Advance Programme

Fourth International Symposium on Acoustic Wave Devices for Future Mobile Communication Systems

Sponsored by Chiba University

Third International Workshop on Piezo-Devices Based on Latest MEMS Technologies

Sponsored by Standardization Committee for MEMS Devices for Frequency Control and Selection (Chair K.Ohwada)

In collaboration with
Japanese National Committee of TC49 in IEICE
IEEE Ultrasonics, Ferroelectrics and Frequency Control Society Japan Chapter,
Micromachine Center

Wednesday, 3rd - Friday, 5th March, 2010

Keyaki Hall, Chiba University, Japan

Sponsored by Chiba University

http://echo.usl.chiba-u.ac.jp/~ken/symp2010.html

Wednesday, 3rd March

Opening Remarks

9:10 M.Yamaguchi, Chiba University
Y.Sekine, Nihon University

1A Opening Talk

9:20 Highly Flexible Digital Front-End Enhanced CMOS-Based RF Transceivers
L.Maurer, R.Stuhlberger, C.Wicpalek, G.Haberpeuntner and G.Hueberet, DICE GMBH

1B Measurement Techniques for Device Characterization

10:15 Considerations on Measurement Setup for Second-Order Nonlinearity in Radio-Frequency Bulk Acoustic Wave Duplexers
Y.Wang, F.Thalmayr, N.Wu and K.Hashimoto, Chiba University

10:40 Measurement of Frequency Characteristics for GHz band Crystal Resonators
Y.Sakuta, H.Iijima, T.Imaike and Y.Sekine, Nihon University

11:05 Phase-Sensitive and Fast-Scanning Laser Probe System for RF SAW/BAW Devices
N.Wu, K.Hashimoto, K.Kashiwa, T.Omori and M.Yamaguchi, Chiba University

11:30 Visualization of microacoustic waves by laser interferometry
G.Fischerauer and A.Gollwitzer, University of Bayreuth

1C Quartz Resonator and Oscillators

13:10 A Review of the Recent Development of Temperature Stable Cuts of Quartz for SAW Applications
C.S.Lam, Epson Electronics America, Inc.

13:35 Q, Activity Dips and Thermal Analysis of Resonators
Y.K.Yong, Rutgers University

14:00 Miniaturized Quartz Vibratory Gyro Sensor
T.Kikuchi, Epson Toyocom, Co. Ltd.

14:25 Experimental Study of CPT Based Atomic Clocks for Low-Power Operation
S.Goka, Tokyo Metropolitan University

1D SAW Sensors

15:15 Applications of Wireless Temperature Measurement using SAW Resonators
D.Stevens[1], S.Sabah[1], J.Andle[2] and B.Wall[1], [1]Vectron International, [2]SenGenuity

15:40 Liquid-Phase SH-SAW Immunoassay Sensor
H.Yatsuda, T.Kogai, N.Yoshimura and T.Mori, Japan Radio, Co. Ltd.

16:05 Shear Horizontal Surface Acoustic Wave Sensors for Liquids
J.Kondoh, Shizuoka University

16:30 Selective Gas Detection using Polyaniline/Tungsten Oxide Nanocomposite Interfaces and Surface Acoustic Wave Sensors
C.Y.Shen, Y.H.Cheng and S.H.Wang, I-Shou University

Thursday, 4th March

2A Recent RF BAW Technologies

9:00 Progress and BreakThroughs on Coupled Resonator Filter using FBAR Technology

R.Ruby, Avago Technologies

9:25 RF filters for Converged Frontend Architectures in Multi-Standard Phones

R.Aigner, Triquint Semicnoductor

9:50 Development of Radio Frequency Filters Employing Air-Gap type Thin Film Bulk Acoustic Resonators

M.Ueda, M.Hara, T.Yokoyama, T.Sakashita, T.Nishihara and Y.Satoh, Fujitsu Laboratories

2B Design of RF BAW Devices

10:40 Progress on Zero Drift Resonators for Quartz Replacement

R. Ruby, Avago Technologies

11:05 Fast Evaluation of Lamb Wave Scattering by Time Harmonic FEM simulation

F.Thalmayr, K.Hashimoto, T.Omori and M.Yamaguchi, Chiba University

11:30 Numerical Modelling of BAW Filters and Duplexers

S.Marksteiner, A.Link, A.Hagelauer, N.Selimovic and B.Bader, EPCOS AG

2C Integration of RF SAW/BAW Devices

13:10 Integration Concepts for SAW Duplexers for Multimode and Multiband RF Front-end Modules

R.D.Koch[1], J.E.Kiwitt[1], F.M.Pitschi[1], K.Wagner[1] and R.Weigel[2],
[1]EPCOS AG, [2]University of Erlangen-Nuremberg

13:35 MEMS-Based Acoustic Devices for Multiband Wireless Communication

S.Tanaka, Tohoku University

13:50 Contour-Mode AlN Resonator with Large Coupling Factor

A.Isobe, Hitachi Central Research Labs

14:15 High Performance MEMS Oscillators for Communications Applications

J.H.Kuypers, G.Zolfagharkhani, A.Gaidarzhy, R.Rebel, D.M.Chen, K.J.Schoepf,
P.Mohanty and M.Crowley, Sand 9, Inc.

