

Global Symposium on Millimeter Waves 2009

GSMM2009

Program

April 20-22, 2009

Sakura Hall, Tohoku University

Katahira, Sendai, Japan



**IEEE MICROWAVE THEORY AND
TECHNIQUES SOCIETY**



RIEC International Symposium

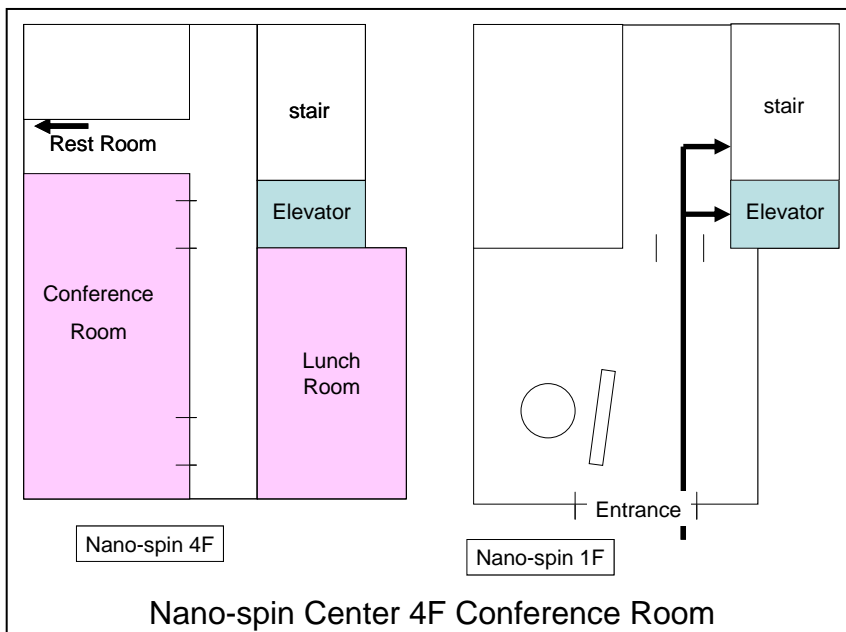
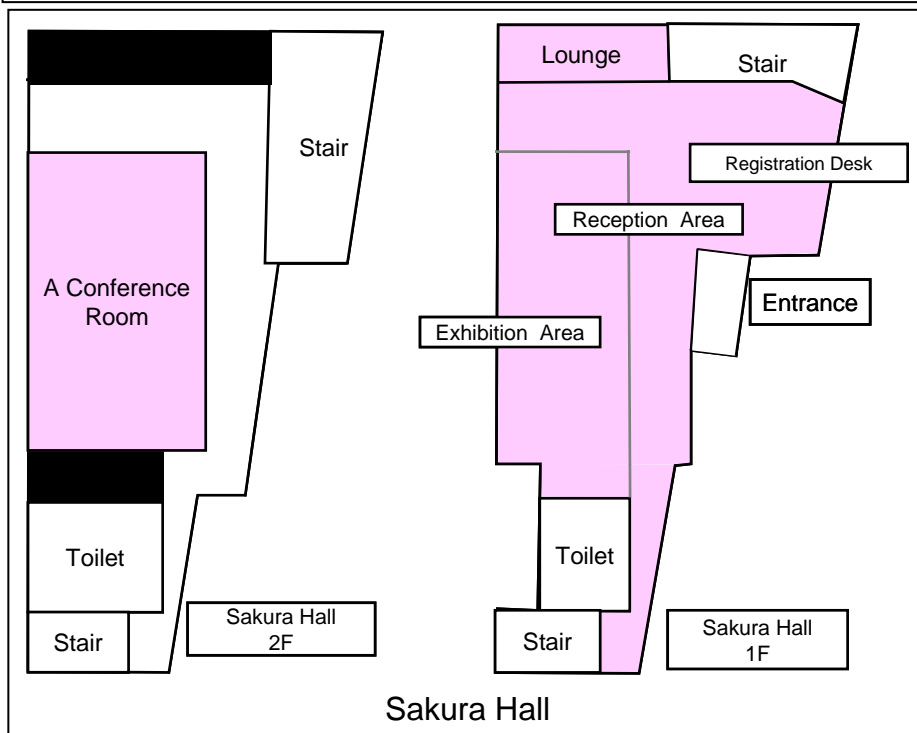
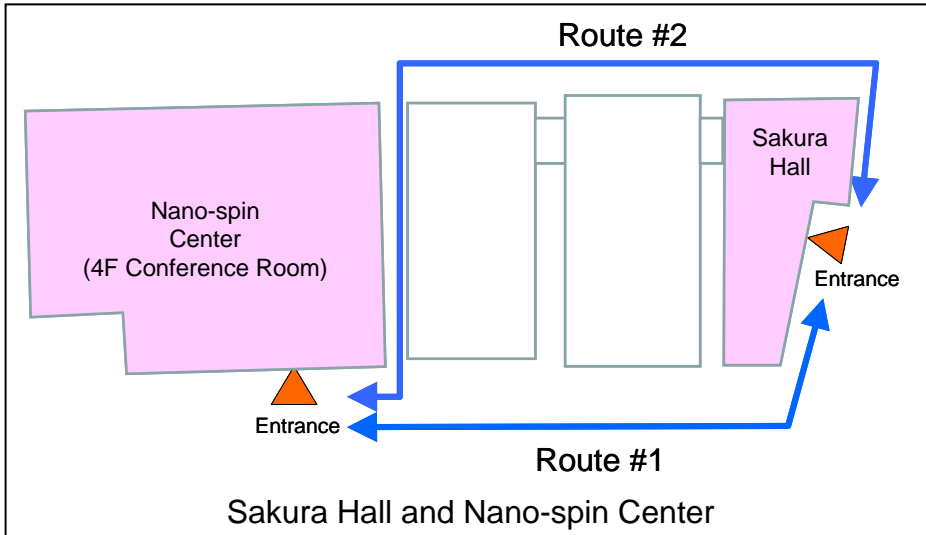
GSMM2009 Program at glance

