba University (Japan)

- PA1-05 **10 kHz Operatable AC-Driven Electrochemiluminescent Cell with DNA/Ru(bpy)₃²⁺ Complex**
 Ryota Takahashi, Shota Tsuneyasu, Kazuki Nakamura, Norihisa Kobayashi
Chiba University (Japan)

- PA1-06 **Preparation of Transparent Conducting Films with Fillers of Organic Nano/microtubes and Wires**
 Takuya Tokuda¹, Kazumu Watanabe¹, Katsuyuki Murashiro², Katsuyoshi Hoshino¹
¹Chiba University, ²JNC Petrochemical Corporation (Japan)

- PA1-07 **NIR Electrofluorescence Switching from Electrochemically Reversible π -Conjugated Organic Dyes**
 Hanwhuy Lim, Seogjae Seo, Eunyoung Kim
Yonsei University (South Korea)

- PA1-08 **Niobium Films as Rewritable Imaging Media**
 Kosei Matsunaka, Hayata Aoki, Isao Komatsu, Shuichi Maeda
Tokai University (Japan)

- PA1-09 **A Thermo-sensitive Imaging Coating Based on Polymer Nanoparticles Containing Infrared Absorbing Dye**
 Zhongxiao Li, Jinjuan Teng, Jialing Pu
Beijing Institute of Graphic Communication (China)

- PA1-10 **Kinds of Cationic Photoinitiators for UV and Visible Curing of Coatings: Mechanisms and Properties**
 Yulian Pang^{1,2}, Yingquan Zou^{1,2}, Xiaowei Chen², Tengfei Lai², Chunlei Ma²
¹Beijing Normal University, ²Hubei Gurun Technology Co., Ltd. (China)

- PA1-11 **Annealing Effect of Iron Carrier Beads on the Triboelectrification Behavior of Polymer Films**
 Yukihiko Hatae, Kazuya Tomura, Katsuyoshi Hoshino
Chiba University (Japan)

- PA1-12 **Characteristic of Powder Electroluminescent Device Using Graphene Instead of Indium Tin Oxide Transparent Electrode**
 Zhang Qiyang¹, Takamasa Okubo², Ryuji Okumura², Yo Ichikawa², Toshifumi Satoh¹
¹Tokyo polytechnic University, ²Nagoya Institute of Technology (Japan)

- PA1-13 **Color Profile Estimation Methods for Color Management System in Practical Printing Workflow**
 Shuheji Horita, Hirokazu Kondo
FUJIFILM Corporation (Japan)

- PA1-14 **A New Spatial Gamut Mapping Algorithm**
 Na Wang¹, Guangxue Chen¹, Ming Zhu²
¹South China University of Technology, ²Henan Institute of Engineering (China)

- PA1-15 **Color Characterization for a Paper-based 3D Color Printing System**
 Zhao Hui Yu^{1,3}, Zhao Hui Wang², Guang Xue Chen³, Liuxi He³
¹China Academy of Printing Technology, ²Hainan University, ³South China University of Technology (China)

Poster A2

Session chair: *Shinjiro Umezui (Waseda University)*

- PA2-01 (Withdrawn)

- PA2-01 Optical Characterization of Ag Deposition-based Multicolor Electrochromic Device with Localized Surface Plasmon Resonance**
Ryou Onodera, Ayako Tsuboi, Kazuki Nakamura, Norihisa Kobayashi
Chiba University (Japan)
- PA2-02 Synthesis and Function of Cucurbituril-Stabilized Silver Nanowires**
Yukihide Shiraishi, Toshimasa Eguchi, Hiroya Sawai, Hitoshi Asano, Shunsuke Kobayashi, Naoki Toshima
Tokyo University of Science Yamaguchi (Japan)
- PA2-03 Three-dimensional Observation of Toner by Ultra-high Voltage Electron Microscope Tomography**
Wakako Murakami, Tomoki Nishida
Ricoh Company, Ltd. (Japan)
- PA2-04 Thermo-switchable Dual Mode Displaying Media Enabling Multi-color Control of both Emission and Coloration**
Kouki Ogasawara, Kenji Kanazawa, Kazuki Nakamura, Norihisa Kobayashi
Chiba University (Japan)
- PA2-05 High Mobility and Operational Stability of Polymer Field-effect Transistors Based on a Top-gate Configuration**
Kenichiro Takagi, Takashi Nagase, Takashi Kobayashi, Hiroyoshi Naito
Osaka Prefecture University (Japan)
- PA2-06 Photoluminescence in a Thermally Activated Delayed Fluorescence Emitter for Organic Light-Emitting Diodes**
Akitsugu Niwa¹, Kensho Takaki¹, Takashi Kobayashi^{1,2}, Takashi Nagase^{1,2}, Kenichi Goushi^{3,4}, Chihaya Adachi^{3,4}, Hiroyoshi Naito^{1,2}
¹*Osaka Prefecture University*, ²*The Research Institute for Molecular Electronic Devices (RIMED), Osaka Prefecture University*, ³*Center for Organic Photonics and Electronics Research, Kyushu University*, ⁴*International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University (Japan)*
- PA2-07 Nondestructive Detection of Micro Organisms by Microfocus X-ray Method**
Xiujie Hu, Chenghua Sun, Shuyun Zhou, Fang Xing, Jian Zhao, Ping Chen, Li-qin Sheng
Technical Institute of Physics and Chemistry Chinese Academy of Sciences (China)
- PA2-08 Finite Element Based Analysis of Toner-Scattering in Two-Component Development System of Electrophotography**
Jong Hyun Park¹, Il Han Park¹, Myung Ki Baek¹, Kang Hyouk Lee¹, Seung Hoon Ha¹, Sang Don Lee²
¹*Sungkyunkwan University*, ²*Samsung Electronics Co., Ltd. (South Korea)*
- PA2-09 Development of Online Proofing System Using 4K Tablet Terminal**
Masaomi Kuwahara, Cuinan Yang, Yoshihito Hiramatsu, Masaki Imakawa, Tohru Sugiyama
Dai Nippon Printing Co., Ltd. (Japan)
- PA2-10 Preparation of Photochromic Pearl Pigments Doped with Iron Oxide**
Wataru Yoshizumi, Shota Kawasaki, Kiyoshi Kitahara
Kyodo printing co., Ltd. (Japan)
- PA2-11 High Accuracy of the Inspection Process under Paper Fluttering Situation Using a Cubic Shape Reconstruction**
Masahiro Yamada, Yuki IDO, Kenta Kobayashi, Takehumi Murase
Dai Nippon Printing Co., Ltd. (Japan)
- PA2-12 Comparative Study on the Edge Enhancement Effect Difference between Hardcopy (Printed Image) and Softcopy (Displayed Image)**
Krairoop Chareonsopa¹, Aran Hansuebsai¹, Yasushi Hoshino²
¹*Chulalongkorn University*, ²*Tokyo Denki University (Thailand)*
- PA2-13 Appropriate Illuminance for Comparing Colors between Display and Print**
Yoshihiko Azuma, Yuuri Isono
Tokyo Polytechnic University (Japan)
- PA2-14 Mechanism of the Bergen Illusion**
Yuichiro Nohara, Makoto Omodani
Tokai University (Japan)

[PB] Poster B1 & B2 (Short Presentation)

June 18 (Thu.), 10:00-11:20, Mid-size Conference Room I (2F)

Poster B1

Session chair: TBD

PB1-01 Generating Stone-Stripe-like Color Images by Bilateral Minimum and Maximum Filters

