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(alphabetical order)

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Advance Program

2006 Asia-Pacific Microwave Photonics Conference

AP-MWP 2006

April 24 - 26, 2006

Kobe International Conference Center
Kobe, JAPAN

<http://www.ap-mwp.com>

Pre-registration via conference website is recommended.

Pre-registration Deadline: **March 23, 2006**



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On behalf of the Organizing Committee of 2006 Asia-Pacific Microwave Photonics Conference (AP-MWP2006), I am pleased to invite you to participate in the conference, which will be held at the International Conference Center, Kobe, Japan, on 24-26th April, 2006.



AP-MWP2006 originates from the Japan-Korea Joint Workshop on Millimeter and Microwave Photonics (JKJWS-MWP) and will be the first endeavor to expand a forum for discussion and information exchange in the Asia-Pacific region in the fields of Microwave Photonics (MWP) technology. It will provide an opportunity to learn the latest MWP technologies and discuss and exchange ideas for the future perspectives in various subjects ranging from devices, components, to systems and applications.

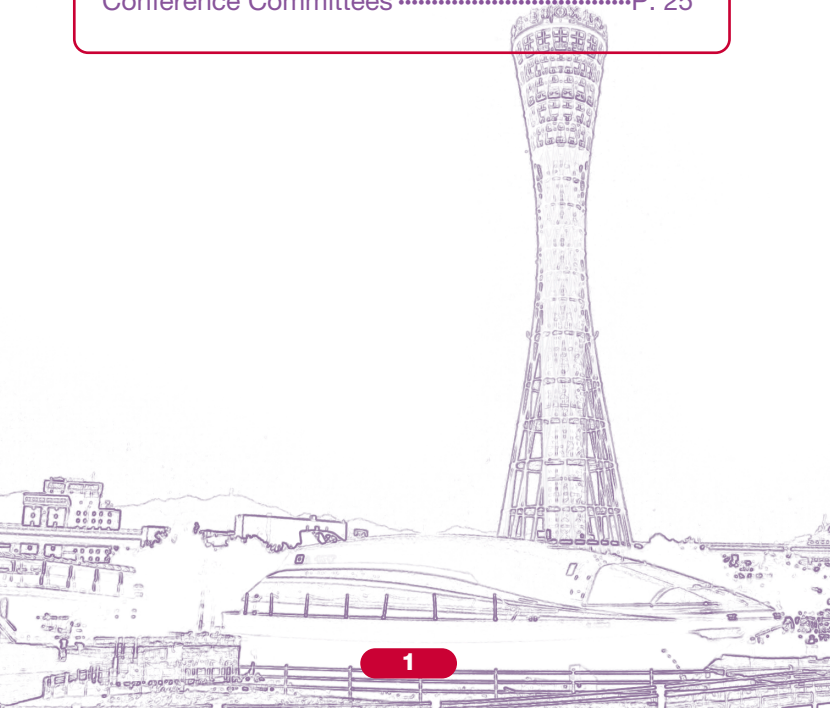
AP-MWP2006 will be held in the city of Kobe, of which port is one of the biggest in the world. Kobe is also famous for its beauty that results from its location, nestled between the mountains and the sea.

We have received strong and valuable support from the MWP communities in Korea, Asia-Pacific countries as well as in the US and Europe, and would like to acknowledge and express our sincere gratitude and appreciation.

I sincerely hope that AP-MWP2006 will be a fruitful and enjoyable conference to you all and contributes to the expansion of MWP technology in the region.

We look forward to your active participation and to welcoming you in Kobe in April, 2006.

Masayuki Izutsu
AP-MWP2006 Conference Chair
NICT, Japan



Program at a Glance

	Monday, April 24		Tuesday, April 25		Wednesday, April 26			
	International Conference Room	Reception Hall	International Conference Room	Reception Hall	International Conference Room	Reception Hall		
8:00							8:00	
8:30							8:30	
9:00							9:00	
10:00			Session E 9:00 - 10:30			Session I 9:00 - 10:30		10:00
11:00			Coffee Break			Coffee Break	Exhibition	11:00
12:00			Session F 11:00 - 12:30			Session J 11:00 - 12:15		12:00
13:00	Registration				Registration			13:00
14:00	Session A Opening Remarks & Plenary Talks 13:00 - 14:35							14:00
15:00	Coffee Break		Session G 14:00 - 15:30			Session K 13:45 - 15:15		15:00
16:00	Session B 15:00 - 16:30		Coffee Break			Coffee Break		16:00
17:00		Session C Poster Session 16:30-18:30	Session H 16:00 - 17:30			Session L 15:45 - 17:00		17:00
18:00		Reception				Session PD Postdeadline Papers Presentation 17:00-		18:00
19:00	Session D Rump Session Co-sponsored by IEEE-LEOS Japan 18:30 - 20:00		Banquet 19:00 - 21:20 (Time of Cruise) *Bus will leave the hotel for the port at 18:00					19:00
20:00								20:00

April 24, 2006

Session A: 13:00 - 14:35

Opening Remarks & Plenary Talks

Chair: Shozo Komaki (Osaka University)

- 13:00-13:05 **Opening Remarks**
Masayuki Izutsu (National Institute of Information and Communications Technology)
- 13:05-13:50 **A-1 “Role of Microwave Photonics in Future All IP Network”**
Tadao Saito (Toyota Infotechnology Center)
- 13:50-14:35 **A-2 “High Frequency Modulation of Semiconductor Lasers: Past Achievements and Future Opportunities”**
Rod Tucker (The University of Melbourne)

Session B: 15:00 - 16:30

Chairs: Alwyn Seeds (University College London)

Masaru Fuse (Matsushita Electric Industrial Co., Ltd.)