Keynote speech: 50 min/Talk

Regular presentation: 25min/Talk (including Q&A)

	April 20			April 21			April 22	
9:30-10:00 (30 min.)	Opening (Sakura) Prof. T. Yoneyama, Tohoku Institute of Technology, Japan Prof. M. Yano, RIEC, Tohoku Univ. Prof. S. Kato, RIEC, Tohoku Univ.		8:30-9:20 (50 min.)	Keynote III (Sakura) Dr. Mike Marcus , USA		8:00-9:00	International Steering Committee Meeting (Sendai Kokusai Hotel) (Invited only)	
10:00-10:50 (50 min.)	Keynote I (Sakura) Prof. Jin-Koo Rhee Dongguk University, Korea		9:20-10:10 (50 min.)	Special session 1 Image sensing (Prof. H. Sato, Prof. K Sawaya, Prof. K. Mizuno)		9:20-10:10 (50 min.)	Keynote IV (Sakura) Prof. Ke Wu Ecole Polytechnique (University of Montreal), Canada	
10:50-11:15	Coffee Break		10:10-10:35	Coffee Break		10:10-10:35	Coffee Break	
11:15-12:05 (50 min.)	Keynote II (Sakura) Prof. K. Tsubouchi RIEC, Tohoku Univ.		10:35-12:15 (100 min.)	S-5 (Sakura) Passive Imaging and Rader	S-6 (Nano-spin) Compound Semiconductor (I)	10:35-12:15 (100 min.)	S-11 (Sakura) Compound Semiconductor (II)	S-12 (Nano-spin) Antenna (II)
12:05-13:30	Lunch		12:15-13:30	Lunch		12:15-13:30	Lunch	
13:30-15:35 (125 min.)	S-1 (Sakura) Propagation	S-2 (Nano-spin) CMOS Devices and Circuits (I)	13:30-15:35 (125 min.)	S-7 (Sakura) Special session 2 Wireless Personal Area Network (I)	S-8 (Nano-spin) Antenna (I)	13:30-15:35 (125 min.)	S-13 (Sakura) Millimeter-wave Systems (II)	S-14 (Nano-spin) Antenna (III)
15:35-16:00	Coffee Break		15:35-16:00	Coffee Break		15:35-16:00	Coffee Break	
16:00-17:40 (100 min.)	S-3 (Sakura) Millimeter-wave Systems (I)	S-4 (Nano-spin) CMOS Devices and Circuits (II)	16:00-17:15 (75 min.)	S-9 (Sakura) Special session 2 Wireless Personal Area Network (II)	S-10 (Nano-spin) Millimeter-wave Technologies	16:00-17:40 (100 min.)	S-15 (Sakura) Special session 3 Millimeter-wave Communications for 10Gbps HD-video Transmission	S-16 (Nano-spin) Millimeter-wave Filters
	18:00~19:30 Reception (Sakura Hall)			18:00 - Banquet (Sendai Kokusai Hotel) Banquet Speech Prof. Shingo Ohmori CTIF Japan, Aalborg University				

Conference Room Location Map



Message from GSMM2009 Honorary and General Chairs

On behalf of the Technical Program and Organizing Committees, we would like to welcome you to Global Symposium of Millimeter Waves 2009 (GSMM2009) in Sendai.

In the current global economic turmoil, paper submissions were slow and registration was slow as well. Although we all understand we have been living in a very difficult time, we could assemble an excellent symposium, with the help of lot of people, composed of 67 technical papers in two parallel sessions in three days. Among of them, three special sessions have been organized on “60 GHz Wireless PAN” which have been standardized at IEEE802.15.3c, “120 GHz high definition video transmission”, and “Millimeter wave image processing”. On top them, we are very pleased to have four keynote speakers from Korea, Japan, USA, and Canada to show millimeter wave technology and business trends.