Ryuji Sato¹, Toru Hiraoka¹, Kiichi Urahama²

¹*Oita College*, ²*Kyushu University (Japan)*

- PB1-02 Hue-Preserving Unsharp-Masking with Locally-Projected Brightness**
Lei Hang, Kohei Inoue, Kiichi Urahama
Kyushu University (Japan)
- PB1-03 (Withdrawn)**
- PB1-04 Experimental Study on the Influence of Linear Perspective Lines on Depth Feeling by Using Computer Graphics**
Kota Uehira, Yasushi Hoshino
Tokyo Denki University (Japan)
- PB1-05 Lossless Re-encoding of Holographic Images Stored in JPEG Format for 3D Flow Field Measurement**
Takayuki Shikakura¹, Ichiro Mtsuda¹, Yusuke Kameda¹, Susumu Itoh¹, Shin-ichi Satake²
¹*Department of Electrical Engineering, Tokyo University of Science, ²Department of Applied Electronics, Tokyo University of Science (Japan)*
- PB1-06 Study on Method of Tongue Coating Measurement and Proposal of Tongue Coating Amount Estimation Method through Spectral Image Analysis**
Shuhei Iino¹, Toshiya Nakaguchi²
¹*Artificial Systems Science Medical System Course, Chiba University, ²Center for Frontier Medical Engineering, Chiba University (Japan)*
- PB1-07 Breadth Measurement of Sublingual Vein Using Near Infrared Photography**
Fumina Kobayashi¹, Akira Morita², Takeshi Oji³, Takao Namiki³, Toshiya Nakaguchi⁴
¹*Graduate School of Engineering, Chiba University, ²Graduate School of Medicine, Chiba University, ³Department of Medicine, Chiba University, ⁴Center for Frontier Medical Engineering, Chiba University (Japan)*
- PB1-08 A Study of Automatic Page Turning of Musical Scores by Detecting Player's Nods**
Haruka Jibiki¹, Toshikazu Shimizu¹, Yasuyuki Saito¹, Eita Nakamura², Shigeki Sagayama²
¹*National Institute of Technology, Kisarazu College, ²Meiji University (Japan)*
- PB1-09 On Factors Influencing upon Communication through Real Size Movies**
Shin-ichiro Ishiguro, Naokazu Aoki, Hiroyuki Kobayashi, Makoto Ichikawa
Chiba University (Japan)
- PB1-10 Enhancement of Impression by Application of Background Color to Electronic Cartoon**
Keiko Yamaguchi, Naokazu Aoki, Hiroyuki Kobayashi
Chiba University (Japan)
- PB1-11 The Study of Low Background Fine-grained Emulsion for Dark Matter Search**
Shunji Furuya¹, Tatsuhiko Naka¹, Takashi Asada¹, Mitsuhiro Kimura¹, Ken-ichi Kuwabara¹, Ken-ichi Kuge²
¹*Nagoya University, ²Chiba University (Japan)*
- PB1-12 Appropriate Light Exposure for Estimating Vegetation Index from Captured Images by Commercial Digital Cameras**
Keiji Osaki
International Christian University (Japan)
- PB1-13 Improvement of Crystal Sensitivity of Nuclear Emulsions for Muon Radiography**
Masaki Moto, Akira Nishio, Kunihiko Morishima, Kenichi Kuwabara, Katsuhisa Ohzeki
Nagoya University (Japan)
- PB1-14 Detection of Radiation Tracks Recorded on Silver-salt Photographic Materials by Fluorescence-labeling Method (IV).; Fluorescence Enhancement by Mixed-dye System Adsorbed on Silver Iodide**
Natsuki Iseya, Ken-ichi Kuge, Nobukazu Miyagawa, Gotaro Mizuguchi
Chiba University (Japan)
- PB1-15 Image Analysis to Detect Submicron Tracks for Directional Dark Matter Search**
Takayoshi Katsuragawa¹, Tatsuhiko Naka², Takashi Asada¹, Masahiro Yoshimoto¹, Atsuhiko Umemoto¹, Shunji Furuya¹, Shogo Machii¹, Ayuna Tanaka¹
¹*Graduate School of Science Nagoya University, ²KMI Nagoya University (Japan)*
- Poster B2**
Session chair: TBD
- PB2-01 Semi-Automatic 2D-3D Conversion of Still Images Using Partially Designated Depth Information**
Yuki Nakamura, Ichiro Matsuda, Yusuke Kameda, Susumu Itoh
Tokyo University of Science (Japan)
- PB2-02 Volumetric 3D Display System — Evaluated Flicker Using a Rotating Spiral Screen—**

Shinnosuke Suzuki, Chiemi Fujikawa, Makoto Omodani
Tokai University (Japan)

PB2-03 Creating a Computer-Generated Hologram Using RGB-D Camera

Satoki Hasegawa, Takashi Kakue, Tomoyoshi Shimobaba, Tomoyoshi Ito
Chiba University (Japan)

PB2-04 Free-viewpoint Video Synthesis from a Movable 2D Camera Array

Shunsuke Yamada¹, Keita Takahashi¹, Kenji Sawada², Mehrdad Panahpour Tehrani¹, Toshiaki Fujii¹

¹*Nagoya University*, ²*The University of Electro-Communications (Japan)*

PB2-05 Precise Extraction of Players in a Soccer Game for Free-Navigation

Yudai Mase, Kazuyoshi Suzuki, Mehrdad Panahpour Tehrani, Keita Takahashi, Toshiaki Fujii
Nagoya University (Japan)

PB2-06 Optical Properties of Calculation-free 2D-to-3D Automatic Conversion-type Imaging Screens

Koki Kodama¹, Hayata Aoki¹, Chitose Miyama¹, Akihiro Kuroda^{1,2}, Hiroyuki Yokota³, Shuichi Maeda¹

¹*Tokai University*, ²*Kuroda Consulting Incorporated*, ³*Tokyo Metropolitan Industrial Technology Research Institute (Japan)*

PB2-07 3D Digitization of Oil Painting by Fusing Laser Point Clouds and CCD Image

Chen Chen¹, Guang Xue Chen¹, Zhao Hui Yu¹, Zhaohui Wang²

¹*State Key Laboratory of Pulp and Paper Engineering, South China University*, ²*Hai Nan University (China)*

PB2-08 Explaining Ancient Tomb Information by Using Augmented Reality with Natural Images, and Creation of Music Pieces Matching Atmosphere

Toshimitsu Hara¹, Norihiko Suzuki², Sae Nemoto¹, Yasuyuki Saito¹, Jun Okuzumi³

¹*National Institute of Technology, Kisarazu College*, ²*Waseda University*, ³*Shibayama-town (Japan)*

PB2-09 (Withdrawn)

PB2-10 The Effects of Motor Control on the Perception of the Boundary of Photographic Image

Takuma Murakoshi, Makoto Ichikawa
Chiba University (Japan)

PB2-11 Digital Archives of Printed Matter as Cultural Property: Second Report

Tohru Sugiyama, Masaki Imai, Masahiro Yamada, Yusuke Murayama
Dai Nippon Printing Co., Ltd. (Japan)

PB2-12 Our Unique Techniques for Restoration of Motion Picture Film

Mariko Goda, Kanta Shibata
Imagica West Corp. (Japan)

PB2-13 Study on Born-Digital Moving Image Preservation; Case Study of Izumo-Taisha Shrine Footage

Kazuki Miura¹, Tomonori Nakanishi¹, Katsuhisa Ohzeki¹, Akira Tochigi¹, Akihiro Seino², Wataru Matsumoto²

¹*The National Museum of Modern Art, Tokyo*, ²*Imagica Corp. (Japan)*

PB2-14 Memory Texture as Mechanism of Improvement in Perception of Image Sharpness through the Addition of Noise

Xiazi Wan, Naokazu Aoki, Hiroyuki Kobayashi
Chiba University (Japan)

PB2-15 Worldwide Survey Method for Memory Colour

Saki Iwamoto, Kenta Kawada, Naokazu Aoki, Hiroyuki Kobayashi
Chiba University (Japan)

PB2-16 Development of Fast Neutron Imaging Using Nuclear Emulsion Technique

Yoichiro Nakayama¹, Hideki Tomita¹, Kunihiko Morishima², Fumitaka Yamashita¹, Shota Hayashi¹, Mitsutaka Isobe^{3,4}, Kunihiko Ogawa³, Mun Seong Cheon⁵, Dong Hwan Kim⁶, Tatsuhiro Naka², Toshiyuki Nakano², Mitsuhiro Nakamura², V. Sonnenschein¹, Jun Kawarabayashi⁷, Tetsuo Iguchi¹, Kentaro Ochiai⁸

¹*Nagoya Univ.*, ²*Graduate School of Sci., Nagoya Univ.*, ³*National Institute for Fusion Science*, ⁴*SOKEKENDAI*, ⁵*Diagnostics Technology Team, ITER Korea*, ⁶*Seoul National University*, ⁷*Tokyo City University*, ⁸*Fusion Research and Development Directorate, Japan Atomic Energy Agency (Japan)*

