

SCHEDULE

| Feb. 9 (Wed.) | Feb. 10 (Thu.) | Feb. 11 (Fri.) |
|----------------------------------|---------------------------|-----------------------------|
| Tenjin-yama House | Hokkaido Univ. | Hokkaido Univ. |
| | 9:00-10:40 Session III | 9:00-10:20 Session VI |
| | | 10:20-10:40 Break |
| | 10:40-11:00 Break | 10:40-12:20 Session VII |
| | 11:00-12:20 Session IV | |
| | 12:20-13:30 Lunch | 12:20-13:30 Lunch |
| 13:30-13:40 Symposium Opening | 13:30-15:30 Session V | 13:30-15:30 Session VIII |
| 13:40-15:20 Session I | | |
| 15:20-15:40 Break | 15:30- | 15:30- |
| 15:40-17:00 Session II | Technical Tour | Symposium Closing |
| Welcome Reception | Symposium Party | |

Technical Program

Feb. 9 (Wed.), 13:30-13:40, Symposium Opening: S. Kuriki (Hokkaido Univ.)

Chairperson: N. Yoshikawa (Yokohama National Univ.)

Feb. 9 (Wed.), 13:40-15:20, Session I

Chairperson: N. Yoshikawa (Yokohama National Univ.)

1-1, 13:40-14:00: **Millimeter-wave response mechanism of slot antenna coupled YBCO microbridge**, Takashi Uchida, Takayuki Nishida, Takashi Tachiki, Yoshizumi Yasuoka (National Defense Academy)

1-2, 14:00-14:20: **mm-wave responses of Bi-2212 intrinsic Josephson junctions in the flux-flow state**, Yasuyuki Yamada (Tohoku Univ.), Kensuke Nakajima (Hirosaki Univ.), Koji Nakajima (RIEC, Tohoku Univ.), Tsutomu Yamashita (Hirosaki Univ.)

1-3, 14:20-14:40: **Numerical analysis of a SQUID model for high- T_c Josephson junctions coupled with RF magnetic signals**, Yoshinao Mizugaki (Univ. of Electro-Comm.), Jian Chen (Nanjing Univ.)

1-4, 14:40-15:00: **Hysteresis of Josephson currents through superconducting junctions by applying the external magnetic field perpendicular to niobium electrodes**, Watanabe Norimitsu, Susumu Abe, Akiyoshi Nakayama, Kunimori Aizawa (Kanagawa Univ.)

1-5, 15:00-15:20: **Study on the barrier formation of vertically-stacked interface-treated Josephson junctions**, Masumi Inoue, Taishi Kimura, Koichiro Taniike, Akira Fujimaki (Nagoya Univ., CREST-JST)

Break, 15:20-15:40

Feb. 9 (Wed.), 15:40-17:00, Session II

Chairperson: M. Tonouchi (Osaka Univ.)

1-6, 15:40-16:00: **Single Flux Quantum digital technology**, Shinichi Yorozu, Yoshio Kameda, Yoshihito Hashimoto (SRL), Hirotaka Terai (NiCT), Akira Fujimaki (Nagoya University), Nobuyuki Yoshikawa (Yokohama National University)

1-7 16:00-16:20: **Design and Fabrication of Digital DROS with Superconducting FLL Circuit**, Hiroaki Myoren (Saitama Univ.), Masatoshi Goto (Saitama Univ. & AIST), Tohru Taino (Saitama Univ.), Katsuya Kikuchi, Hiroshi Nakagawa, Kazuhiko Tokoro, Masahiro Aoyagi (AIST), Susumu Takada (Saitama Univ.)

1-8, 16:20-16:40: **Analysis of superconducting second-order MASH sigma-delta modulator**, Satoru Hirano, Akira Yoshida, Hideo Suzuki, Shinya Hasuo, Keiichi Tanabe (SRL)

1-9, 16:40-17:00: **Measurement of Quantized Energy Levels in a Josephson Junction Using Single Flux Quantum Circuits**, Nobuyuki Yoshikawa, Yuki Yamanashi (Yokohama Nat. Univ.)

Welcome Reception

Feb. 10 (Thu.), 9:00-10:40, Session III

Chairpersons: K. Enpuku (Kyushu Univ.) and C.C. Wu (National Taiwan Univ. Hospital)

2-1, 9:00-9:30: **[Plenary] Recent Superconductive Electronics in Japan**, Tsutomu Yamashita (Hirosaki Univ.)