- 15:00-15:30 **B-1 “Millimeter Wave Radio over Fiber System”**
Arokiaswami Alphones (Nanyang Technological University)
- 15:30-16:00 **B-2 “Wavelength Division Multiplexed Fiber-Wireless Networks”**
T. A. Nirmalathas, M. Bakaul, M. Attygalle, C. Lim, D. Novak, R. Waterhouse, Z. Li (National ICT Australia, The University of Melbourne)
- 16:00-16:30 **B-3 “RoF Technologies for In-building Wireless Systems”**
Seongtaek Hwang (Samsung Electronics Co., Ltd.)

Session C: (Poster Session) 16:30 - 18:30

- C-1 “Linearization of DFB LD by Using Cross Gain Modulation of Reflective SOA in Radio-over-Fiber Link”**
Sang-Hoon Lee, Yong-Yuk Won, Jeung-Mo Kang, Hyuk-Choon Kwon, Sang-Kook Han (Yonsei University)

- C-2 “Wavelength Reuse Upstream Transmission Scheme for AWG-Based DWDM Millimeter-Wave Fiber-Radio Systems”**
Prasanna A. Gamage*, Ampalavanapillai Nirmalathas*, Christina Lim*, Masuduzzaman Bakaul* Dalma Novak* **, Rodney Waterhouse* ** (*The University of Melbourne, **Pharad, LLC)
- C-3 “Evaluation of CATV Uplink Transmission Quality Using OFDM under Ingress and FM Interference Condition”**
Yasushi Ikeda, Kazuo Kumamoto, Koji Yasukawa (Osaka Institute of Technology)
- C-4 “Nonlinear Distortion due to XPM in Electrooptical Upconversion WDM Microwave Fiber Optic Links”**
Linghao Cheng*, Sheel Aditya*, Alphones Arokiaswami*, L. C. Ong** (*Nanyang Technological University, **Institute for Infocomm Research)
- C-5 “Soft Computing-Based Predictions to Enhance Performance of Next Generation FSO Communication Systems”**
Edward Mutafungwa*, Kamugisha Kazaura**, Kazunori Omae**, Toshiji Suzuki**, Mitsuji Matsumoto**, Timo O. Korhonen*, Tadaaki Murakami***, Koichi Takahashi***, Hideki Matsumoto***, Kazuhiko Wakamori***, Yoshinori Arimoto**** (*Helsinki University of Technology, **GITS, ***Advanced Info-Communication Promotion Community, ****National Institute of Information and Communications Technology)
- C-6 “Proposal of Two-Dimensional Code Division Multiplexing Free Space Optical Communication System Using Chaos Spatial Synchronization”**
Shinya Takeda, Takeshi Higashino, Katsutoshi Tsukamoto, Shozo Komaki (Osaka University)
- C-7 “1.5Gbit/s Free Space Optical Transmission with an Automatic Alignment Function Using a MEMS Mirror”**
Kazuhiko Ide, Hiroyuki Ibe (Toshiba Corporation)
- C-8 “Broadband Analog Optical Transmitter Using Feedforward Compensation”**
Joon-Jae Lee*, Young-Seol Yun*, Doo-Hun Choi*, Young-Wan Choi*, Hoon Kim**, Seong-Taek Hwang**, Yun Je Oh** (*Chung-Ang University, **Samsung Electronics Co., Ltd.)
- C-9 “A Proposal of Spatially Parallel Transmission / Intensity Distribution Modulation for Indoor Infrared Wireless Communication Systems”**
Takatoshi Tanio, Shinichi Miyamoto (Osaka University)