[T303] Photography in Life and Culture (1)

June 18 (Thu.), 10:00-11:10, Mid-size Conference Room II (2F)
Session chair: *Makoto Ichikawa (Chiba University)*

○ **Human Material Perception and Image Statistics (Invited)**

Isamu Motoyoshi
The University of Tokyo (Japan)

● **3D CG-based Tsunami Hazard Maps and Safe Shelters for Disaster Evacuation**

Qinglian Guo, Ayumi Matsushima
Kanazawa Institute of Technology (Japan)

• **Photography and Beyond — How Scientific Imaging Provides Fine Art Imaging with a New Toolkit**

Elke Eve Reinhuber
Nanyang Technological University (Singapore)

[T304] Image Acquisition (1)

June 18 (Thu.), 10:00-11:10, Mid-size Conference Room III (2F)
Session chair: *Yoshiyuki Inoue (Panasonic Corporation)*

• **Highly Time-Resolved Image Sensors and Their Applications** *(Invited)*

Shoji Kawahito
Shizuoka University (Japan)

• **Full-specification 8K Super Hi-Vision Camera**

Kazuya Kitamura¹, Takuji Soeno¹, Toshio Yasue¹, Toshihisa Watabe², Shoji Kawahito³, Tomohiko Kosugi⁴, Tadaaki Yanagi⁵, Takayuki Yamashita¹, Hiroshi Shimamoto¹
¹*NHK Science & Technology Research Laboratories*,
²*NHK Engineering System, Inc.*, ³*Shizuoka University*,
⁴*Brookman Technology, Inc.*, ⁵*Hitachi Kokusai Electric Inc. (Japan)*

• **Single-chip Imaging Experiments with a 133-Megapixel 60fps CMOS Image Sensor for 8K UHDTV**

Tomohiro Nakamura, Ryohei Funatsu, Takuji Soeno, Tetsuya Hayashida, Takayuki Yamashita, Hiroshi Shimamoto
NHK Science and Technology Laboratories (Japan)

[T203] Standardization in Various Applications (1)

June 18 (Thu.), 10:00-11:10, Conference Room (2F)
Session chair: *Fumitaka Ono (Tokyo Polytechnic University)*

• **Future Prospect of Imaging Technologies beyond 2020 Tokyo Olympic Games** *(Invited)*

Hiroshi Yasuda
Tokyo Denki University (Japan)

• **Education about Standardization in Professional Societies**

Toshiaki Kurokawa
Design Thinking Research & Education (Japan)

• **An Evaluation Method of Fluctuation in Color Gradation Image for Electrophotographic Printing**

Takashi Hodoshima, Makoto Hino
Ricoh Company, Ltd. (Japan)

[T405] New Materials for Printing and Display

June 18 (Thu.), 13:10-14:10, Hitotsubashi Hall (2F)
Session chairs: *Yoshihiko Hotta (Ricoh Company, Ltd.)*, *Makoto Omodani (Tokai University)*

• **Optically Transparent Cellulose Nanomaterials** *(Invited)*

Hiroyuki Yano
Kyoto University (Japan)

• **Application of Cellulose Nanofibers to Textile Coating** *(Invited)*

Hitomi Hamada
Tokyo Kasei University (Japan)

[T406] Ink Jet Process and Materials

June 18 (Thu.), 14:20-15:50, Hitotsubashi Hall (2F)
Session chairs: *Masahiko Fujii (Fuji Xerox Co., Ltd.)*, *Shinri Sakai (The University of Tokyo)*

• **Industrial Inkjet Technology Transforms the Global Ceramic Tile Industry** *(Invited)*

Richard Barham
Xaar plc. (UK)

• **Development of New Aqueous Resin Ink for Sign Graphics**

Masahiro Kido, Naohiro Toda, Tomohiro Nakagawa, Hidefumi Nagashima, Juichi Furukawa, Noriaki Okada, Hikaru Kobayashi
Ricoh Company, Ltd. (Japan)

• **Hydrodynamic Simulation of Inkjet Inks on Print Media**

Hideaki Kutsuna, Atsuhiko Masuyama
Canon Inc. (Japan)

• **Analysis of Wetting and Coalescing Behavior of Minute Ink Droplets by MPS Simulation**

Ryosuke Takahashi¹, Nobuyuki Hirooka¹, Tomoyuki Ito¹, Nobuyuki Nakayama¹, Hiroyuki Watanabe², Hiroshi Mataka², Seichi Inoue²
¹*Fuji Xerox Co., Ltd.*, ²*FUJIFILM Corporation (Japan)*

[T503] Expansion of Printing Technologies (1)

June 18 (Thu.), 13:10-14:20, Mid-size Conference Room I (2F)
Session chairs: *Toshifumi Satoh (Tokyo Polytechnic University)*, *Hirokazu Sawada (FUJIFILM Global Graphic Systems Co., Ltd.)*

• **Digital Printing: New Opportunities and Technical Insights** *(Invited)*

Eric Stelter
Physicist, Digital Printing Scientist, Aerotek Inc. (USA)

• **Method for Identifying Media Using Polarization State of Diffuse Reflection**

Yoshihiro Oba, Kazuma Goto, Yoshihiro Misaka, Shinji Sato, Fumikazu Hoshi
Ricoh Company, Ltd. (Japan)

• **Simulation of Glossiness and Reflected Light Distribution Considering Surface Shape of Images and Toner Deformation**

Hiroki Hiraguchi, Yasuhiko Ogino
Ricoh Company, Ltd. (Japan)

[T504] Expansion of Printing Technologies (2)

June 18 (Thu.), 14:40-15:20, Mid-size Conference Room I (2F)
Session chairs: *Toshifumi Satoh (Tokyo Polytechnic University), Hirokazu Sawada (FUJIFILM Global Graphic Systems Co., Ltd.)*

• **Paper-based Electric Power Generator from Vibration of Paper**

Evi Oktavia, Toshiharu Enomae
University of Tsukuba (Japan)

• **Multi-View Stereo Using Phase-Only Correlation for 3D Reconstruction and Its Application to e-Heritage**

Shuji Sakai¹, Koichi Ito¹, Takafumi Aoki¹, Takafumi Watanabe², Hiroki Unten²
¹*Tohoku University, ²Toppan Printing Co., Ltd. (Japan)*

[T305] Photography in Life and Culture (2) / Image Acquisition (2)

June 18 (Thu.), 13:10-14:10, Mid-size Conference Room II (2F)
Session chair: *Makoto Ichikawa (Chiba University)*

• **The Study of Relationships between Biological Information and Opposite Sex's Attractiveness**

Taku Yonezawa¹, Shoji Yamamoto², Hirokazu Doi³, Kazuyuki Shinohara³, Norimichi Tsumura¹
¹*Chiba University, ²Tokyo Metropolitan College of Industrial Technology, ³Nagasaki University (Japan)*

• **Estimation of Surface Spectral Reflectance of Watercolor Painting with Water Ratios**

Yukiko Kuma, Shoji Tominaga, Takahiko Horiuchi, Keita Hirai
Chiba University (Japan)

• **Acquiring Appearance of Thin Film Object Using Hyper Spectral Sensor**

Yoshie Kobayashi¹, Tetsuro Morimoto², Imari Sato³, Yasuhiro Mukaigawa⁴, Katsushi Ikeuchi¹
¹*University of Tokyo, ²Toppan Printing Co., Ltd, ³National Institute of Informatics, ⁴Nara Institute of Science and Technology (Japan)*

[T306] Image Acquisition (3)

June 18 (Thu.), 14:20-15:40, Mid-size Conference Room II (2F)
Session chair: *Hiroshi Shimamoto (Japan Broadcasting Corporation)*

◦ **Astronomical Imaging with 8 m Subaru Telescope and Thirty Meter Telescope (Invited)**

Masanori Iye
The Graduate University for Advanced Studies (Japan)

◦ **Advanced Remote-sensing Technology for Micro-satellites and UAVs (Invited)**

Junichi Kurihara, Yukihiko Takahashi
Hokkaido University (Japan)