We are sure these papers on state-of-the-art technologies, special sessions, and keynote speeches will give you “ONE STOP CATCHING” on millimeter wave technologies and business.

Please enjoy your attendance at GSMM2009 and your stay in Sendai.

Tsukasa Yoneyama
Honorary Chair

Shuzo Kato
General Chair

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Prof. Suguru Kameda, RIEC, Tohoku University, Japan

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Mr. Yuki Kawahara, MMEx Co., Japan
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Opening Address (9:30 – 10:00, April 20)

Sakura Hall 2F Conference Room

Prof. Tsukasa Yoneyama

Honorary Chair, GSMM2009

Prof. Masafumi Yano

Director, Research Institute of Electrical Communications,
Tohoku University

Prof. Shuzo Kato

General Chair, GSMM2009

KEYNOTE SPEECHES

Sakura Hall 2F Conference Room

Keynote I (10:00AM - 10:50AM, April 20)

MINT R&D Results on MMIC's and MIMIC's

Prof. Jin-Koo Rhee, MINT, Dongguk University, Korea

Abstract

Recently the demands of Millimeter-wave Monolithic Integrated Circuits (MIMIC's) are increasing for applications such as imaging and communication systems. Research activities on MIMIC's currently underway at the Millimeter-wave Innovation Technology Research (MINT) Center are presented. Main features of the developed library are discussed, and the design and the performance of various MIMIC's operating at V-band and W-band are shown. A novel microstrip transmission line structure based on the GaAs surface micromachining, the Dielectric-supported Air-gapped Microstrip Line (DAML), is proposed. This new structure reduces the dielectric loss and the fabrication complexity, and may lead to a compact 3-dimensional integration of active and passive elements.

Keynote II (11:15AM - 12:05PM, April 20)

Wireless Next Generation Network (NGN): Network and Device Technologies

Prof. Kazuo Tsubouchi, RIEC, Tohoku University, Japan

Abstract

The key to realizing the dependable wireless next-generation-network (DWN) is the seamless integration of several wireless systems. In this work, the project activity of information technology (IT) program (RR2002; Ministry of Education, Culture, Sports, Science and Technology of Japan) "Development of mobile internet terminal for next generation" will be presented. We have developed the following three technologies; (#1) Mobile broadband wireless access (MBWA) trial in Sendai city area for IEEE802.20, (#2) 324Mbit/s 5GHz-band wireless local area network (LAN) terminal for IEEE802.11n, and (#3) 10mm-square-size 1Gbit/s 60GHz-band wireless personal area network (PAN) terminal using 3-dimensional system-in-package (3-D SiP) technology for IEEE802.15.3c.

Keynote III (8:30AM - 9:20AM, April 21)

Spectrum Policy Issues for Millimeterwave Systems: Should Early 20th Century Regulatory Concepts Apply to 21st Century Technology?

Dr. Michael Marcus, Director, Marcus Spectrum Solutions LLC, USA

Abstract

Many of the basic concepts of spectrum policy and regulation were developed in the aftermath of the 1912 sinking of the Titanic. These policies have served us well for decades, but the physics of millimeterwave (mmW) systems is very different than that of lower bands with respect to both wavelength and atmospheric absorption. Pioneering work by the UK regulator 20 years ago showed that the high absorption of the 60 GHz oxygen window might be viewed not as a limitation but as a benefit both enabling high frequency reuse and eliminating the need for licensing. More recently the US regulator has adopted the concept of "licensing light" for regulating bands at 70, 80 and 90 GHz. This talk with review how the physics of these bands raises new options for spectrum policy makers and technology developers.

Keynote IV (9:20AM - 10:10AM, April 22)

[TBD]

Prof. Ke Wu, Ecole Polytechnique (University of Montreal), Canada

Abstract

BANQUET SPEECH

Sendai Kokusai Hotel (April 21)

International Collaboration for R&D of Ubiquitous Networked Society

Prof. Shingo Ohmori, CTIF Japan, Aalborg University

REGULAR PRESENTATIONS

April 20, 13:30-15:35

Session 1: Propagation (Sakura Hall)

Session Chair: Prof. Masahiko Umehira, Ibaraki University, Japan

- 1) Reflection Loss Dependency upon Various Wall Conditions at Quasi-millimeter Wave Band
Naoto Takahashi, Ryutaro Ohmoto, and Masashi Nakatsugawa
Nippon Telegraph and Telephone Corporation, Japan
- 2) Propagation Measurement of 25GHz FWA System Using Tokyo Tech Ookayama Campus
Millimeter-Wave Model Network
Takuichi Hirano, Tetsuya Sugiyama, Jiro Hirokawa, Makoto Ando, Hitoshi Nagahori*, Kazuo Saito*,
Toru Taniguchi*, Yoshinari Koyama**, and Izumi Kurosawa**
Tokyo Institute of Technology, Japan
*: Japan Radio Co., Ltd., Japan
**: WILLCOM, Inc., Japan