- C-10 “Investigation of Ultra-Wideband for Single and Multimode Radio-over-Fiber Systems”**
P. K. Tang*, L. C. Ong*, Y. H. Chew*, M. K. Haldar** (*Institute for Infocomm Research, **National University of Singapore)
- C-11 “Sub-Carrier Resource Management for OFSDMA System Using RoF Ubiquitous Antennas”**
Luong Hong Hai, Katsutoshi Tsukamoto, Shozo Komaki (Osaka University)
- C-12 “Impulse Response Modeling of Single Mode Fiber in Radio-over-Fiber System for Millimeter Wave Transmission”**
C. S. Lim, P. K. Tang, B. Luo, L. C. Ong (Institute for Infocomm Research)
- C-13 “Characteristics of All-Optical 3R Regenerators Using Cascaded Second-Order Nonlinear Effect in Quasi-Phase Matched Lithium Niobate Devices”**
Yutaka Fukuchi, Yoshito Kachita, Saori Yamada, Toru Kawashima, Masami Akaike (Tokyo University of Science)
- C-14 “All-Optical Ultra-Fast Retiming Switches Using Cascade of Second Harmonic Generation and Difference Frequency Mixing in Periodically Poled Lithium Niobate Devices”**
Toru Kawashima, Yutaka Fukuchi, Saori Yamada, Masami Akaike (Tokyo University of Science)
- C-15 “All-Optical Decision Gate Circuit Using Cascaded Quasi-Phase Matched Lithium Niobate Devices”**
Yutaka Fukuchi, Yoshito Kachita, Toru Kawashima, Joji Maeda, Masami Akaike (Tokyo University of Science)
- C-16 “All-Optical Clock Extraction Using a Reflective SOA-Based Ring Laser”**
K. L. Lee, E. Wong, C. Lim, A. Nirmalathas (The University of Melbourne)
- C-17 “Multiwavelength-Switchable Erbium-Doped Fiber Laser Using a Multichannel Birefringence Fiber Bragg Grating”**
Li Xia*, Ping Shum*, Duan Liu*, Xueming Liu**, Chao Lu** (*Nanyang Technological University, **Institute for Infocomm Research)
- C-18 “Microwave Photonic Carrier Generation Using Four-Wave Mixing and Spectral Elimination”**
Mable P. Fok, Chester Shu (The Chinese University of Hong Kong)
- C-19 “Experimental Demonstration of 3-Bit Photonic Analog-to-Digital Converter by Slicing SC Spectrum with AWG”**
Shoichiro Oda, Atsushi Maeda, Akihiro Maruta (Osaka University)
- C-20 “Optical Hilbert Transformers with Mach-Zender Interferometers for Optical SSB Modulation”**
Katsumi Takano, Nobutomo Hanzawa, Tatsunori Yui, Kiyoshi Nakagawa (Yamagata University)
- C-21 “Generation of Optical Short-Pulse Train by Frequency Beating Based on Four-Wave Mixing in SOAs”**
Koji Otsubo, Haruhiko Kuwatsuka (Fujitsu Laboratories Ltd.)
- C-22 “Cost-Effective Wavelength Conversion Schemes in Optical Cross Connect System”**
Jaemyoung Lee*, Joon-Hak Bang** (*Korea Polytechnic University, **Electronics and Telecommunications Research Institute)
- C-23 “Characteristics of a Transparent Lightwave Antenna for Trial-Fabrication in MEMS Technology”**
Yasushi Munemasa* **, Makoto Mita**, Tadashi Takano** (*Tokyo University of Science, **Japan Aerospace Exploration Agency)
- C-24 “Detection of Photomixing Signals Using YBCO Josephson Junction Coupled with Coplanar Waveguide”**
R. Kinjo* **, I. Kawayama* **, H. Murakami*, T. Kiwa***, M. Tonouchi* ** (*Osaka University, **CREST-JST, ***Okayama University)
- C-25 “Right Scattering Spectra of 3D Fractal Menger Sponge by Using Terahertz Time-Domain Spectroscopy”**
Tohru Takanaka*, Hironori Takahashi*, Mitsuo Wada Takeda*, Soshu Kirihara**, Yoshinari Miyamoto**, Kazuaki Sakoda*** (*Shinshu University, **Osaka University, ***National Institute for Materials Science)
- C-26 “Characterization of Surface Wave Propagation in UC-PBG Patch Antenna by Using a Transient Near-Field Mapping System”**
Kyoung-Hwan Oh, Jong-In Song (Gwangju Institute of Science and Technology)
- C-27 “Using 1D Fractal Cantor-Bar Microstrip Lines to Control Microwaves”**
Youhei Suzuki*, Hideaki Kitahara**, Junichi Miyashita***, Mitsuo W. Takeda* (*Shinshu University, **Osaka University, ***Precision Technology Research Institute of Nagano Prefecture)

- C-28 “Tunable Bandpass Filter Based on Two-Dimensional Photonic Crystal Using Ferroelectric Materials”**
Ritwick Das, K. S. Daya, K. Thyagarajan (Indian Institute of Technology)
- C-29 “10 GHz Resonant Type LiNbO₃ Optical Modulator Array with Patch Antennas”**
Satoshi Shinada, Tetsuya Kawanishi, Masayuki Izutsu (National Institute of Information and Communications Technology)
- C-30 “Numerical Analysis of a 20GHz Cascaded Resonantly Enhanced Mach-Zehnder Modulator”**
Yuvaraja S. Visagathilagar, Thach G. Nguyen, Arnan Mitchell (RMIT University)
- C-31 “10 Gbps FSK WDM Modulation Using External FSK Modulator”**
Takahisa Fujita*, Tetsuya Kawanishi**, Takahide Sakamoto**, Kaoru Higuma*, Junichiro Ichikawa*, Masayuki Izutsu** (*Sumitomo Osaka Cement Co., Ltd., **National Institute of Information and Communications Technology)
- C-32 “Ridge-Type Zn-Indiffused Mach-Zehnder Modulator in LiNbO₃”**
Ruey-Ching Twu*, Chia-Chih Huang**, Chin-Yu Chang***, Way-Seen Wang*** (*Southern Taiwan University of Technology, **Tung Nan Institute of Technology, ***National Taiwan University)
- C-33 “Investigation on the Wavelength Characteristics of a High Extinction Ratio LiNbO₃ Optical Modulator”**
Kaoru Higuma*, Shingo Mori*, Tetsuya Kawanishi**, Masayuki Izutsu** (*Sumitomo Osaka Cement Co., Ltd., **National Institute of Information and Communications Technology)
- C-34 “Tunability of Lithium Niobate Loop Resonator”**
J. X. Chen*, T. Kawanishi**, K. Higuma***, S. Shinada**, M. Izutsu**, W. S. C. Chang*, P. K. L. Yu* (*University of California, San Diego, **National Institute of Information and Communications Technology, ***Sumitomo Osaka Cement Co., Ltd.)
- C-35 “A Wide Dynamic Ranged Radio Wave Receiving System with an Optical Modulator and DFB Lasers”**
Kazuhisa Haeiwa*, Takayuki Yamashita**, Yoshikazu Toba***, Masatoshi Onizawa*** (*Hiroshima City University, **NHK, ***NEC Tokin Corporation)
- C-36 “Optical Fiber Link Antenna Measurement System”**
Satoru Kurokawa, Masanobu Hirose, Koji Komiyama (National Institute of Advanced Industrial Science and Technology)