• **The Advanced Technology of Foveon X3 Direct Image Sensor with 39Mpix Equivalent Resolution**

Tatsuya Inui
Sigma Corporation (Japan)

[T102] Medical Imaging (1)

June 18 (Thu.), 13:10-14:40, Mid-size Conference Room III (2F)
Session chair: *Toshiya Nakaguchi (Chiba University)*

◦ **Extreme Imaging and Beyond (Invited)**

Keisuke Goda
The University of Tokyo (Japan)

◦ **PET Innovation: How Imaging Improves Quality of Life (Invited)**

Taiga Yamaya
National Institute of Radiological Sciences (Japan)

◦ **Quantitative Ultrasound Diagnosis Based on Acoustic Tissue Properties Analysis (Invited)**

Tadashi Yamaguchi
Chiba University (Japan)

[T103] Medical Imaging (2)

June 18 (Thu.), 14:50-15:50, Mid-size Conference Room III (2F)
Session chair: *Taiga Yamaya (National Institute of Radiological Sciences)*

• **Measurement of Body Figure Deformation by Pneumoperitoneum Using 3D Camera**

Michael Susanto Slamet¹, Tatsuya Ueno¹, Toshiya Nakaguchi²

¹*Graduate School of Engineering, Chiba University*

²*Center for Frontier Medical Engineering, Chiba University (Japan)*

• **Registration and Segmentation of Multi-Contrast MRI for Knee Cartilage Evaluation**

Aizimu Tuerxun¹, Takashi Ohnishi², Joe Katsuragi³, Takahisa Sasho³, Ken Motoori³, Hideaki Haneishi²

¹*Graduate School of Engineering, Chiba University,*

²*Center for Frontier Medical Engineering, Chiba University,*

³*Graduate School of Medicine, Chiba University (Japan)*

• **Computer Aided Detection Method of Disease Area Using Three Dimensional Regional Statistics from Retinal Optical Coherence Tomography Images**

Shinji Tsuruoka¹, Ikunari Nakahara¹, Mohd Fadzil Bin Abdul Kadir², Haruhiko Takase¹, Hiroharu Kawanaka¹, Hisanori Yagami¹, Hisashi Matsubara¹, Fumio Okuyama³

¹Mie University, ²Universiti Sultan Zainal Abidin, ³Suzuka University of Medical Science (Japan)

[T204] Standardization in Various Applications (2)

June 18 (Thu.), 13:10-13:30, Conference Room (2F)
Session chair: Fumitaka Ono (Tokyo Polytechnic University)

• **Strategies for International Standardization of Multimedia Systems and Equipment**

Yushi Komachi

Kokushikan University (Japan)

[T205] Standardization in Image Coding and Representation (1)

June 18 (Thu.), 13:30-14:30, Conference Room (2F)
Session chairs: Shigeki Takahashi (Study Group on Skill Standard for Standardization), Yushi Komachi (Kokushikan University)

○ **JPEG 25Years: Its History and the Future of Standardization** (Invited)

Fumitaka Ono

Tokyo Polytechnic University (Japan)

○ **JPEG AR Standard** (Invited)

Je-Ho Park, Youngseop Kim

Dankook University (Korea)

[T206] Standardization in Image Coding and Representation (2)

June 18 (Thu.), 14:40-15:50, Conference Room (2F)
Session chairs: Shigeki Takahashi (Study Group on Skill Standard for Standardization), Yushi Komachi (Kokushikan University)

○ **Standardization of Image Quality Measurement for Printing Systems (ISO/IEC JTC 1 SC28/WG4)** (Invited)

Yumiko Kishi, Susumu Imakawa

Ricoh Company, Ltd. (Japan)

• **VQEG: Shaping Standards on Video Quality**

Quan Huynh-thu¹, Arthur Webster², Kjell Brunnstrom³, Margaret Pinson²

¹Canon Information Systems Research Australia Pty Ltd., ²NTIA/ITS, ³ACREO (Australia)

• **Influence of Aspect Ratio and Character Spacing on Readability of Japanese Fonts**

Koichi Oda¹, Madoka Ohnishi¹, Terumi Otsukuni¹, Aoi Takahashi¹, Sachie Kawamura², Atsuo Suzuki²

¹Tokyo Woman's Christian University, ²Kyodo Printing Co., Ltd. (Japan)

[PE1] Poster A1 & B1 (Exhibition)

June 18 (Thu.), 12:20-14:10, Special Conference Room (1F)

· See p.8 (A1) and p.9 (B1) for the paper lists.

[PE2] Poster A2 & B2 (Exhibition)

June 18 (Thu.), 15:00-16:50, Special Conference Room (1F)

· See p.8 (A2) and p.10 (B2) for the paper lists.

[TAS] Special Talk

June 18 (Thu.), 17:00-17:50, Hitotsubashi Hall (2F)
Session chair: Toshiharu Kurosawa (Chiba University)

○ **Revolution of Display and Lighting by LEDs**

Hiroshi Amano

Nagoya University (Japan)

[TAR] Reception

June 18 (Thu.), 18:00-19:30, Mid-size Conference Room (2F)

Friday, June 19, 2015

	Hitotsubashi Hall (2F)	Mid-size Conference Room I (2F)	Mid-size Conference Room II (2F)	Mid-size Conference Room III (2F)	Conference Room (2F)	Special Conference Room (1F)
9:00	[T5K] Keynote Talk 5: Prof. Reinhard Bauman 9:00-9:50					
10:00	[T505] Printed Electronics and 3D Technologies 10:00-11:40	[T407] Imaging Materials (1) 10:00-11:40	[T104] Advanced 3D Imaging Technology 10:00-11:30	[T307] Image Acquisition (4) 10:00-10:30	[T105] Media Processing 10:00-11:30	
11:00				[T308] Sensing of Radiation and Emission (1) 10:30-11:30		
12:00						
13:00	[ICP] Incubation (Presentation: Invited) 12:40-13:40	[T408] Imaging Materials (2) 12:40-13:40	[T106] 3D Shape Measurement 12:40-13:40	[T309] Sensing of Radiation and Emission (2) 12:40-13:30	[T207] Standardization for New Frontiers (Joint session of Tracks 1 & 2) 12:40-13:40	[ICE] Incubation (Exhibition) 12:40-16:00
14:00						
15:00	[T506] Digital Printing Technologies (1) 14:30-15:30	[T409] Imaging Materials (3) 14:30-15:30	[T107] 3D Display 14:30-15:50	[T310] Sensing of Radiation and Emission (3) 14:30-15:10	[T109] Image and Video Processing Applications 14:30-15:50	
16:00	[T507] Digital Printing Technologies (2) 15:40-17:00	[T410] Imaging Device 15:40-17:00	[T108] 3D Image Analysis and Applications 16:00-17:00	[T311] Sensing of Radiation and Emission (4) 15:20-17:00		

June 19

[T5K] Keynote Talk 5

June 19 (Fri.), 9:00-9:50, Hitotsubashi Hall (2F)
Session chairs: Masahiko Fujii (Fuji Xerox Co., Ltd.)

- **Trends in Printed Electronics: Applications and Market Entry**
Reinhard Bauman
Chemnitz University (Germany)

[T505] Printed Electronics and 3D Technologies

June 19 (Fri.), 10:00-11:40, Hitotsubashi Hall (2F)
Session chairs: Masahiko Fujii (Fuji Xerox Co., Ltd.), Shinichi Nishi (KONICA MINOLTA, INC.)