Session 2: CMOS Devices and Circuits (I) (Nano-spin 4F Conference Room)

Session Chair: Dr. Ahmet Oncu, The University of Tokyo, Japan

- 1) Highly Miniaturized On-chip RF Components Employing Periodic Ground Structure for Application to Millimeter-wave RFIC/MMIC
Young Yun, Se-Ho Kim, Young-Bae Park, Youb kang, Hae-Cheon Kim*, Hong-Gu Ji*,
Jae-Kyung Mun*, Woo-Jin Chang*, and Ho-Kyun Ahn*
Korea Maritime University, Korea
*: Electronics and Telecommunications Research Institute, Korea
- 2) A 24-GHz High-Isolation High-Linearity CMOS T/R Switch
Chen-Yu Ou, Hong-Ru Lin, Huey-Ru Chuang, and Tzuen-His Huang
National Cheng Kung University, Taiwan
- 3) A 24-GHz High-Isolation CMOS T/R Switch with Leakage Cancellation Technology
Hong-Syuan Shen, Chen-Yu Ou, Hong-Ru Lin, Tzuen-His Huang, and Huey-Ru Chuang
National Cheng Kung University, Taiwan
- 4) A Low Phase Noise 10-GHz VCO Using Dual-Transformer Coupling Technology
Wu-Shiung Feng, Shih-Chi Lai, Chien-Cheng Wei, Hwang-Cherng Chow, and Hui-Chen Hsu
Chang Gung University, Taiwan
- 5) A 35-45-GHz CMOS Amplifier with Defected Ground Structure Matching Networks
Jeng-Han Tsai, Chih-Cheng Wang, and Kun-Yao Ting
Yean Ze University, Taiwan

Coffee Break (15:35 – 16:00)

April 20, 16:00-17:40

Session 3: Millimeter-wave Systems (I) (Sakura Hall)

Session Chair: Prof. Toshihiro Nomoto, Tohoku Institute of Technology, Japan

- 1) High-Speed BPSK Modulator and Demodulator for 60GHz Band by Using NRD-Guide
Yuki Kawahara, Hirokazu Sawada*, and Tsukasa Yoneyama*
MMEx, Inc., Japan
*: Tohoku Institute of Technology, Japan
- 2) 12.1mW 10Gbps CMOS Pulse Transmitter for 60GHz Wireless Communication
Ahmet Oncu, Shunsuke Ohashi, and Minoru Fujishima
The University of Tokyo, Japan
- 3) A Flexible Performance Improvement Technique Using Overlap FDE for Single Carrier Based Millimeter Wave WPAN
Masahiro Umehira, Takehiko Watanabe, and Hirokazu Sawada*
Ibaraki University, Japan
*: Tohoku Institute of Technology, Japan
- 4) Performance Comparison of OFDM and SC-FDE Employing Decision-Directed Phase Noise Compensation in 60-GHz Millimeter-Wave Systems
Satoshi Suyama, Junichi Onodera, Hiroshi Suzuki, and Kazuhiko Fukawa
Tokyo Institute of Technology, Japan

Session 4: CMOS Devices and Circuits (II) (Nano-spin 4F Conference Room)

Session Chair: Dr. Ichihiko Toyoda, Nippon Telegraph and Telephone Co., Japan

- 1) A V-band CMOS Direct Injection-Locked Frequency Divider Using Forward Body Bias Technology
Yi Tsung Chen, Huey-Ru Chuang, and T.-H. Huang
National Cheng Kung University, Taiwan
- 2) Low Noise CMOS Phased Array for Millimeter-Wave Wireless Applications
Mohammad Fakharzadeh, M. R. Nezhad-Ahmadi, B. Biglarvegian, and Safieddin Safavi-Naeini
University of Waterloo, Canada
- 3) 24-52GHz, 0.03mm² Broadband Balun Using Defected Ground Structure for Si-based RF IC Applications
Jiang-Tao Sun, Qing Kiu, Toshihiko Yoshimasu, and Haiwen Liu*
Waseda University, Japan
*: Chinese Academy of Science, China
- 4) Passive Device Characterization for 60-GHz CMOS Power Amplifiers
Kenichi Okada, Kota Matsushita, Naoki Takayama, Shogo Ito, Ning Li, and Akira Matsuzawa
Tokyo Institute of Technology, Japan

Reception (18:00 – 19:30)

April 21, 9:20-10:10

Special Session 1 (Sakura Hall)

Passive Millimeter Wave Imaging Technology

Hiroyasu Sato, Kunio Sawaya, and Koji Mizuno

Tohoku University, Japan

Coffee Break (10:10 – 10:35)

April 21, 10:35-12:15

Session 5: Passive Imaging and Rader (Sakura Hall)