- C-37 “A Study on Sensitivity Improvement of Electro-Optic Detection with Arrayed Photodetectors”**
Kiyotaka Sasagawa, Masahiro Tsuchiya (National Institute of Information and Communications Technology)
- C-38 “All Optical Harmonic Frequency Up-Converters Based on Self-Pulsating Multi-Section DFB Lasers for 60GHz RoF Down-Link Systems”**
Kwang-Hyun Lee*, Woo-Young Choi*, Young-Ahn Leem**, Kyung-Hyun Park** (*Yonsei University, **Electronics and Telecommunications Research Institute)
- C-39 “Microwave Photonic Mixer Based on an InGaAs Photoconductor for Radio over Fiber Applications”**
Ho-Jin Song, Tae-Woo Kim, Seong June Jo, Chung-Hyun Lim, Soo-Ghang Ihn, Jong-In Song (Gwangju Institute of Science and Technology)
- C-40 “Broadband 90 Degree Hybrid Coupler Using Photonic Transversal Approach”**
Hossein Emami, Lam Anh Bui, Arnan Mitchell (RMIT University)
- C-41 “A Study on Nonlinear Distortion Suppression with Wavelength Control of EAM”**
Makoto Yamashita*, Kosuke Uegaki*, Kazuo Kumamoto*, Koji Yasukawa*, Keizo Inagaki**, Takeshi Higashino***, Katsutoshi Tsukamoto***, Shozo Komaki*** (*Osaka Institute of Technology, **ATR, ***Osaka University)

Session D: 18:30 - 20:00

Rump Session (co-sponsored by IEEE-LEOS Japan Chapter: Advanced photonic devices for MWP systems)

Chairs: Yuzo Yoshikuni (NTT Corporation)
Tetsuya Kawanishi (National Institute of Information and Communications Technology)

- 18:30-19:00 **D-1 “Characteristics of 60 GHz Analog RF-Optic Transceiver Module”**
Jeha Kim, Yong-Duck Chung, Kwang-Seong Choi, Young-Shik Kang, Kyoung-Ik Cho (Electronics and Telecommunications Research Institute)
- 19:00-19:30 **D-2 “UTC-PD Based Optoelectronic Devices for High-Speed and High-Frequency Applications”**
Satoshi Kodama, Hiroshi Ito (NTT Corporation)
- 19:30-20:00 **D-3 “Ultrafast All-Optical Switch in Silicon Wire Waveguides”**
L. R. Nunes, T. K. Liang, K. S. Abedin, T. Miyazaki, M. Tsuchiya (National Institute of Information and Communications Technology)

Session E: 9:00 - 10:30

Chairs: Jianping Yao (University of Ottawa)

Kazi S. Abedin (National Institute of Information and Communications Technology)

- 09:00-09:30 **E-1 “Long-Distance Femtosecond-Level Optical Synchronization”**
Fatih Ömer Ilday (Massachusetts Institute of Technology)
- 09:30-10:00 **E-2 “Multi-Wavelength Pulsed Sources and Their Applications in Parallel Processing of Signals”**
Chester Shu, Ka-Lun Lee, Mable P. Fok (The Chinese University of Hong Kong)
- 10:00-10:30 **E-3 “All-Optical Analog-to-Digital Conversion Using Optical Multi-Thresholding Module Based on Self-Frequency Shift in Fiber”**
Tsuyoshi Konishi (Osaka University)

Session F: 11:00 - 12:30

Chairs: Jong-In Song (Gwangju Institute of Science and Technology)

Yoshiyasu Ueno (The University of Electro-Communications)

- 11:00-11:15 **F-1 “Optical Frequency Comb Generation Using Phase Modulators and Group Velocity Dispersion Medium”**
Takashi Yamamoto, Tetsuro Komukai, Satoki Kawanishi, Kazunori Suzuki, Atsushi Takada (NTT Corporation)
- 11:15-11:30 **F-2 “Demonstration of Tunable Wavelength Conversion Based on Cascaded SFG-DFG with Spectral Reshaping for 160 Gbit/s RZ Signals in PPLN Waveguide”**
Hideaki Furukawa*, Ampalavanapillai Nirmalathas**, Naoya Wada*, Satoshi Shinada*, Hiroshi Tsuboya***, Tetsuya Miyazaki* (*National Institute of Information and Communications Technology, **National ICT Australia, ***OPTOQUEST CO., LTD)
- 11:30-11:45 **F-3 “All-Optical Analog-to-Digital Conversion Using Self-Frequency Shift with Bitwise Signal Allocation”**
Takashi Nishitani, Tsuyoshi Konishi, Kazuyoshi Itoh (Osaka University)