- **Approaches of Soluble Graphene Technology for Printing** *(Invited)*
Nguyen Chanh Khe, Tuan M. Le, Tuan T. Huynh, Son V. Nguyen, Phu C. Nguyen
HK Investment Production & Trading (Vietnam)
- **Printability of an Aqueous Nano-silver Ink for Fabrication of Conductive Lines** *(Invited)*
Aran Hansuebsai, Hiromichi Noguchi, Apiwit Leelapivat
Chulalongkorn University (Thailand)
- **3D Printing by UV Curable Chemicals**
Hiromichi Noguchi
Inkjet Consultant (Japan)
- **Proposal for 3D-Printing Regulation Technique in Fabricating Dangerous Devices Using Feature-Vector Based Matching Algorithm of 3D Shapes**
Toshio Modegi
Dai Nippon Printing Co., Ltd. (Japan)

[T407] Imaging Materials (1)

June 19 (Fri.), 10:00-11:40, Mid-size Conference Room I (2F)
Session chairs: Toshio Uehara (Treck Japan), Hiroyuki Kawamoto (Waseda University)

- **Material Innovation in Imaging Devices —from Amorphous to Ordered Materials for High Mobility—** *(Invited)*
Jun-ichi Hanna
Tokyo Institute of Technology (Japan)
- **Discovery of Metal-lustrous Low-molecular-weight Organic Crystals** *(Invited)*
Yukishige Kondo
Tokyo University of Science (Japan)
- **Anatomy of Toner Adhesion with SPM Measurement and Electrostatic Simulation 1**

Jun Hirabayashi¹, Technical Committee on Simulation Technology², Technical Committee on Toner Technology²
¹Canon Inc., ²The Imaging Society of Japan (Japan)

- **Anatomy of Toner Adhesion with SPM Measurement and Electrostatic Simulation 2**
Masami Kadonaga¹, Technical Committee on Simulation Technology², Technical Committee on Toner Technology²
¹Ricoh Company, Ltd., ²The Imaging Society of Japan (Japan)

[T104] Advanced 3D Imaging Technology

June 19 (Fri.), 10:00-11:30, Mid-size Conference Room II (2F)
Session chair: Jun Arai (Japan Broadcasting Corporation)

- **3D Modeling of Large-Scale Indoor Scenes Using RGB-D Cameras** *(Invited)*
Diego Thomas, Akihiro Sugimoto
National Institute of Informatics (Japan)
- **Super Multiview Video —Technology and Applications—** *(Invited)*
Mehrdad Panahpour Tehrani, Keita Takahashi, Toshiaki Fujii
Nagoya University (Japan)
- **Flow Visualization by a Digital Hologram** *(Invited)*
Shin-ichi Satake
Tokyo University of Science (Japan)

[T307] Image Acquisition (4)

June 19 (Fri.), 10:00-10:30, Mid-size Conference Room III (2F)
Session chair: Tatsuhiko Naka (Nagoya University)

- **X-Ray Imaging and CT Measurement with X-Ray Microscopy** *(Invited)*
Akihisa Takeuchi
Japan Synchrotron Radiation Research Institute (Japan)

[T308] Sensing of Radiation and Emission (1)

June 19 (Fri.), 10:30-11:30, Mid-size Conference Room III (2F)
Session chair: Tatsuhiko Naka (Nagoya University)

- **Imaging of Particle Trajectory with Photographic Emulsion Detectors for Fundamental Physics and Applied Science**
Tomoko Ariga
University of Bern (Swiss)
- **Neutrino Research Program with Nuclear Emulsion at J-PARC**

Tsutomu Fukuda¹, Hiroshi Shibuya¹, Satoru Ogawa¹, Tomokazu Matsuo¹, Yusuke Morimoto¹, Shota Iori¹, Hitoshi Oshima¹, Tsuneaki Inoh¹, Hajime Mizusawa¹, Shigeki Aoki², Satoru Takahashi², Kyohei Yamada², Osamu Sato³, Naotaka Naganawa³, Nobuko Kitagawa³, Shoji Mikado⁴

¹Toho University, ²Kobe University, ³Nagoya University,

⁴Nihon University (Japan)

• **The Imaging of Internal Density Structure for Geo-scientific Target with Cosmic-ray Muons**

Seigo Miyamoto¹, Jose Barrancos², Cristiano Bozza⁶, Lucia Consiglio⁴, Nicola D'Ambrosio³, Chiara De Sio⁶, Pedro Hernandez², Ryuichi Nishiyama¹, Chiara Sirignano⁵, Valeri Tioukov⁴

¹The University of Tokyo, ²Instituto Tecnológico y de Energías Renovables, S.A., ³INFN Gran Sasso Laboratory, ⁴Department of Physics of the University of Napoli, ⁵Department of Physics of the University of Padova, ⁶Department of Physics of the University of Salerno

(Japan)

[T105] Media Processing

June 19 (Fri.), 10:00-11:30, Conference Room (2F)

Session chair: *Hiroshi Watanabe (Waseda University)*

○ **Future Design and User Navigation Using Big Multimedia Data** (*Invited*)

Toshihiko Yamasaki

The University of Tokyo (Japan)

• **An Interactive Transcription Support System for Woodblock-Printed Japanese Historical Book Images**

Chulapong Panichkriangkrai¹, Liang Li², Keiko Suzuki³, Ryo Akama⁴, Kozaburo Hachimura²

¹Graduate School of Science and Engineering, Ritsumeikan University, ²College of Information Science and Engineering, Ritsumeikan University, ³Kinugasa Research Organization, Ritsumeikan University, ⁴College of Letters, Ritsumeikan University (Japan)

• **Particle-Based Real-Time Rendering of Heat Shimmer for Natural Convection**

Yusuke Nakano, Mitsunori Makino

Chuo University (Japan)

• **Automatic Generation of Musical Score in Vertical Line Notation from MIDI file**

Riku Sato¹, Yasuyuki Saito¹, Suguru Agata², Eita Nakamura³, Shigeki Sagayama³

¹National Institute of Technology, Kisarazu College, ²Showa University of Music, ³Meiji University (Japan)

[ICP] Incubation (Presentation: Invited)

June 19 (Fri.), 12:40-13:40, Hitotsubashi Hall (2F)

**Miyasako Laboratory
(Conservation and Restoration Lab.)**

Graduate school of Fine Arts, Tokyo University of the Arts

Horiuchi/Hirai Laboratory

Graduate School of Advanced Integration Science, Chiba University

**Kawahito/Kagawa/Yasutomi Laboratory
(Imaging Devices Lab.)**

Graduate School of Integrated Science and Technology, Shizuoka University

Koike Laboratory

Graduate School of Information Science and Engineering, Tokyo Institute of Technology

Tsumura Laboratory

Graduate School of Advanced Integration Science, Chiba University

Aoki/Imaizumi Laboratory

Graduate School of Engineering, Chiba University

Shimizu Laboratory

Graduate School of Engineering, Tokyo University of Agriculture and Technology

Omodani-Fujitani Laboratories

Faculty of Engineering, Tokai University

**Matsuo Laboratory
(Web Lab.)**

Graduate School of Engineering, Tokyo University

**Hirayama Laboratory
(Multi-media Application Lab.)**

Faculty of Information Science and Technology, Osaka Institute of Technology

**Kobayashi/Ishikawa-Komagata
Laboratories**

Faculty of Health and Medical Care, Saitama Medical University

And more...

[T506] Digital Printing Technologies (1)

June 19 (Fri.), 14:30-15:30, Hitotsubashi Hall (2F)

Session chairs: *Teruaki Mitsuya (Ricoh Company, Ltd.), Masa Taniguchi (Kyodo Printing Co., Ltd.)*

○ **Inkjet Jet Failure Monitoring System via Piezo Self-sensing** (*Invited*)

Kye-Si Kwon

Soonchunhyang University (Korea)

○ **Technologies in High Quality Sheet-fed Digital Press “Jetpress”** (*Invited*)

Yusuke Nakazawa

Fuji Film (Japan)

[T507] Digital Printing Technologies (2)

June 19 (Fri.), 15:40-17:00, Hitotsubashi Hall (2F)
Session chairs: *Shinjiro Umezu (Waseda University), Takao Taguchi (Toppan Printing Co., Ltd.)*

- **Stainless Steel Belt Suction System to Serve Uniform Tension in Web Handling**

Keiko Sawa, Masaru Sakuma
Dymco, Ltd. (Japan)

- **Development of Inkjet Supply for Offset Paper**

Yuuki Yokohama, Hiroshi Gotoh, Mariko Kojima, Tsutomu Maekawa, Michihiko Namba
Ricoh Company, Ltd. (Japan)

- **Spectral Manipulation using a Material Color Equivalency Space**

Maxim Wasyl Derhak^{1,2}, Roy S Berns²
¹*Onyx Graphics Inc.,* ²*Rochester Institute of Technology (USA)*