2D Thin Films and Processing

15:15 New Generation of S-Gun Magnetron for AlN Reactive Sputtering

V.Felmetsger and P.Laptev, Tegal Corp.

15:40 Fundamentals of Thin Film Deposition Process for Perovskite Piezoelectric Materials

K.Wasa, Kyoto University

16:05 Ultrasonic Micro-Spectroscopy Characterization of ZnO

J.Kushibiki, Y.Ohashi, and M.Arakawa, Tohoku University

16:30 Various Piezoelectric Properties of $KNbO_3$ Based Ferroelectric Ceramics

H.Nagata, K.Hikita, Y.Hiruma and T.Takenaka, Tokyo University of Science

Friday, 5th March

3A Extremely Wideband SAW Devices

9:00 Ultra wideband SAW resonator and its application to tunable filter

Michio Kadota, Tetsuya Kimura and Yasuyuki Ida, Murata MFG Co.Ltd.

9:25 A Wideband Multi-Mode SAW Filter Employing Pitch Modulated IDTs on Cu-Grating/15°YXLiNbO$_3$-Substrate Structure

K.Hashimoto, T.Miyamoto, K.Shimada, T.Omori and M.Yamaguchi, Chiba Univerisity

9:50 A Consideration for Realizing the Tunable Ladder-type Acoustic Filter

T.Komatsu, K.Hashimoto, T.Omori and M.Yamaguchi, Chiba University

3B Modern SAW Duplexers

10:40 Realization of Small and Low Profile Duplexer Using a CSSD Packaging Technique

T.Nishizawa, M.Tajima, S.Ono and O.Kawachi, Fujitsu Media Devices, Ltd.

11:05 Novel Spurious Suppression Technique of SAW Resonator on SiO_2/Al/$LiNbO_3$ Structure

H.Nakamura, H.Nakanishi, R.Goto, and T.Tsurunari, Panasonic Electronic Devices, Co. Ltd.

11:30 Miniature Balanced SAW Duplexers using CSP Technology for UMTS and LTE

S.Yoshimoto, T.Kawamoto, Y.Takahashi and Y.Yamamoto, Nihon Dempa Kogyo, Co. Ltd.

3C Quasi-SAW Devices

13:10 Development & Design of BIDT SAW Devices

B.Abbott, R.Aigner, A.Chen, K.Gamble, J.Gratier, T.Kook
and M.Solal, Triquint Semiconductor, Ltd.

13:35 Isolated Waves as an Approach to Wafer Level Packaging

S.Zhgoon[1] and K.Bhattacharjee[2], [1]MPEI Moscow, Russia, [2]RFMD

13:50 Leaky-SAW Properties on Reverse-Proton-Exchanged $LiNbO_3$

S.Kakio, H.Shimizu and Y.Nakagawa, University of Yamanashi

14:15 Acoustic Wave Devices composed of Periodical Poled Z-cut $LiTaO_3$ Plate

M.Kadota[1], T.Ogami[1], K.Yamamoto[1] and Y.Cho[2], [1]Murata MFG Co.Ltd., [2] Tohoku University

3D New Processes for High Performance SAW/BAW Devices

15:15 Quantitative Raman Spectroscopy of Piezoelectric Materials and Devices

G.Pezzotti, Kyoto Institute of Technology

15:40 Some Issue on Preparation of Diamond Films for SAW Device Application

I.N.Lin, Tamsui University

16:05 Fabrication of SHF Range SAW Devices on AlN/Diamond-Substrate

T.Omori, A.Kobayashi, Y.Takagi, K.Hashimoto and M.Yamaguchi. Chiba University

16:30 Utilization of Phononic Reflectors in Acoustic Wave Resonators

T.T.Wu[1], J.H.Sun[1], J.C.Hsu[2] and W.S.Wang[1], [1]National Taiwan University,
[2]National Yunlin University of Science and Technology

Closing Address

16:55 K.Hashimoto, Chiba University

REGISTRATION & FEES

All Symposium participants should register and are requested to wear badges given at the registration desk. The Symposium fee includes admittance to all technical sessions and the evening events, and a copy of the Symposium Proceedings and the CD-ROM.