- 11:45-12:00 **F-4 “Modulation Characteristics of Reflective Semiconductor Optical Amplifier for Hybrid WDM/SCM-PON”**
Jeung-Mo Kang, Hyuk-Choon Kwon, Sang-Hoon Lee, Yong-Yuk Won, Sang-Kook Han (Yonsei University)
- 12:00-12:15 **F-5 “Tip-on-Fiber Electro-Optic Probe for Specific Absorption Rate Measurement”**
Hiroyoshi Togo*, Teruo Onishi**, Katsuki Kiminami**, Naofumi Shimizu*, Tadao Nagatsuma*, Shinji Uebayashi ** (*NTT Microsystem Integration Laboratories, **NTT DoCoMo, Inc.)
- 12:15-12:30 **F-6 “High-Extinction Ratio LiNbO₃ Intensity Modulator Applied to the Radio Interferometry”**
H. Kiuchi*, T. Kawanishi**, M. Yamada*, T. Sakamoto**, M. Tsuchiya**, J. Amagai**, M. Izutsu** (*National Astronomical Observatory, **National Institute of Information and Communications Technology)

Session G: 14:00 - 15:30

Chairs: Nan Yu (Jet Propulsion Laboratory)

Hiroshi Murata (Osaka University)

- 14:00-14:15 **G-1 “Development of 60 GHz Analog Optic Transmitter Module for Radio-over-Fiber Link”**
Yong-Duck Chung, Kwang-Seong Choi, Young-Shik Kang, Dong-Suk Jun, Kyoung-Ik Cho, Jeha Kim (Electronics and Telecommunications Research Institute)
- 14:15-14:30 **G-2 “Monolithic Integration of Planar Patch Antenna and UTC-PD on InP Substrate”**
Naofumi Shimizu, Tadao Nagatsuma (NTT Corporation)
- 14:30-14:45 **G-3 “Rectangular Waveguide Output Uni-Travelling-Carrier Photodiode Module Integrating a Power Amplifier for 10-Gbit/s Wireless Transmissions in the 125-GHz Band”**
Hiroshi Ito*, Tomofumi Furuta*, Toshihiko Kosugi*, Akihiko Hirata*, Kazuhiro Maruyama**, Hiroyuki Takahashi*, Yoshifumi Muramoto*, Masami Tokumitsu*, Yasuhiro Sato*, Tadao Nagatsuma*, Tadao Ishibashi** (*NTT Corporation, **NTT Electronics Corporation)

- 14:45-15:15 **G-4 “Efficient Photonic THz Generation”**
A. J. Seeds (University College London)
- 15:15-15:30 **G-5 “Terahertz-Wave Imaging in Reflection and Scattering Modes”**
Adrian Dobroiu*, Yoshiaki Sasaki*, Chiko Otani*, Kodo Kawase** (*Institute of Physical and Chemical Research, **Nagoya University)

Session H: 16:00 - 17:30

Chairs: Arokiaswami Alphones (Nanyang Technological University)
Hiroyuki Toda (Doshisha University)

- 16:00-16:15 **H-1 “Fourier-Transform Optically Controlled Beam Forming Network Using Spatial Light Modulator”**
T. Akiyama, N. Takemura, H. Oh-hashii, T. Nagatsuka, Y. Hirano (Mitsubishi Electric Corporation)
- 16:15-16:30 **H-2 “A Fundamental Demonstration of Frequency Conversion and Routing Method for Multi-Band RF Service Transmission Using Direct Optical Switching-Encoding Scheme in Fiber-Optic Software Definable Radio Network”**
Takeshi Higashino, Katsutoshi Tsukamoto, Shozo Komaki (Osaka University)
- 16:30-16:45 **H-3 “An Experiment of Multi-band Wireless Service Multiplexing Based on Chaotic DOS-CDM Incorporating Undesired Alias Suppression Function”**
Yusuke Motonami*, Takeshi Higashino*, Katsutoshi Tsukamoto*, Shozo Komaki*, Kazuo Kumamoto**, Koji Yasukawa**, Keizo Inagaki*** (*Osaka University, **Osaka Institute of Technology, ***Advanced Telecommunication Research Institute International)
- 16:45-17:00 **H-4 “Proposal of Distributed Antenna System Using Radio on Free Space Optics for Indoor WLAN and Its Throughput Improvement with Spectrum Delivery Function”**
Misato Kamei, Akihiko Murakoshi, Takeshi Higashino, Katsutoshi Tsukamoto, Shozo Komaki (Osaka University)

- 17:00-17:15 **H-5 “Experimental Performance Evaluation of Next Generation FSO Communication System”**
Kamugisha Kazaura*, Kazunori Omae*, Toshiji Suzuki*, Mitsuji Matsumoto*, Edward Mutafungwa**, Tadaaki Murakami***, Koichi Takahashi***, Hideki Matsumoto***, Kazuhiko Wakamori***, Yoshinori Arimoto**** (*GITS, **Helsinki University of Technology, ***Advanced Info-Communication Promotion Community, ****National Institute of Information and Communications Technology)

- 17:15-17:30 **H-6 “Demonstration of Radio over Fiber System for Wireless Multi Services”**
Byungjik Kim*, Hoon Kim*, Sangho Kim*, Sung Kee Kim*, Yonggyoo Kim*, Gyuwoong Lee*, Hanlim Lee*, Jaehoon Lee*, Seongtaek Hwang*, Yunje Oh*, Changsup Shim*, Jichai Jeong** (*Samsung Electronics Co., Ltd., **Korea University)

April 26, 2006

Session I: 9:00 - 10:30

Chairs: Paul Yu (University of California, San Diego)
Kiyotoshi Yasumoto (Kyushu University)

- 09:00-09:30 **I-1 “Recent Progress on Photonic Crystal Functional Devices”**
Toshihiko Baba (Yokohama National University)
- 09:30-10:00 **I-2 “Microwave Transmission through Normally Opaque Objects”**
Ping Sheng (Hong Kong University of Science and Technology)
- 10:00-10:30 **I-3 “Subwavelength-Diameter Glass Fibers for Micro- and Nanophotonics”**
Limin Tong (Zhejiang University)