Session Chair: Prof. Hiroyasu Sato, Tohoku University, Japan

- 1) An Image Restoration Method for Reducing De-correlation Effects in Interferometric Synthetic Aperture Radiometer
Hu Anyong, Miao Jungang, and Xue yong
Beijing University of Aeronautics and Astronautics, China
- 2) Characteristic Analysis of Near Range Millimeter Wave Passive Imaging
Wang Ben-qing and LI Xing-guo
Nanjing University of Science & Technology, China

Session 6: Compound Semiconductor (I) (Nano-spin 4F Conference Room)

Session Chair: Dr. Keren Li, NICT, Japan

- 1) Fabrication of W-band GaAs Gunn diodes
Mi-Ra Kim, Seong-Dae Lee, Jin Koo Rhee, Chang-Woo Lee, Yeon-Sik Chae,
Jea-Hyun Choi, and Wan-Joo Kim
Millimeter-wave Innovation Technology research center (MINT), Dongguk University, Korea
- 2) Comparative Study of Uniform and Hyperabrupt Doped Varactor Diodes on GaAs Substrate for VCO Application
Sun-Woo Park, Seok Gyu Choi, Yong Hyun Beak, Mi-Ra Kim, Won-Young Uhm*, Wan-Joo Kim*,
Eung-Ho Rhee**, and Jin-Koo Rhee
Millimeter-wave Innovation Technology research center (MINT), Dongguk University, Korea
*: Agency for Defense development, Korea
**: Suwon University, Korea
- 3) A 77 GHz Radar VCO Using a Three-Dimensional x8 Multiplier MMIC
Tsuneo Tokumitsu, Osamu Baba, Kenshi Naito, and Yuichi Hasegawa
Eudyna Devices Inc., Japan
- 4) Compact 94 GHz Waveguide Voltage Controlled Oscillator Module Using InP Gunn Diode
Chang-Woo Lee, Dong-Sik Ko, Sang-Jin Lee, Young-Hyun Baek, Sun-Woo Park, Seung-Hyun Hong,
Yeon-Sik Chae, Wan-Joo Kim, Jae-Hyun Choi, and Jin-Koo Rhee
Millimeter-wave Innovation Technology research center (MINT), Dongguk University, Korea

Lunch (12:15 – 13:30)

April 21, 13:30-15:35

Special Session 2 (Session 7): Wireless Personal Area Network (I) (Sakura Hall)

Session Chair: Prof. Eisuke Kudoh, Tohoku Institute of Technology, Japan

- 1) Millimeter Wave (60 GHz) Wireless PAN Standardization Activities
Shuzo Kato, Hiroshi Harada*, Fumihide Kojima*, Ryuhei Funada*, Chang Woo Pyo*, Zhou Lan*, Chin-Sean Sum*, Tuncer Baykas*, Junyi Wang*, and Mohammad Azizur Rahman
Tohoku University, Japan
*: National Institute of Information and Communications Technology (NICT), Japan
- 2) PHY Design for IEEE802.15.3c Wireless Personal Area Network
Hiroshi Harada, Ryuhei Funada, Tuncer Baykas, Chin-Sean Sum, M Azizur Rahman, Junyi Wang, and Shuzo Kato
National Institute of Information and Communications Technology (NICT), Japan
*: NICT/Tohoku University, Japan
- 3) MAC Protocol Design and Performance Study for 802.15.3c Millimeter-wave WPAN
Chang Woo Pyo, Zhou Lan, Fumihide Kojima, Hiroyuki Nakase*, Hiroshi Harada, and Shuzo Kato
National Institute of Information and Communications Technology (NICT), Japan
*: Tohoku University, Japan
- 4) Propagation Characteristics of Millimeter Wave WPAN
Katsuyoshi Sato, Hirokazu Sawada*, Ryuhei Funada, Hiroshi Harada, and Shuzo Kato**
National Institute of Information and Communications Technology (NICT), Japan
*:Tohoku Institute of Technology, Japan
**: Tohoku University, Japan

Session 8: Antenna (I) (Nano-spin 4F Conference Room)

Session Chair: Prof. Yuichi Kimura, Saitama University, Japan

- 1) 60 GHz Band Planar Monopole Antenna Using Organic Substrates for Ultra-Small WPAN Modules
Satoshi Yoshida, Hiroshi Oguma, Suguru Kameda, Tadashi Takagi, and Kazuo Tsubouchi
Tohoku University, Japan
- 2) Radiation Characteristics of Two Adjacent Slots in a Parallel Plate Waveguide Filled with a Dielectric
Kazuo Nishimura
Ryukoku University, Japan
- 3) Feasibility of a Dipole Antenna on a Thick Resin Layer on the Back Side of a Silicon Chip at 60GHz
Jiro Hirokawa, Kenta Kimishima, Makoto Ando, and Yasutake Hirachi*
Tokyo Institute of Technology, Japan
*: Ammsys Inc., Japan
- 4) Characteristics of Microstrip Components on Teflon Substrate at Millimeter-wave Frequencies
Jing Gao, Keren Li, and Hiroshi Harada
National Institute of Information and Communications Technology, Japan