Symposium Fees:

Advance	**14,000**	**yen**
On-Site	**18,000**	**yen**
Students & Retirees	**4,000**	**yen**

For Non-Japanese residents, the reduced rate is applied if the advance registration form on the web page is received (by either fax or post) by **Saturday, 13th February, 2010**. We strongly remind you that the remittance should **NOT** be mailed with the advance registration form, and that the corresponding amount should be paid in cash (Japanese Yen only) at the registration desk. Plastic money and cheques of any kind are **NOT** accepted.
Mailing address for the advance registration is:

Ms Hideko Kosami
Symposium Secretariat
Department of Electrical and Electronic Engineering
Graduate School of Engineering
Chiba University
1-33 Yayoi-cho, Inage-ku, Chiba-shi 263-8522, Japan
Fax: ++81-43-290-3320
e-mail: kosami@office.chiba-u.jp

EVENING EVENTS

Welcome Reception (Wednesday, 3rd March, 17:00 - 19:30)
The symposium cordially invites all attendees.

ACCOMMODATION

Mitsui Garden Hotel Chiba offers group discount for the Symposium attendees and bus services every morning to the Symposium site. The hotel is one of the nicest ones in Chiba City, and is located in a walking distance from JR Chiba station. Please contact the hotel directly and book yourself/yourselves.

Mitsui Garden Hotel Chiba
http://www.gardenhotels.co.jp/eng/chiba.html
1-11-1 Chuo, Chuo-ku, Chiba-shi 260-8626 Japan
Tel : ++81-43-224-1131 Fax : ++81-43-224-1156
Mail: chi_front@gardenhotels.co.jp

Room Rate per day (Free Internet Access, Tax & Service Charge Inclusive)

Single Room	6,900 Yen
Double or Twin Room	11,300 Yen
Double or Twin Room single use	8,800 Yen

To obtain reduced rate, please indicate attendance to "Chiba University Symposium" when booking.

PASSPORT AND VISA

Every foreign visitor entering Japan should possess a valid passport. Visitors from countries whose citizens must have a visa should apply to Japanese Embassy/Consulate near by in their respective country. For further details, please contact Japanese Embassy/Consulate or your travel agent in your country.

MESSAGE

Messages during the symposium may be relayed to attendees by
Mail: kosami@office.chiba-u.jp Fax: ++81-43-290-3320

Transportation to Chiba City and Chiba University

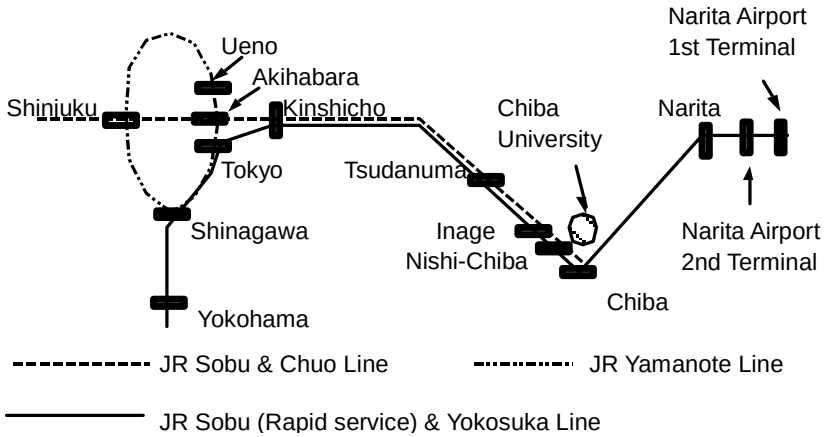
From Tokyo/Narita International Airport:

Take a rapid service train of JR Sobu line at the platform in underground level of the airport and get off at Chiba Station (circa 40 min.).
Attention! Most of express trains, Narita Express (*NEX*), do not call at Chiba station.
Then go to Platform 1 or 2 to change a local train of JR Sobu line and get off at the next station, Nishi-Chiba (circa 5 min.). A small gate of Chiba University Campus is located just on your right across the taxi rank.

From JR Tokyo station:

Take a rapid service train of the JR Sobu line for Chiba, and change a local train at Inage Station (circa 40min. from Tokyo) for Chiba; the next station is Nishi-Chiba and a small

gate of Chiba University Campus is found on your left across the taxi rank. Chiba City is located about 40 km east of Tokyo city centre.



Fourth International Symposium on

Acoustic Wave Devices for Future Mobile Communication Systems

Form is due before 13th February, 2010

Advance Registration Form

Are you Japanese resident? _____ Yes _____ No

Last (Family) Name
First (Given) Name:
Affiliation:
Mail Stop:
Mailing Address:
Telephone:
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e-mail:

Fax or post the Completed Form to:

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