

# EASSE 2023 Program

27 March (Mon.)

11:00	-	13:00	Registration			
13:00	-	13:10	Opening Remarks			
Keynote lecture (Chair: Prof. Shigetoshi Ohshima)						
13:10	-	13:40	Key.1	Hiroyuki Ohsaki	Superconductivity Applications in Transportation	Keynote
Session 1 (Chair: Prof. Sabro Tanaka)						
13:40	-	14:00	Inv.1	Charles S. Y. Yang	Magnetic immunoassay with SQUID and magnetic marker	Invited
14:00	-	14:20	Inv.2	Kiwoong Kim	Parahydrogen-enhanced SQUID MRI and organic reaction monitoring	Invited
14:20	-	14:40	Inv.3	Shane Andrew Cybart	Nanoscale High-Transition Temperature Josephson Junctions and SQUIDs	Invited
14:40	-	14:55	Caffe Break			
Session 2 (Chair: Prof. Yuji Tsuchiya)						
14:55	-	15:15	Inv.4	Shirabe Akita	Power Industry in Japan and Expectations for Superconducting Application	Invited
15:15	-	15:35	Inv.5	Shigehiro Nishijima	Investigation on High Gradient Magnetic Separation for Crud Material in Nuclear Reactors	Invited
15:35	-	15:55	Inv.6	Jun-ichi Shimoyama	Recent Progresses in Superconducting Joint Technologies Connecting HTS Tapes	Invited
15:55	-	16:15	Inv.7	Taketsune Nakamura	Advanced Rotational Characteristics of High-Temperature Superconducting Squirrel-cage Rotor Realized by Magnetic Flux-flow Phenomenon and Its Application Research	Invited
16:15	-	16:30	Cot.1	Lieze Schindler	Moat Design and Analysis for AQFP Circuits	Regular
16:30	-	16:45	Caffe Break			
Session 3 (Chair: Dr. Hirota Terai)						
16:45	-	17:05	Inv.8	Mutsuo Hidaka	One of the Key Issues in Fabrication Process toward Large-scale Superconducting Digital Circuits	Invited
17:05	-	17:25	Inv.9	Yoshinao Mizugaki	Development of SFQ Oscillator-Based Hardware Random Number Generators	Invited
17:25	-	17:45	Inv.10	Masamitsu Tanaka	Demonstration of a Superconductor 8-Bit Microprocessor Based on High-Throughput Single-Flux-Quantum Logic Circuits	Invited
17:45	-	18:05	Inv.11	Yuki Yamanashi	Design of Parallel Carry Lookahead Adders Using Single Flux Quantum Clockless Logic Gates Based on Self-Clocking	Invited
18:05	-	18:20	Cot.2	Christopher Lawrence Ayala	Leveraging Energy-Efficient Superconductor Electronics for Next Generation Cryptographic Computation	Regular
18:30	-	19:45	Poster Session & Welcome reception			