- **Fabrication of Nanoparticles and Their Applications in Printing Technologies**

Yanlin Song
Chinese Academy of Sciences (China)

[T408] Imaging Materials (2)

June 19 (Fri.), 12:40-13:40, Mid-size Conference Room I (2F)
Session chairs: *Nobuyuki Nakayama (Fuji Xerox Co., Ltd.), Tatsuya Tada (Canon Inc.)*

- **New Functional External Additive for Toner**

Naohiro Naito, Yusuke Tosaki, Yuki Amano, Yukiya Yamashita
NIPPON AEROSIL CO., LTD. (Japan)

- **Conductive Expression Mechanism in Dielectrics Containing Conductive Particles**

Toru Ogawa¹, Takeshi Nagao¹, Yuko Kawase¹, Takahiko Yamazaki¹, Tsukasa Matsuda¹, Hideaki Tanaka², Masatoshi Nakanishi²
¹*Fuji Xerox Co., Ltd.,* ²*FUJIFILM Corporation (Japan)*

- **Rheology of Dense Sheared Granular Liquids**

Koshiro Suzuki¹, Hisao Hayakawa²
¹*Canon Inc.,* ²*Kyoto University (Japan)*

[T409] Imaging Materials (3)

June 19 (Fri.), 14:30-15:30, Mid-size Conference Room I (2F)
Session chairs: *Katsuyoshi Hoshino (Chiba University), Tatsuo Takeuchi (Canon Inc.)*

- **Material Evaluation Technology with Pulse NMR**

Mio Kumai
Ricoh Company, Ltd. (Japan)

- **Study on a Technique of Molecular Dynamics Simulations for Higher Order Structure of Macromolecules**

Tomohiro Seko, Kazuki Inami, Nobuyuki Nakayama
Fuji Xerox Co., Ltd. (Japan)

- **Research on the Interaction between Oil and Water in the Process of Printing with Water-based Ink**

Haihua Zhou, Yanlin Song
Chinese Academy of Sciences (China)

[T410] Imaging Device

June 19 (Fri.), 15:40-17:00, Mid-size Conference Room I (2F)
Session chairs: *Masami Kadanaga (Ricoh Company, Ltd.), Tomoyuki Ito (Fuji Xerox Co., Ltd.)*

- **Numerical Analysis on Toner Scatter Phenomenon at 2nd Transfer Process**

Hideki Okamoto, Takeshi Nagao
Fuji Xerox Co., Ltd. (Japan)

- **Numerical Analysis on Transfer Latitude**

Takeshi Nagao, Nobuyuki Nakayama, Hirofumi Goto, Yoshihiro Enomoto
Fuji Xerox Co., Ltd. (Japan)

- **Dual Heater Technology for On Demand Fuser**

Hiroki Eguchi, Masatake Usui, Akira Kato, Atsushi Iwasaki, Hiroaki Sakai
Canon Inc. (Japan)

- **Investigation of Transient Temperature Response of Printing Papers in Direct Thermal Printer (Effects of Thickness of Printing Papers and Thermal Conduction to Platen Roller)**

Takashi Fukue¹, Koichi Hirose¹, Hiroto Terao², Tomoko Wauke², Hisashi Hoshino²
¹*Iwate University,* ²*ALPS Electric Co., Ltd. (Japan)*

[T106] 3D Shape Measurement

June 19 (Fri.), 12:40-13:40, Mid-size Conference Room II (2F)
Session chair: *Makoto Okui (National Institute of Information and Communications Technology)*

- **Optimal Pattern for One-Shot 3D Scan Using Grid Structure with Spatial Encoding Method**

Hiroki Morinaga¹, Satoshi Ono¹, Ryo Furukawa², Hiroshi Kawasaki¹
¹*Graduate School of Science and Engineering, Kagoshima University,* ²*Graduate School of Information Sciences, Hiroshima City University (Japan)*

- **Realtime Stereo System with Practical Calibration Technique for Road Surface Measurement**

Hiroki Morinaga^{1,2}, Satoshi Fujimoto^{3,4}, Akiho Taniyama¹, Kazuma Fukumoto¹, Yasuhiro Akagi², Hiroshi Kawasaki¹

¹ Over-K company, ² Kagoshima University, ³ Kumamoto University, ⁴ Tokyo University of Agriculture and Technology (Japan)

• **Depth from Defocus Applied to Auto Focus**

Khang Nguyen, Shunsuke Yasugi, Kozo Ezawa, Takashi Kawamura
Panasonic Corporation, AVC Networks Company (Japan)

[T107] 3D Display

June 19 (Fri.), 14:30-15:50, Mid-size Conference Room II (2F)
Session chair: Kenji Yamamoto (National Institute of Information and Communications Technology)

• **3D CG Image Quality Assessment for the Luminance Change by Contrast Enhancement Including S-CIELAB Color Space with 8 Viewpoints Parallax Barrier Method**

Norifumi Kawabata, Masaru Miyao
Nagoya University (Japan)

• **Evaluation Using Indexes by Depth Sensitivity on Screen**

Shunpei Kaji, Yasuo Watanabe
Kanazawa Institute of Technology (Japan)

• **Simple Dynamic Image Adjustment Method for Glassless 3D Viewing Systems**

Isao Nishihara, Takayuki Nakata
Toyama Prefectural University (Japan)

• **3D Projection Screen Inspired by the Structure of Human Skin**

Shuichi Maeda¹, Hayata Aoki¹, Koki Kodama¹, Akihiro Kuroda²
¹Tokai University, ²Kuroda Consulting Incorporated (Japan)

[T108] 3D Image Analysis and Applications

June 19 (Fri.), 16:00-17:00, Mid-size Conference Room II (2F)
Session chair: Mehrdad Panahpour Tehrani (Nagoya University)

• **Development of 3D Night Driving Assistance System for Disaster Rescue Vehicle**

Shunsuke Suidu, Takaaki Endo, Masanobu Yamamoto
Niigata University (Japan)

• **Subjective Evaluation of Compression Performance of Synthesis Error Compensated Multiview Video Plus Depth**

Akio Ishikawa¹, Makoto Okui¹, Kenji Yamamoto¹, Mehrdad Panahpour Tehrani², Keita Takahashi², Toshiaki Fujii²

¹National Institute of Information and Communications Technology, ²Nagoya University (Japan)

• **Stereo Matching for Natural Images with Different Contrasts**

Masamichi Kitagawa¹, Ayako Abe¹, Ikuko Shimizu¹, Radim Sara²

¹Tokyo Univ. of Agri. and Tech., ²Czech Technical University in Prague (Japan)

[T309] Sensing of Radiation and Emission (2)

June 19 (Fri.), 12:40-13:30, Mid-size Conference Room III (2F)
Session chair: Tsutomu Fukuda (Toho University)

◦ **Design of Photographic Emulsion to Detect Ionizing Radiation Tracks: Detecting Ultra-short Tracks with an Ultra-fine Grain Emulsion (Invited)**

Shunji Takada, Ken-ichi Kuge
Chiba University (Japan)

• **The Simulation about Effects of Micro Construction in the Nuclear Emulsion**

Takashi Asada¹, Tatsuhiro Naka², Takayoshi Katsuragawa¹, Masahiro Yoshimoto¹, Atsuhiko Umemoto¹, Shunji Furuya¹, Shogo Machii¹, Ayuna Tanaka¹, Ken-ichi Kuwabara¹, Ken-ichi Kuge³, Mitsuhiro Nakamura⁴
¹Nagoya University, Graduate School of Science, ²Nagoya University, Institute of Advanced Research, ³Chiba University, Graduate School of Advanced Integration Science, ⁴Nagoya University, EcoTopia Science Institute (Japan)

[T310] Sensing of Radiation and Emission (3)

June 19 (Fri.), 14:30-15:10, Mid-size Conference Room III (2F)
Session chair: Tsutomu Fukuda (Toho University)

• **Muography Using Nuclear Emulsion**

Kunihiko Morishima, Akira Nishio, Masaki Moto, Toshiyuki Nakano, Mitsuhiro Nakamura
Nagoya University (Japan)