2-2, 9:30-10:00: **[Plenary] High- T_c SQUIDs, Applications and Perspectives**, Hong-Chang Yang, M.J. Chen, C.H. Wu, J.C. Chen, K.L. Chen (National Taiwan Univ.), S.H. Liao, H.E. Horng, (National Taiwan Normal Univ.), Hsu-Lei Lee, In-Tsang Lin, and Jyh-Horng Chen (National Taiwan Univ.)

2-3, 10:00-10:20: **[Invited] Development of a TDEM Data Acquisition System Based on a SQUID Magnetometer for Mineral Exploration**, Eiichi Arai, Toshihiko Hayashi (JOGMEC), Tatsuoki Nagaishi, Hajime Ota (SHS)

2-4, 10:20-10:40: **[Invited] SQUID-based Nondestructive Evaluation**, Chin-Yih Hong (Da-Yeh Univ.), H.E. Horng (National Taiwan Normal Univ.), and H.C. Yang (National Taiwan Univ.)

Break, 10:40-11:00

Feb. 10 (Thu.), 11:00-12:20, Session IV

Chairpersons: S. Ohshima (Yamagata Univ.) and L.M. Wang (Da-Yeh Univ.)

2-5, 11:00-11:20: **[Invited] Microwave-induced zero-crossing steps observed in BSCCO intrinsic Josephson junctions**, Takashi Tachiki, Shinjiro Someya, Takashi Uchida, Yoshizumi Yasuoka (National Defense Academy)

2-6, 11:20-11:40: **[Invited] Generation and Detection System of Sub-Terahertz Waves with Photomixer and High- T_c Josephson Junction**, Iwao Kawayama, Tatsuya Miyadera, Masayoshi Tonouchi (Osaka Univ.)

2-7, 11:40-12:00: **[Invited] Generation of THz radiation and Its Application in The Studies of Electrodynamics of High- T_c Superconductors in THz regime**, P. I. Lin, *J.Y. Juang, K.H. Wu, J.Y. Lin, T.M. Uen, and Y.S. Gou (National Chiao Tung Univ.)

2-8, 12:00-12:20: **Terahertz Emission Properties of High T_c superconductors**, Hironaru Murakami, Yukihiro Tominari, *Masayoshi Tonouchi (Osaka Univ.)

Lunch, 12:20-13:30

Feb. 10 (Thu.), 13:30-15:30, Session V

Chairpersons: S. Tanaka (Toyohashi Univ. of Tech.) and H.E. Horng (National Taiwan Normal Univ.)

2-9, 13:30-13:50: **[Invited] Fabrication and characterization of YBCO SQUIDs for multi-channel magnetocardiograph**, Akira Tsukamoto, Saitoh Kazuo, Koichi Yokosawa (Advanced Res. La., Hitachi), Daisuke Suzuki, Yusuke Seki, Akihiko Kandori, Keiji Tsukada (Central Res. Lab., Hitachi)

2-10, 13:50-14:10: **[Invited] MCG in Hyperlipidemic Rabbits**, Chau-Chung Wu (National Taiwan Univ. Hospital), Hong-Chang Yang (National Taiwan Univ.), and Heng-Er Horng (National Taiwan Normal Univ.)

2-11, 14:10-14:30: **[Invited] Magnetocardiogram on wild-type and arrhythmia model mice**, Yumie Ono, Kengo Shirai, Tasuku Nakamura, Atsushi Ishiyama (Waseda Univ.), Naoko Kasai (AIST)

2-12, 14:30-14:50: **Fabrication and characterization of multiple-SQUIDs arrays**, Mizushi Matsuda, Kanto Nakamura, Haruki Mikami (Muroran Inst. Tech.), Kenichi Takahashi, Shinya Kuriki (Res. Inst. Elec. Sci.)

2-13, 14:50-15:10: **[Invited] Neuromagnetic Dynamics of Movement-Related Brain Activity**, Jen-Chuen Hsieh (National Yang-Ming Univ.)

2-14, 15:10-15:30: **Study of Magnetic Field Responses from Brain using SQUIDs -- MEG Measurements and System Development --**, Shinya Kuriki, Fumiya Takeuchi, Yoshihiro Hirata, Sachiko Koyama, Wakako Nakamura (Hokudai)

Technical Tour (MEG Lab.: 15:30-16:00, Snow Fest.: 16:30-18:00)

Symposium Party

Feb. 11 (Fri.), 9:00-10:20, Session VI

Chairpersons: M. Matsuda (Muroran Inst. Tech.) and J.C. Hsieh (National Yang-Ming Univ.)