28 March (Tue.)

8:00	-	8:30	Registration			
Session 4 (Chair: Dr. Seiichiro Ariyoshi)						
8:30	-	8:50	Inv. 12	Gil-Ho Lee	Engineering graphene Josephson junction for sensitive photon detector	Invited
8:50	-	9:10	Inv. 13	Ming-Jye Wang	Development of Superconducting Nano-wire Single Photon Detector for Quantum Communication Application	Invited
9:10	-	9:30	Inv. 14	Hsiao-Mei Sherry Cho	Superconducting quantum sensors for sub-micro eV axion searches	Invited
9:30	-	9:50	Inv. 15	Takekazu Ishida	Neutron transmission imaging of room-temperature samples by a superconducting detector	Invited
9:50	-	10:05	Caffe Break			
Session 5 (Chair: Dr. Masamitsu Tanaka)						
10:05	-	10:25	Inv. 16	Naoto Sekiya	High Power Transfer Efficiency Magnetic Resonance Wireless Power Transfer System using High Quality Factor Coil with Double-Sided REBCO Wire	Invited
10:25	-	10:45	Inv. 17	Yuji Tsuchiya	Rectification of Microwave Signals using High-Temperature Superconducting Diodes	Invited
10:45	-	11:05	Inv. 18	Sam Benz	Superconductive Electronics for Quantum-based Metrology	Invited
11:05	-	11:25	Inv. 19	Chun-Lun Wang	NbN- and NbTiN-base Kinetic Inductance Traveling-Wave Parametric Amplifiers (KITWPAs) for Quantum Information Circuits	Invited
11:25	-	11:40	Cont-3	Hayato Ito	Effect of Heat Treatment on Quality Factor of Superconducting RF cavities	Regular
11:40	-	13:00	Lunch			
Session 6 (Chair: Dr. Yuki Yamanashi)						
13:00	-	13:20	Inv. 20	Akira Fujimaki	Impact of $\pi$ -Junction-Based SQUIDs on Superconductor Circuits	Invited
13:20	-	13:40	Inv. 21	Koji Inoue	Ultra-High-Speed, Low-Power Superconductor Computing with Architectural Optimization	Invited
13:40	-	14:00	Inv. 22	Taro Yamashita	Niobium nitride based ferromagnetic Josephson junctions toward quantum applications	Invited
14:00	-	14:20	Inv. 23	Hiroataka Terai	Recent progress in superconducting qubits with nitride superconductors	Invited
14:20	-	14:35	Cont-4	Michael Alan Johnston	Interconnection Strategies for Adiabatic Quantum Flux Parametron Circuits	Regular
14:35	-	14:50	Caffe Break			
Session 7 (Chair: Dr. Mutsuo Hidaka)						
14:50	-	15:10	Inv. 24	Enrico Silva	Surface Impedance Measurements in Superconductors in Strong DC Magnetic Fields	Invited
15:10	-	15:30	Inv. 25	Seiichiro Ariyoshi	High-temperature Superconducting Probe for Scanning Probe Microscopy	Invited
15:30	-	15:50	Inv. 26	Neeraj Khare	Study of YBCO-NaNbO <sub>3</sub> nanocomposite for enhanced flux pinning and Step junction SQUID with portable cryocooler for rock magnetism	Invited
15:50	-	16:05	Caffe Break			
Session 8 (Chair: Dr. Yoshihiko Takano)						
16:05		16:25	Inv. 27	Yen Pin Chang	New control process of Oxygen Exposure for the fabrication of high quality Nb/Al–AlOx/Nb Josephson junctions	Invited
16:25		16:45	Inv. 28	Hsiao-Wen Chang	NbN and NbTiN films on 2-inch Silicon Wafers with AlN Buffer-layer – Growth and their Structural and Superconducting Properties	Invited
16:45		17:00	Cont-5	Yoichi Higashi	Theoretical study on quasiparticle diffusion and trapping in one dimensional superconducting circuit	Regular
19:00	-	21:00	Banquet			

## 29 March (Wed.)

8:00	-	8:30	Registration			
Session 9 (Chair: Dr. Kiwoong Kim)						
8:30	-	8:50	Inv. 29	Steven Anlage	Coherence and Nonlinearity of Strongly Coupled rf SQUID Metamaterials	Invited
8:50	-	9:10	Inv. 30	Teruyoshi Sasayama	Application of an HTS Coil as a High-Sensitivity Magnetic Sensor for Non-Destructive Testing	Invited
9:10	-	9:30	Inv. 31	Yoshimi Hatsukade	Development of Nondestructive Evaluation Systems Combining ECT Probe with HTS-SQUID for Creep Life Assessment of KA-SUS304J1HTB Boiler Tubes	Invited
9:30	-	9:50	Inv. 32	Saburo Tanaka	High Tc SQUID application for Metallic Contaminant Detection in Liquid	Invited
9:50	-	10:05	Caffe Break			
Session 10 (Chair: Prof. Taro Yamashita)						
10:05	-	10:25	Inv. 33	Masayoshi Tonouchi	Photon-Vortex Conversion Studied by Terahertz Emission Spectroscopy/Imaging	Invited
10:25	-	10:45	Inv. 34	Akinobu Irie	Josephson Current Modulation in Hybrid FSF Structures Based on Intrinsic Josephson Junctions	Invited
10:45	-	11:05	Inv. 35	Akira Kawakami	Mid-infrared Photon Detection by Hot Electron Bolometer	Invited
11:05	-	11:25	Inv. 36	Yoshihiko Takano	THz emission from BSCCO cross-whisker junction	Invited
11:25	-	11:45	Inv. 37	Chiko Otani	Thin-Film Superconducting Microwave Resonator with High Quality Factor	Invited
11:45	-	11:55	Closing Remarks			
12:00	-		Technical tour			