Coffee Break (15:35 – 16:00)

April 21, 16:00-17:15

Special Session 2 (Session 9): Wireless Personal Area Network (II) (Sakura Hall)

Session Chair: Prof. Eisuke Kudoh, Tohoku Institute of Technology, Japan

- 1) Robust Single Carrier Millimeter Wave System Design
Tuncer Baykas, Ryuhei Funada, Chin-Sean Sum, Junyi Wang, M Azizur Rahman, Hiroshi Harada, and Shuzo Kato*
National Institute of Information and Communications Technology (NICT), Japan
*: Tohoku University
- 2) Intersystem Coexistence and Cooperation Mechanism for IEEE 802.15.3c Millimeter-wave WPAN
Chin-Sean Sum, Mohammad Azizur Rahman, Tuncer Baykas, Zhou Lan, Chang Woo Pyo, Junyi Wang, Ryuhei Funada, Fumihide Kojima, Hiroshi Harada, and Shuzo Kato
National Institute of Information and Communications Technology (NICT), Japan
- 3) Improvement of Header Protection with a Concatenated Code for 60GHz WPAN Systems
Junyi Wang, Ryuhei Funada, Azizur Rahman, Chin-Sean Sum, Zhou Lan, Tuncer Baykas, Hiroshi Harada, and Shuzo Kato
National Institute of Information and Communications Technology (NICT), Japan

Session 10: Millimeter-wave Technologies (Nano-spin 4F Conference Room)

Session Chair: Prof. Suguru Kameda, Tohoku University, Japan

- 1) Unilateral Fin-line Taper-used 94GHz Coplanar Waveguide-to-Rectangular Waveguide Transition and Flip Chip Bonding with MMIC Mixer
Seung Hyun Hong, Sang-Jin Lee, Young-Hyun Baek, Sung-Woon Moon, Tae-Jong Baek, Dong-Sik Ko, Chang-Woo Lee, Yeon-Sik Chae, and Jin Koo Rhee
Millimeter-wave Innovation Technology research center (MINT), Dongguk University, Korea
- 2) High-Frequency Characterization and Circuit Modeling of Via in Multi-Layered IC Package
Hyewon Kim, and Yungseon Eo
Hanyang University, Korea
- 3) A Continuous Vector Fitting Method for Parameters Extraction of Defected Ground Structure in Microwave Circuits
Lin-Sheng Wu, Feng-Yu Hao, Wen-Yan Yin, Xi-Lang Zhou, and Min Tang
Shanghai Jiao Tong University, China

April 21, 18:00

Banquet

at Sendai Kokusai Hotel

(Drink Bar will open from 17:30)

April 22, 10:35-12:15

Session 11: Compound Semiconductor (II) (Sakura Hall)

Session Chair: Dr. Tsuneo Tokumitsu, Eudyna Device Inc., Japan

- 1) InP-DHBT Switched Emitter Follower for Track-and-Hold Amplifier
Yves Bouvier^{*,**}, Achour Ouslimani^{**}, Agnieszka Konczykowska^{*}, and Jean Godin^{*}
^{*}: Alcatel-Thales III-V Lab, France
^{**}: ENSEA, France
- 2) Characteristics of a Wide-Band, High Gain MMIC LNA Operating at the Ka-Band
Harunobu Seita, Kenjiro Nishikawa^{*}, and Shigeo Kawasaki^{**}
Kyoto University, Japan
^{*}: NTT Network Innovation Laboratories, NTT Corporation, Japan
^{**}: The Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, Japan
- 3) 60GHz-band GaAs MMIC Power Amplifier for Broadband Communication System
Kazutomi Mori, Hidenori Yukawa, Satoshi Miho, Akira Inoue, and Moriyasu Miyazaki,
Mitsubishi Electric Corporation, Japan
- 4) Design and Implementation of Millimeter Wave Low Noise Amplifier
Pinpin Yan, Jixin Chen, and Wei Hong
State Key Laboratory of Millimeter Waves, School of Information Science and Engineering, Southeast University, P. R. China

Session 12: Antenna (II) (Nano-spin 4F Conference Room)

Session Chair: Prof. Takuichi Hirano, Tokyo Institute of Technology, Japan

- 1) System Requirements, Design and Implementation Considerations of Antennas for 60GHz-Millimeter-wave Wireless Personal Area Network System
Keren Li, Jing Gao, Kyoichi Iigusa, Hiroshi Harada, and Shuzo Kato^{*}
National Institute of Information and Communications Technology (NICT), Japan
^{*}: Tohoku University, Japan
- 2) Directive Single Lobe Radiation Pattern Proposal Based on the Complex Source Point Method
Raul Mahillo Isla, Maria Jesus Gonzalez Morales, and Carlos Dehesa Martinez
Universidad de Valladolid, Spain
- 3) A Two-Layered Three-Patch Wideband/High-Gain Antenna and Its Application to 60GHz-Millimeter-wave Wireless Personal Network
Keren Li, Tomoaki Sato, Jing Gao, Hiroshi Harada, and Shuzo Kato^{*}
National Institute of Information and Communications Technology (NICT), Japan
^{*}: Tohoku University
- 4) 30 GHz and 77 GHz Circularly Polarized Traveling-Wave Substrate Integrated Waveguide Antennas
Hoda Nematollahi, Halim Boutayeb, and Ke Wu
École Polytechnique de Montréal, Canada