• **Long-term Property of Nuclear Emulsion**

Akira Nishio, Kunihiko Morishima, Masaki Moto, Naotaka Naganawa, Katsuhisa Ohzeki, Kenichi Kuwabara, Mitsuhiro Nakamura
Nagoya University (Japan)

[T311] Sensing of Radiation and Emission (4)

June 19 (Fri.), 15:20-17:00, Mid-size Conference Room III (2F)
Session chair: Osamu Sato (Nagoya University)

• **Performance of T60 Nuclear Emulsion**

Yusuke Morimoto¹, Hiroshi Shibuya¹, Satoru Ogawa¹, Tsutomu Fukuda¹, Tomokazu Matsuo¹, Shota Iori¹, Hitoshi Oshima¹, Tsuneaki Inoh¹, Hajime Mizusawa¹, Shigeki Aoki², Satoru Takahashi², Kyohei Yamada², Osamu Sato³, Naotaka Naganawa³, Nobuko Kitagawa³, Shoji Mikado⁴

¹Toho University, ²Kobe University, ³Nagoya University, ⁴Nihon University (Japan)

• **A Study on Latent Image Stability of Nuclear Emulsion**

Naoataka Naganawa, Katsuhisa Ohzeki, Akira Nishio
Nagoya University (Japan)

• **Nuclear Emulsion Techniques for Systematic Study of Double Hypernuclei**

Junya Yoshida, Yoko Endo, Kaoru Hoshino, Hiroki Ito, Shinji Kinbara, Hidetaka Kobayashi, Akihiro Mishina, Kazuma Nakazawa, Myint Kyaw Soe, Aye MohMoh Theint, Khin Than Tint, J-PARC E07 collaboration
Gifu University (Japan)

• **Image Recognition for Double-lambda Hypernuclei in Nuclear Emulsion**

Aye Moh Moh Theint, Yoko Endo, Hiroki Ito, Shinji Kinbara, Hidetaka Kobayashi, Akihiro Mishina, Kazuma Nakazawa, Myint Kyaw Soe, Khin Than Tint, Junya Yoshida
Gifu University (Japan)

• **Practical Performance of Fine Track Selector**

Tomokazu Matsuo, Hiroshi Shibuya, Satoru Ogawa, Tsutomu Fukuda, Yusuke Morimoto, Shota Iori, Tsunehiko Inoh, Hajime Mizusawa
Toho University (Japan)

Jie Zhang, Hiroshi Watanabe
Waseda University (Japan)

• **Digital Halftoning by Clustered Dither Screen Masks Representing Green-noise Characteristics**

Naoto Kawamura
Kawamura Techno. Lab. (Japan)

• **3D Remote Collaboration System for Research and Educational Exchange on Environmental Studies and Cross-Cultural Communication**

Shiori Sasaki^{1,2}, Yasushi Kiyoki¹, Naofumi Yoshida¹, Aran Hansuebsai², Ronnaporn Yamkum², Siti Nor Khuzaimah Amit¹
¹Keio University, ²Chulalongkorn University (Japan)

[ICE] Incubation (Exhibition)

June 19 (Fri.), 12:40-16:00, Special Conference Room (1F)

· See p.17 for the participating labs.

[T207] Standardization for New Frontiers (Joint session of Tracks 1 & 2)

June 19 (Fri.), 12:40-13:40, Conference Room (2F)
Session chair: Hiroaki Kotera (Kotera Imaging Laboratory)

• **Introducing iccMAX — A New Frontiers for Color Management**

Maxim Wasyl Derhak¹, Phill Green², Tom Lianza³, William Li⁴
¹Onyx Graphics Inc., ²ICC Technical Secretary, ³Photo Research Inc., ⁴Kodak (USA)

• **The Network Configuration Related Standardization**

Ray Atarashi
Internet Initiative Japan Inc. (Japan)

• **An Open Source Framework SDK for Development of 2D Shooting Games**

Takahiro Arai¹, Tomoaki Moriya¹, Tokiichihiro Takahashi²
¹Tokyo Denki University, ²Tokyo Denki University, UEI Research (Japan)

[T109] Image and Video Processing Applications

June 19 (Fri.), 14:30-15:50, Conference Room (2F)
Session chair: Kohei Inoue (University of Kyushu)

• **Hierarchical Scrambling for Palette-Based Images Using Transposition Cipher**

Anu Aryal, Shoko Imaizumi, Naokazu Aoki
Chiba University (Japan)

• **An Effective Normalization Algorithm at Deep Learning for Passenger Detection in Railway Operation Videos**

PRODUCTS EXHIBITION

June 17 12:00-16:00
June 18 & 19 9:00-16:00

TREK Japan KK
<http://www.trekj.com>

Rigaku Corporation
<http://www.rigaku.com/en/>

KONICA MINOLTA, INC.
<http://www.konicaminolta.jp/instruments/index.html>

epping GmbH
<http://www.epping-pes.de>

NIPPON AEROSIL Co., Ltd.
<http://www.aerosil.com/product/aerosil/en/Pages/default.aspx>

PHOTRON LIMITED
<http://www.photron.com/>

Malvern Instruments (Spectris Co., Ltd.)
<http://www.spectris.co.jp/business/malvern.php>

SAKATA INX ENG. CO., LTD
<http://www.inx-eng.co.jp/>

Hitachi Koki Co., Ltd.
<http://centrifuges.hitachi-koki.com/material.html>

And more...

Keynote and Special Talks

June 17 (Wed.), 9:20-10:10

[Keynote 1]

From Image Processing to Scene Understanding: Learning and Sharing Context for Holistic Image Analysis

Prof. Tsuhan Chen, *Cornell University (USA)*

Abstract: Holistic scene understanding involves many sub-tasks, such as depth estimation, scene categorization, saliency detection, object detection, and event categorization. Each of these tasks explains some aspect of a particular scene. In the human visual system, these sub-tasks are often coupled together. One task can leverage the output of another task as contextual information for its own decision, and can also feed useful information back to the other tasks. In this talk, we will discuss how to design algorithms that perform multiple scene understanding tasks in a collaborative way like a human does.

We will show the performance of the proposed algorithms on a variety of applications, including natural scene understanding, images aesthetics assessment, and robotic assistive systems.

June 17 (Wed.), 10:20-11:10

[Keynote 2]

Standardizing Emergent Innovations in Converging Areas of Technology

Dr. Tineke M. Egyedi, *The Delft Institute for Research on Standardization (Netherlands)*

Abstract: In many areas of technology, open standards can function as catalysts of innovation and emerging markets. But deciding when to standardize is still difficult to resolve. Should we standardize early on in the technological trajectory, at a time when still little is known about promising applications and markets? Or rather at a later stage, when these have started to crystallize but when also the vested interests of stakeholders have increased? Heightened stakes may make it near-impossible to develop consensus standards. Timing of standardization is therefore one of the great strategic challenges, and likely one of the key factors in understanding the effect of standardization on innovation. In the field of imaging technologies the convergence of technologies poses additional challenges. In such converging areas, often different technological paradigms, paces in technology and standards development, and standardization cultures need to be bridged as well as different stakeholder interests.

This lecture discusses this twofold challenge of timing standardization in areas of converging technologies. Insights from standardization theory and research are offered, insights that are ingredients for standardization strategy and business development. These insights will be illustrated with imaging technologies.

June 17 (Wed.), 11:10-12:00

[Keynote 3]

Image Quality and Material Appearance

Prof. James A. Ferwerda, *Chester F. Carlson Center for Imaging Science, Rochester Institute of Technology (USA)*

Abstract: Images are a puzzle for vision scientists because they serve as visual representations of objects while also being objects themselves. We have conducted an experiment that investigates observers' abilities to disregard image distortions to correctly perceive the properties of depicted objects. We studied how well low quality (low contrast, blurry) images conveyed information for surface gloss. We found that gloss perception is not affected as much as might be expected by these distortions. We are using these findings to develop new image quality metrics that distinguish between the signal properties of images and the fidelity of the visual information they convey.

[Keynote 4]**E-Skin Technology and Its Application in Smart Windows**Dr. Kars-Michiel H. Lenssen, *Philips Research (Netherlands)*

Abstract: Smart windows are windows of which the transmission can be switched. These can be usefully applied, for example, in buildings and transportation (cars, airplanes, . . .), because it is desirable to be able to control the light, heat and/or privacy.