## Poster presentaion

18:30-20:00 27 March	P.1	Faiz Dhiyauddin Bin Ahamad Zawati	A Study of Phase Detection Method for Inspection of Metallic Foreign Matter	Invited
	P.2	Han Sheng Huang	Construction and characteristics study of high-Tc SQUID based biomagnetic particle imaging system	Invited
	P.3	Kei Yamashita	Aggregation of magnetic nanoparticles in biological samples evaluated by HTS-SQUID magnetic immunoassay system	Invited
	P.4	Masayuki Higashi	Analysis of the giant inductance effect in single $\pi$ -junction-SQUIDs	Invited
	P.5	Takanori Fujita	Improvement of Design Precision on NMR Sample Coil with High-Temperature Superconductor Using 3D Simulator	Invited
	P.6	Wataru Komiya	Demonstration of High-Speed Operation of a Majority-Booster Gate in Adiabatic Quantum-Flux-Parametron Circuits	Invited
	P.7	Wenhui Luo	Demonstration of a Superconducting Stochastic Memory for Stochastic Computing Systems	Invited
	P.8	Hatsuki Koyama	Investigation of fabrication process for two-step MKID using niobium nitride film	
	P.9	Hongxiang Shen	High-speed Josephson-CMOS interface circuits applied in the hybrid memory	
	P.10	Rekka Moriya	Development of a highly sensitive evaluation system for AC magnetization characteristics of magnetic nanoparticles using HTS-SQUID	
	P.11	Rikuo Yamanaka	Design of a Bayesian Network Using a Superconducting Random Number Generator	
	P.12	Ryosuke Shimada	Toward the realization of an on-chip photon-number-resolving detector with high detection efficiency	
	P.13	Seigo Ito	Parameter Optimization for Stable Operation of Boltzmann Machines by Superconducting Circuits	
	P.14	Seiya Hayashi	Voltage-Swing Improvement of Double- SQUID Amplifier by Tuning McCumber Parameter	
	P.15	Shu Sasaki	Design of a variable output amplitude microwave generator using ERSFQ circuits for qubits control	
	P.16	Steven Anlage	Disentangling Superconductor and Dielectric Microwave Losses in Sub-Micron Nb/TEOS-SiO <sub>2</sub> Interconnects with a Multi-Mode Microstrip Transmission Line Resonator	
	P.17	Taiki Yamamoto	Dispersion method of magnetic nanoparticles by femtosecond laser pulses for quantitative magnetic immune assay using HTS-SQUID	
	P.18	Takuya Suzuki	Design of an SFQ Regular Expression Supported Pattern Matching Circuit for a Network Intrusion Detection System	
	P.19	Toranosuke Nakayama	Design of Half Flux Quantum Circuits with Controllability in Energy Efficiency	
	P.20	Xin Long Wang	Research on wireless power transmission using 24 GHz patch antennas	
	P.21	Yuki Tottori	Fabrication of HTS SQUID with Nanobridge Josephson Junctions	
	P.22	Zeyu Han	Design of Pooling Layer for Binarized Neural Networks Using Single-Flux-Quantum Circuit	
	P.23	Zongyuan Li	Design of a Pipeline Multiply-Accumulator with a High-Throughput Accumulator Using Single Flux Quantum Circuit	
	P.24	Alok Jha	Vortex pinning and critical current densities in GdBCO thin films with CaHfO <sub>3</sub> nanoinclusions	