Lunch (12:15 – 13:30)

April 22, 13:30-15:35

Session 13: Millimeter-wave Systems (II) (Sakura Hall)

Session Chair: Prof. Toshiyuki Yakabe, The University of Electro-Communications, Japan

- 1) High Data Rate Cross-Polarized Millimeter-Wave Transmission Link
Nazih Khaddaj Mallat, Emilia Moldovan, Ke Wu, and Serioja Ovidiu Tatu
Institut National de la Recherche Scientifique – INRS-EMT, Canada
École Polytechnique de Montréal, Canada
- 2) Path Diversity Effect in Inter-Vehicle Multi-hop Radio on Radio Relay Networks
Takeshi Higashino, Atsushi Katayama, Katsutoshi Tsukamoto, and Shozo Komaki
Osaka University, Japan
- 3) Towards Multi-Gigabit Ad-hoc Wireless Networks in the E-band
Val Dyadyuk and Y Jay Guo
CSIRO ICT Centre, Australia
- 4) A 44-GHz Self-Heterodyne System Using Gilbert-cell Type Detector
Jeng-Han Tsai and Chih-Cheng Wang
Yuan Ze University, Taiwan

Session 14: Antenna (III) (Nano-spin 4F Conference Room)

Session Chair: Yuki Kawahara, MMEx, Inc., Japan

- 1) Electrical Performance Estimations of the Shaped Dielectric Lens Antenna
Yosuke Tajima, Shinji Kamada, Naobumi Michishita, and Yoshihide Yamada
National Defense Academy, Japan
- 2) Conical Horn Antenna with Choke Structure for Achieving Wide Beamwidth at 60GHz
Hirokazu Sawada, Kaoru Yaginuma, Yuki Kawahara, and Tsukasa Yoneyama
Tohoku Institute of Technology, Japan
- 3) New Plastic Waveguide Antenna (RLSA) Using a Nano-imprinting Technology
Hiroyuki Awano, Tamotsu Iida, Masaki Fukuhara, Yasushi Miyauchi, Takeshi Uchida,
Masafumi Yoshihiro, and Jiro Hirokawa*
R & D division, Hitachi Maxell Ltd., Japan
*: Tokyo Institute of Technology, Japan
- 4) Measurement of the Leakage of Electromagnetic Field Distribution over 2D Communication System
Azman Osman Lim, Hiroto Itai*, Hiroyuki Shinoda**, and Bing Zhang
National Institute of Information and Communications Technology (NICT), Japan
*: Cellcross Co. Ltd., Japan
**: The University of Tokyo, Japan
- 5) Co-designed Wideband Antenna-filter Module
Zhou Jiemei, Wang Jun, and Wang Weidong
University of Science and Technology of China, China

Coffee Break (15:35 – 16:00)

April 22, 16:00-17:40

Special Session 3 (Session 15): Millimeter-wave Communications for 10Gbps HD Video Transmission (Sakura Hall)

Session Chair: Dr. Yuichi Kado, Nippon Telegraph and Telephone Co., Japan

- 1) Use of Millimeter-wave Mobile Camera in 59th NHK Red and White Year-End Song Festival
Shinichi Suzuki, Takayuki Nakagawa, and Tetsuomi Ikeda
NHK Science & Technical Research Laboratories, Japan
- 2) Compact, Low-power, 120-GHz-band Wireless System for 10-Gbit/s Data Transmission
Naoya Kukutsu, Hiroyuki Takahashi, Akihiko Hirata, Toshihiko Kosugi*,
Koichi Murata*, and Yuichi Kado
NTT Microsystem Integration Laboratories, Japan
*: NTT Photonics Laboratories, Japan
- 3) Transmission Characteristics of 120-GHz-band Wireless Link with Forward Error Correction
Akihiko Hirata, Hiroyuki Takahashi, Toshihiko Kosugi, Naoya Kukutsu, and Yuichi Kado
NTT Microsystem Integration Laboratories, Japan
- 4) Transmission Trial Using 120GHz Wireless System in Beijing Olympic Games 2008
World first trial for using 120GHz wireless system in the production field
Hiroshi Nishikawa, Akihiko Irino, Toshihiro Nakayama, Naohiro Sudo,
Hiroyuki Takahashi*, Akihiko Hirata*, Naoya Kukutsu*, Yuichi Kado*
FUJI TELEVISION NETWORK, INC., Japan
*: NTT Microsystem Integration Laboratories, Japan