Session J: 11:00 - 12:15

Chairs: Ping Sheng (Hong Kong University of Science and Technology)
Masataka Nakazawa (Tohoku University)

- 11:00-11:15 **J-1 “Broadband Optical Studies of Nano-Scale 1-D and 3-D Photonic Crystals”**
Peter T. Rakich*, Hideyuki Sotobayashi**, Juliet T. Gopinath*, Jason W. Sickler*, Chee Wei Wong*, Steven G. Johnson*, Minghao Qi*, Eleferios Lidorikis*, Henry I. Smith*, John D. Joannopoulos*, Erich P. Ippen* (*Massachusetts Institute of Technology, **National Institute for Communications and Technology)
- 11:15-11:30 **J-2 “Reciprocating Optical Modulator for 60GHz-Band ROF Transmitter”**
Yasuhisa Shimakura*, Kiichi Yoshiara*, Takahide Sakamoto**, Satoshi Shinada**, Tetsuya Kawanishi** (*Mitsubishi Electric Corporation, **National Institute of Information and Communications Technology)
- 11:30-11:45 **J-3 “26 GHz Guided-Wave EO Modulator with Resonant Electrode of Coupled Microstrip Lines and Modulation Enhancement Using Polarization Reversed Structure”**
Akira Enokihara*, Hiroyoshi Yajima*, Hiroshi Murata**, Yasuyuki Okamura** (*Matsushita Electric Industrial Co., Ltd., **Osaka University)
- 11:45-12:00 **J-4 “Frequency-Modulation on Radio-over-Fiber Signal Generated from Resonant-Electrode-Type Optoelectronic Oscillator”**
Takahide Sakamoto, Tetsuya Kawanishi, Masayuki Izutsu (National Institute of Information and Communications Technology)
- 12:00-12:15 **J-5 “Optical Response of Microwave Transistors and Their Applications to High-Speed Photo-Detectors”**
Hiroshi Murata, Daisuke Nakata, Noriyo Kobayashi, Yasuyuki Okamura (Osaka University)

Session K: 13:45 - 15:15

Chairs: Jaha Kim (Electronics and Telecommunications Research Institute)
Hiroshi Ito (NTT Corporation)

- 13:45-14:15 **K-1 “Regeneratively Mode-Locked Laser as an Opto-Electronic Microwave Oscillator and Its Application to Optical Metrology”**
Masataka Nakazawa (Tohoku University)
- 14:15-14:45 **K-2 “Optoelectronic Microwave Generation for Achieving Ultra-Low Phase Noise and Long-term Frequency Stability”**
Nan Yu (Jet Propulsion Laboratory)
- 14:45-15:15 **K-3 “Simultaneous Frequency Conversion Technique Utilizing an SOA-MZI for Full-Duplex WDM Radio over Fiber Applications”**
Jong-In Song, Ho-Jin Song (Gwangju Institute of Science and Technology)

Session L: 15:45 - 17:00

Chairs: Thas A. Nirmalathas (The University of Melbourne)
Yukio Horiuchi (KDDI R&D Labs)

- 15:45-16:00 **L-1 “Novel WDM-Based Bi-Directional Radio-on-Fiber Networks for Millimeter-Wave Access Systems”**
Chang-Soon Choi, Yozo Shoji, Hiroyo Ogawa (National Institute of Information and Communications Technology)
- 16:00-16:15 **L-2 “Error-Free Multi-Channel Transmission in 25-GHz Spacing DWDM Millimeter-Wave-Band Radio-on-Fiber System Using a Supercontinuum Light Source and Arrayed-Waveguide-Grating Filters”**
Teppei Nakasyotani*, Kiyokazu Matsuba**, Yoshitomo Takahashi**, Hiroyuki Toda**, Toshiaki Kuri***, Ken-ichi Kitayama* (*Osaka University, **Doshisha University, ***National Institute of Information and Communications Technology)

- 16:15-16:30 **L-3 “Bidirectional WDM/SCM-PON Link Based on Noise Suppressed Spectrally-Sliced Fabry-Perot Laser Diode and Reflective Semiconductor Optical Amplifier”**
Hyuk-Choon Kwon, Yong-Yuk Won, Jeung-Mo Kang, Sang-Hoon Lee, Sang-Kook Han (Yonsei University)
- 16:30-16:45 **L-4 “Distortion Characteristic of Super-Wideband FM Technique Using Optical Homodyne-Detection Scheme”**
Tomoaki Ohira, Kouichi Masuda, Masaru Fuse (Matsushita Electric Industrial Co., Ltd.)
- 16:45-17:00 **L-5 “Distortion Canceller for Radio-on-Fiber Link Employing Comb Filter”**
Shingo Tanaka*, Noritaka Taguchi*, Tsuneto Kimura**, Yasunori Atsumi* (*Optowave Laboratory Inc., **Yazaki Corporation)

Session PD: (Postdeadline Papers) 17:00 -

Chair: Masahiro Tsuchiya (National Institute of Information and Communications Technology)

Postdeadline Papers

A limited number of papers will be solicited for presentation in the final session of the conference on April 26. Please send ONE page camera-ready manuscript in PDF format to the following address:

ap-mwp2006@ilcc.com

The deadline for submission is **16:00, April 24, 2006, Japan Time.**

The paper format is the same as that of regular papers (see the website for details). If the paper is accepted, the manuscript will be printed in the handout materials distributed at the conference.