In recent years we developed a simplified, yet advanced version of our e-paper technology: e-Skin. Since it is less complicated and less expensive to realize, it enables new applications. This e-Skin technology (based on in-plane electrophoretics), promises to provide superior technical properties with respect to existing smart-window technologies, like e.g. larger transmission range, lower power consumption and high switching speed over a large temperature range. A contrast ratio of 70 between the light transmission in the dark vs. the transparent optical state has been demonstrated experimentally. The ultra-low power consumption (in the nW/cm^2 to $\mu W/cm^2$ range) allows the use of energy harvesting; this enables zero-energy e-Skin: autonomous devices that do not need power cables or batteries to function.

The holy grail for smart windows is a solution for active, independent control of incident light and heat. E-Skin technology provides the unique option to realize this by a window foil comprising different particles for control of daylight, respectively heat. For this purpose an electrophoretic suspension has to be developed containing particles of a material that is optically transparent but reflects infrared radiation.

[Keynote 5]**Trends in Printed Electronics: Applications and Market Entry**Prof. Reinhard Bauman, *Chrmnitz University (Germany)*

Abstract: Printing Technologies are additive manufacturing technologies which allow the deposition of materials only at positions where they are needed to assure a certain functionality at that point. In case of traditional printed matter made from colored inks, printers learned over centuries to please the human eye with highly defined clouds of tiny colored screen dots. The employment of inks with functionalities beyond color for the manufacturing of functional patterns on flexible, large area substrates laid the cornerstone for printing applications in fabrication fields which do not belong to the traditional printing industry: the fabrication of flexible displays, intelligent clothing, smart health-care products which adapt well to the body, or various electronics products. These typically web-fed and continuously operated manufacturing systems are based on analog and digital printing equipment which is integrated in appropriate pre and post press technology. The choice of the technologies per printed functionality respectively functional layer depends on the printability of the functional ink.

Future Hybrid Manufacturing Systems will consist of a modular designed machine base which will allow the user to “knob-in” the printing technology he needs for a given functionality, efficiently conflating the traditional and the modern non-impact ones. The deposition of the materials in required patterns will be complemented by further digital manufacturing technologies. The most promising candidate is laser technology for pattern improvement, post-press treatment of the printed patterns, and cutting. This employment of digital fabrication technologies will facilitate very short run lengths and changeover times.

The paper will introduce into digital manufacturing strategies, will discuss opportunities, challenges and limitations of printing smart objects with functionalities beyond color and will compile some promising examples of appropriate products on their way into the market place.

[Special Talk]**Revolution of Display and Lighting by LEDs**

Prof. Hiroshi Amano

Nagoya University (Japan)— *The 2014 Nobel Laureate in Physics* —

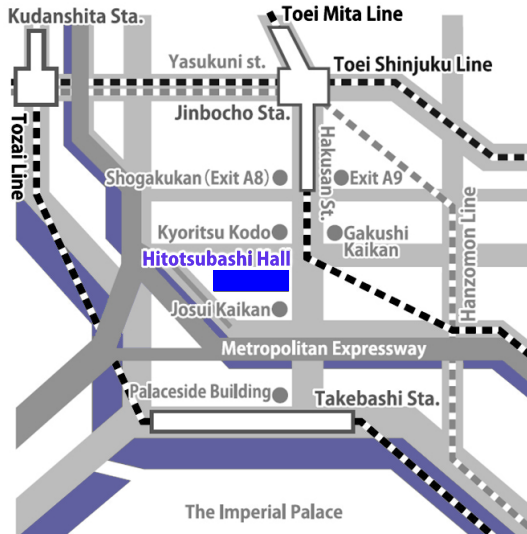
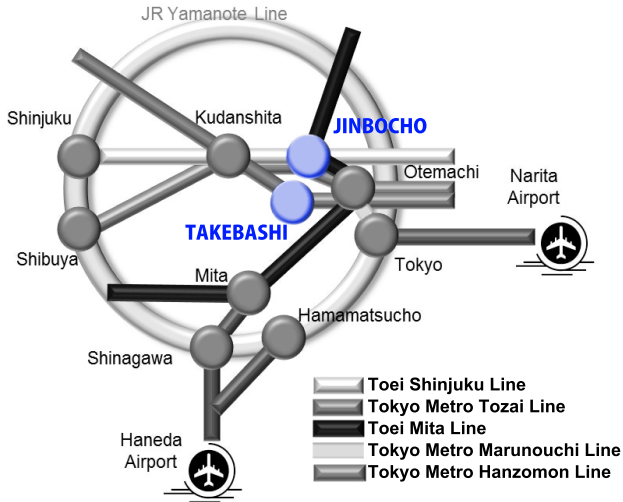
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National Center of Science (Hitotsubashi Memorial Hall)

2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo, JAPAN

Access: By train (Subway)

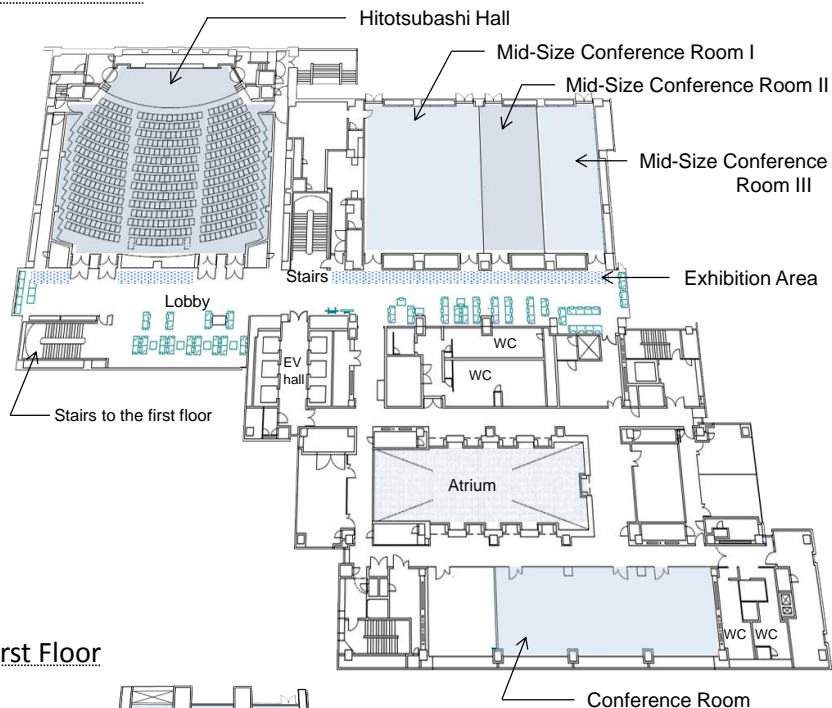
- Tokyo Metro Hanzomon Line/Toei Mita Line/Toei Shinjuku Line “Jinbocho” Exit A8, A9
 - Tokyo Metro Tozai Line “Takebashi” Exit 1b
- 3–5 minutes’ walk from the stations



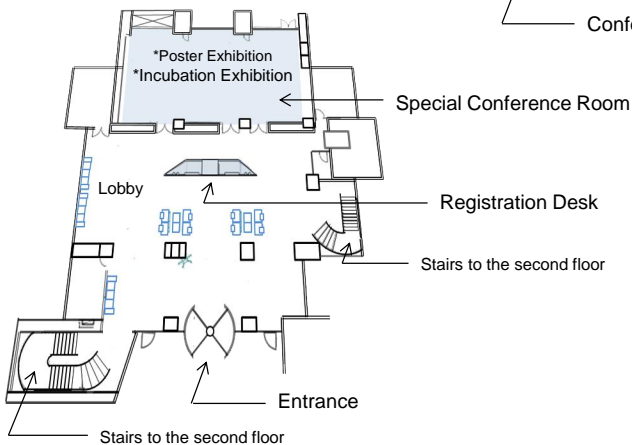
Floor Map

National Center of Science Floor Map

Second Floor



First Floor



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<https://mice3.jtbgmt.com/icai2015/>

- **Tour Information (JAPANiCAN.com)**

<http://www.japanican.com/en/tour/?AFF=GMTCD>



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