Session 16: Millimeter-wave Filters (Nano-spin 4F Conference Room)

Session Chair: Prof. Takashi Shimizu, Utsunomiya University, Japan

- 1) A CPW CMOS Bandpass Filter
Lung Kai Yeh, Cheng-Ying Hsu, Yu-Chen Chen, Huey-Ru Chuang, and Chu-Yu Chen*
National Cheng Kung University, Taiwan
*: National University of Tainan, Taiwan
- 2) Design of Dual-passband Substrate Integrated Waveguide Filters Using LTCC Technology
Liang Zhou, Wen-Yan Yin, Junfa Mao, and ZhuovWu*
Shanghai Jiao Tong University, P. R. China
*: Shanghai University, P. R. China
- 3) Transient Response Characterization of Ultra-Wideband Bandpass Filters Illuminated by a Wideband EMP
Qi-Feng Liu, Wen-Yan Yin, and Junfa Mao
Shanghai Jiao Tong University, China
- 4) A Dual-Mode Patch Filter in Ka-band with LTCC Technology
Runqi Zhang, Bo Yan, and Zhigang Wang
University of Electronic Science and Technology of China, China

EXHIBITION

Agilent Technologies: <http://www.agilent.com/>

AmTechs Co.: <http://www.amtechs.co.jp/>

Anritsu Co.: <http://www.us.anritsu.com/main.aspx>

Kozo Keikaku Engineering Inc.: <http://www.kke.co.jp/en/>

Netwell Co. : <http://www.netwell.co.jp/en/>

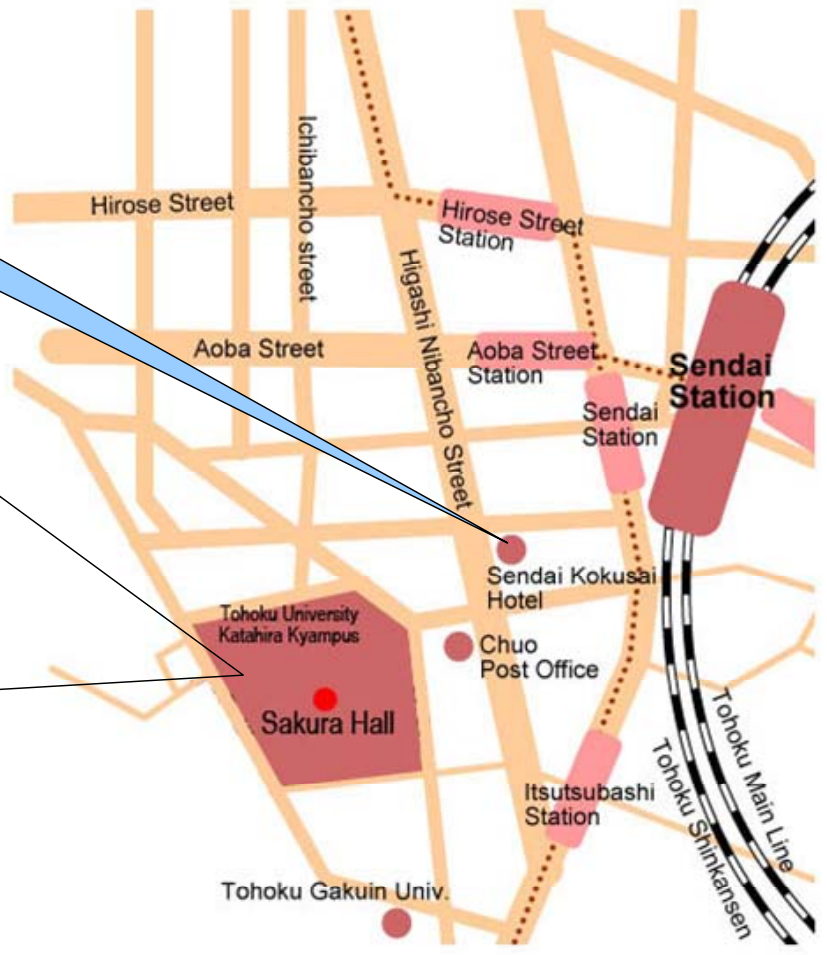
Riken Dengu Seizo Co., Ltd.: <http://www.rikendengu.co.jp/>

Plum-system Inc.: <http://www.plum-syst.com/>

RFTestLab Co., Ltd.: <http://www.rftestlab.com/>

Banquet
Sendai Kokusai Hotel

Conference Site: Sakura Hall



From SENDAI Station to Sakura Hall, Katahira Campus

1) About 15 minutes on foot

2) About 5 minutes by taxi

Print this page and show it to taxi driver.

タクシーの運転手さんへ

東北大学の片平キャンパス、北門へ行ってください。
北門を入れて南方向へ約 200m 直進、右手の建物が目的地です。
GSMM2009 の看板が見えますので、その前で止まってください。