Information for Speakers & Participants

Instruction for Speakers

All speakers are requested to contact their session chairs at least 15 minutes before their respective session starts.

Time assignment including discussion is as follows:

Plenary: 45 min.

Invited: 30 min.

Regular: 15 min.

For visual presentations, a data projector (an LCD projector with an RGB connector) will be provided. It is recommended to check if your PC works fine with the projector before the session.

Poster Presentation

Poster Session is scheduled on April 24 from 16:30 to 18:30. Poster panels are available from 12:00 on the same day. The size of each panel is 210 cm high x 180 cm wide. The paper title, author(s)' name(s) and affiliation(s) should be printed on the wide paper and posted on the panel. Please be ready for discussion in front of your board during the session. Be sure to take your poster down immediately after the session.

Technical Digest

All technical papers scheduled for presentations at the conference will be published in the AP-MWP2006 technical digest. A copy will be made available to each delegate on arrival at the conference.

Language

The official language of the conference will be English, which will be used for all printed materials, presentations, and discussions.

Exhibition

The exhibition of AP-MWP2006, showing the latest technologies in microwave photonics, is planned to be held throughout the conference.

The exhibition offers attendees a unique opportunity to be shown and demonstrated innovative products, equipments and services of microwave photonics.

So please don't miss this opportunity.

Venue

The exhibition will be held at the Reception Hall, the International Conference Center Kobe, located directly in front of the technical session conference room.

Exhibition Schedule (Subject to change)

Monday, April 24	13:00 to 18:30
Tuesday, April 25	9:00 to 17:30
Wednesday, April 26	9:00 to 12:30

Exhibitors

Some confirmed exhibitors are:

- Anritsu Corporation
 - Mitsubishi Cable Industries, Ltd.
 - Mitsubishi Electric Corporation
 - NGK Insulators, Ltd.
 - Osaka Institute of Technology/
Advanced Telecommunications Research Institute
International/Osaka University
 - R&K Company Limited
 - Santec Corporation
 - THE FURUKAWA ELECTRIC CO., LTD.
 - TOSHIBA CORPORATION
- (alphabetical order, as of February 8)

Reception & Banquet

All participants are invited to a reception party and a banquet to be held in the evening of the first day of the conference (April 24, 2006) and the second day (April 25, 2006), respectively.

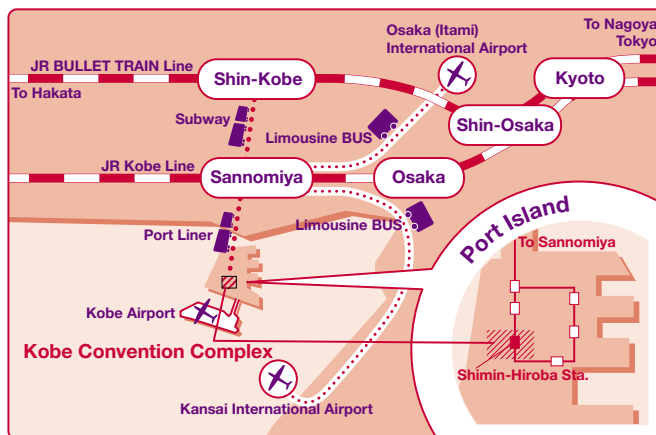
Banquet on April 25 will be held on a cruising boat, looking out of one of the most beautiful night views of Japan, Kobe, from the ocean. Bus to the port will leave the hotel at 18:00. Please be sure to gather at the lobby before departure time.

Venue

International Conference Center Kobe

The International Conference Center Kobe, conveniently situated on Port Island, is located 10 minutes from the center of downtown Kobe via the automated New Transit System. Connection to the Kansai International Airport (KIX) can be made by limousine bus in about 80 minutes.

Kobe Airport, which opened on February 16, 2006 on the man-made Port Island is connected to the Port Liner route. The International Conference Center Kobe is a 6-minute ride from Kobe Airport. For details on the venue, visit the website: <http://www.kcva.or.jp/kcc/icck/e-index.html>.



Registration

Pre-registration via the website is strongly recommended for your own convenience and prompt pick-up of registration materials. Registration fee for the meeting includes:

- admission to the technical sessions/ poster session/ exhibitions and conference reception
- one copy of the technical digest
- refreshments served in the morning and afternoon breaks
- banquet on April 25

Banquet on April 25 will be held on a cruising boat, looking out of one of the most beautiful night views of Japan, Kobe, from the ocean.

Capacity is limited; and you are strongly recommended to make early registration to the conference.

Please visit and register at

<http://www.ap-mwp.com/registration.html>

On-line registration will be closed on **Wednesday, April 19, 2006**. Please register on-site on or after April 20, 2006.

Registration Fees

Pre-registration on or before **Thursday, March 23, 2006:**

Delegates	45,000 yen
Students*	22,000 yen

Late registration on or after **Friday, March 24, 2006 and on-site:**

Delegates	50,000 yen
Students*	25,000 yen

*For students: Please send a copy of your student identification card by fax to the Secretariat Office.

Banquet Ticket (guests)

5,000 yen

Limited number of tickets are available. They will be sold strictly on first-come first-served basis.

Payment

Payment must be made in Japanese yen by wire transfer or by credit cards. Only MasterCard or VISA is accepted. Personal checks are not accepted.

Bank Transfer

Please transfer to the following account:

(Registrant is requested to pay ALL handling fees. Secretariat Office must receive the full amount.)