3-1, 9:00-9:20: **[Invited] Bio-compatible Nano-magnetic Particles for Immunoassay**, H.E. Horng, S.Y. Yang, Y.W. Huang (National Taiwan Normal Univ.), and H.C Yang (National Taiwan Univ.)

3-2, 9:20-9:40: **[Invited] SQUID System for Magnetic Immunoassay**, S.Y. Yang, H.E. Horng (National Taiwan Normal Univ.), and H.C Yang (National Taiwan Univ.)

3-3, 9:40-10:00: **Detection System for DNA by High T_c SQUID**, Saburo Tanaka, Zarina Aspanut, Yoshimi Hatsukade (Toyohashi Univ.)

3-4, 10:00-10:20: **Inspection of Copper Heat Exchanger Tubes Using HTS-SQUID**, Yoshimi Hatsukade, Saburo Tanaka (Toyohashi Univ. of Technol.)

Break, 10:20-10:40

Feb. 11 (Fri.), 10:40-12:20, Session VII

Chairpersons: A. Fujimaki (Nagoya Univ.) and C.Y. Hong (Da-Yeh Univ.)

3-5, 10:40-11:00: **[Invited] The effect of spread of critical current on voltage swing of HTS SQUID array**, Jen-Tzong Jeng (National Taipei Univ. of Tech.)

3-6, 11:00-11:20: **[Invited] The crosstalk correction methods in multichannel SQUID magnetometers**, Jau-Han Chen, Geng-Ming Jhang, Yen-Po Fang, Shr-Yu Shen (Da-Yeh Univ.), and Hong-Chang Yang (National Taiwan Univ.)

3-7, 11:20-11:40: **[Invited] Tunneling junctions using $\text{MgB}_2/\text{Ag}/\text{Bi}_2\text{Sr}_2\text{CaCuO}_{8+x}$ heterostructures**, Tetsuji Uchiyama, Masato Kimishima, Ienari Iguchi (Tokyo Tech.)

3-8, 11:40-12:00: **[Invited] Dynamics of Film Growth of Perovskite-Type Materials by Laser Ablation from Rheed Observations**, Y.S. Gou (National Chiao Tung Univ.)

3-9, 12:00-12:20: **[Invited] Fabrication process of Nb/ AlO_x /Nb junctions for Josephson integrated circuits**, Hiroyuki Akaike (Nagoya Univ.), Yoshihiro Kitagawa, Tetsuro Satoh, Kenji Hinode, Shuichi Nagasawa, Mutsuo Hidaka (SRL/ISTEC)

Lunch, 12:20-13:30

Feb. 11 (Fri.), 13:30-15:30, Session VIII

Chairpersons: H. Myoren (Saitama Univ.) and J.Y. Juang (National Chiao Tung Univ.)

3-10, 13:30-13:50: **[Invited] Development of SFQ sampler using high- T_c superconductor**, Michitaka Maruyama, Tsunehiro Hato, Hideo Suzuki, Hironori Wakana, Kohei Nakayama, Yoshiyasu Ishimaru, Osami Horibe, Seiji Adachi, Ai Kamitani, Koji Suzuki, Yasuo Oshikubo, Yoshinobu Tarutani, Keiichi Tanebe (SRL)

3-11, 13:50-14:10: **[Invited] Superconducting neural circuits using stochastic logic and new fabrication process elements**, Takeshi Onomi, Taizo Kondo, Takeshi Yamamae, Koji Nakajima (Tohoku Univ.)

3-12, 14:10-14:30: **[Invited] Mechanical tuning of superconducting lumped element filter**, Hiroaki Nishikawa, Kazuki Iguchi, Kazuyuki Agemura, Masanobu Kusunoki, Shigeki Hontsu (Kinki Univ.)

3-13, 14:30-14:50: **[Invited] Cross-Coupled Narrow-Band Filter Using YBCO Resonators with Artificial $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ Pinning Lattices**, L. M. Wang, Chih-Chang Chang, and Jie-Fan Wu (Da-Yeh Univ.)

3-14, 14:50-15:10: **Microwave Surface Resistance in 123 Superconducting Thin films**, Murugesan M, Haruhiko Obara, Hirofumi Yamasaki, Shin Kosaka (AIST)

3-15, 15:10-15:30: **Design, fabrication and characterization of HTS bandpass filters and duplexers**, Shigetoshi Ohshima, Motonori Takezawa, Fumihiro Aita, Atsushi Saito (Yamagata Univ.)

Feb. 11 (Fri.), 15:30-15:45, Symposium Closing: S. Kuriki (Hokkaido Univ.)

Chairpersons: H. Myoren (Saitama Univ.) and J. Y. Juang (National Chiao Tung Univ.)