Transfer must be made within 2 weeks after you register on-line and must be finalized by April 19, 2006. For payment on or after April 20, 2006, please pay by cash on-site.

Bank Name: Sumitomo Mitsui Banking Corporation

Branch Name (Branch No.): Kanazawabunko (330)

Account Name: AP-MWP2006

Account Type: Ordinary

Account Number: 1176216

You will be able to download the specified bank transfer form from the website. Please fill out the form, attach the bank slip and send it to us by FAX.

Credit Card

Only MasterCard or VISA is accepted.

You will be able to download the specified credit card form from the website. Please fill out the form and send it to us by FAX. FAX must be received at the Secretariat Office at the latest by April 19, 2006. For payment on or after April 20, 2006, please pay by cash on-site.

Cancellation Policy

Cancellation requests must be made in writing to the AP-MWP2006 Organizing Committee by **April 17, 2006**. In case of cancellations made by **April 17, 2006**, a full refund of fees paid will be made based on your registration form (minus an administrative charge of 3,000 yen). If you request a refund, please state the pre-registrant's name and to whom the reimbursement should be made payable. No requests for a refund will be accepted **on or after April 18, 2006**.

Cancellation Fee

On or before April 17, 2006	3,000 yen
On or after April 18, 2006	Full registration fee

Receipt

You will receive a receipt for your registration fee payment on site of the conference. If you require other arrangements, please contact the Secretariat Office.

Accommodations

Hotel Reservations for AP-MWP2006 Participants

A limited number of rooms have been reserved during the Conference period at special discount rates. Hotel assignment will be made on a first-come, first-served basis. To make reservation at the hotels shown below, visit "Accommodation" page on the website.

For the convenience of AP-MWP2006 participants, hotel reservations are handled by JTB Corporation. Should you have any problems or questions, please contact:

AP-MWP2006 Desk

Western Japan Regional Headquarters, JTB Corp.
Event & Convention Sales Dept.
TEL: +81-6-6260-5060 FAX: +81-6-6263-0717
E-mail: westec_op9@jtb.jp

Room Rate & Access

The rates below are per person, per night, including breakfast and service charge and consumption tax.

Hotel	Room Rate		
	Single	Twin	Twin Single Occupancy
Kobe Portopia Hotel Access: –Adjacent to the venue –1 min. walk from Shimin-hiroba station of Portliner (monorail)	¥10,500	¥9,450	¥15,750
Hotel Pearl City Kobe Access: –Approx. 7 min. walk to the venue –2 min. walk from Nakafuto station of Portliner (monorail)	¥11,025	¥9,450	---

Hotel	Room Rate		
	Single	Twin	Twin Single Occupancy
Sanside Hotel Access: –Approx. 30 min. to the venue –Hotel-- (5 min. walk) -- Sannomiya station -- (15 min. by Portliner (monorail)) -- Shimin-Hiroba station -- (5 min. walk) -- venue	¥6,500	---	---
Sannomiya Terminal Hotel Access: –Approx. 30 min. to the venue –Hotel-- (1-min. walk) -- Sannomiya station -- (15 min. by Portliner (monorail)) -- Shimin-Hiroba station -- (5 min. walk) -- venue	¥10,080	¥9,870	¥14,910

The deadline for Online-Reservation

17:00 of April 10, 2006, Japan Time

(Please note that reservations will also be closed when all accommodations are filled.)

Cancellation/Revision

*In case of cancellation, your deposit will be refunded after deducting cancellation fees as follows.
(Handling charge of JPY 400 per person is not refundable.)

*Please note all refunds will be made after the Conference.

*Please revise and/or cancel your reservation through the website.

*Cancellation fee when notice is given:

Till 4 days before the first night of stay	No charge
2 to 3 days before the first night of stay	20% of total room charge
1 day before the first night of stay	50% of total room charge
The first night of stay or no notice given	100% of total room charge

Conference Committees

Organizing Committee

Chair: Masayuki Izutsu (NICT, Japan)
Vice Chairs: Mitsuru Naganuma (Teikyo University of Science and Technology, Japan)
Jeha Kim (ETRI, Korea)
Thas A. Nirmalathas (The University of Melbourne, Australia)

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[General Affairs]

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Tadao Nagatsuma (NTT Microsystem Integration Laboratories, Japan)
Haruhiko Kuwatsuka (Fujitsu Laboratories Ltd., Japan)

[Financial Affairs]

Hiroyo Ogawa (NICT, Japan)
Tazuko Tomioka (Toshiba Corporation, Japan)

[Local Arrangements]

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Hiroyuki Sasai (Matsushita Electric Industrial Co., Ltd., Japan)
Keizo Inagaki (ATR Adaptive Communications Research Laboratories, Japan)
Tomohiro Akiyama (Mitsubishi Electric Corporation, Japan)

[Exhibitions]

Yuichi Matsushima (NICT, Japan)
Satoki Kawanishi (NTT Network Innovation Laboratories, Japan)
Yuji Aburakawa (NTT DoCoMo Inc., Japan)

International Advisory Committee

Chair: Masayuki Izutsu (NICT, Japan)

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Takashi Yamamoto (NTT Corporation, Japan)
Kiyotoshi Yasumoto (Kyushu University, Japan)

*Members of the AP-MWP2006 Technical Program Committee would like to express their sincere appreciation to the Advisory Committee members listed on the left for their generous support in reviewing and commenting on the submitted papers to make the quality of the program very solid and high.

