

1996 INTERNATIONAL WORKSHOP ON SUPERCONDUCTIVITY

**"High Temperature
Superconducting Electronics:
Fundamentals and Applications"**

June 24 – 27, 1996
Hachimantai Royal Hotel
Iwate, Japan



Sponsored by
International Superconductivity Technology Center (ISTEC)

Co-Sponsored by
Iwate Prefectural Government
Tohoku Intelligent Cosmos Promotion Council

PROGRAM AND EXTENDED ABSTRACTS



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TECHNICAL PROGRAM

● TUESDAY, JUNE 25

Opening Ceremony

9:00 - 9:45

Master of Ceremony :

Room A & B

Mr. M. Toriihara, Senior Managing Director, ISTEK

9:00 - 9:05

Opening Announce

Mr. M. Toriihara, ISTEK

9:05 - 9:10

Opening Remarks

Dr. S. Tanaka, Vice President of ISTEK

Workshop Chairperson

9:10 - 9:15

Cosponsor Speech

Mr. H. Masuda, Governor of Iwate Prefecture

9:15 - 9:30

Introduction of Workshop Topics

Prof. Y. Okabe, Chairperson of Program Committee

Plenary Session

9:45 - 12:00

Chairpersons: Y. Okabe (University of Tokyo)

Room A & B

J. Talvacchio (Northrop Grumman STC)

*Invited Papers

9:45 - 10:30

*PL-1

High Speed Components Based on High-Tc Superconducting Grain Boundary Junctions 3

T. Claeson, Z. Ivanov, V. Kaplunenko, B. Nilsson, E. Stepantsov, E. Wikborg*, D. Winkler, H.R. Yi, Y.M. Zhang

(Chalmers University of Technology and Göteborg University/Sweden

*Ericsson Components/Sweden)

10:30 - 11:15

*PL-2

Microwave Applications of HTS 7

R.B. Hammond

(Superconductor Technologies Inc./U.S.A.)

11:15 - 12:00

*PL-3

SQUID Array 8

H. Kado

(Kanazawa Institute of Technology/Japan)

12:00 - 13:30

Lunch

Session 1: Physics & Thin Films

13:30 - 15:25

Chairpersons: H. Akoh (ETL)

Room A & B

S. Wolf (Naval Research Laboratory)

*Invited Papers

13:30 - 13:55

*S1-1

Josephson Plasma Oscillation in High Tc Superconductors 15

M. Tachiki, T. Koyama*, S. Takahashi*

(National Research Institute for Metals/Japan *Tohoku University/Japan)

13:55 - 14:15	S1-2	Superconducting Gap Structure and Surface Characterization of Nd₁Ba₂Cu₃O_y Thin Films and Bi₂Sr₂CaCu₂O_y Single Crystals Using an Improved UHV-LT-STM System W. Ting, M. Badaye, T. Morishita, N. Koshizuka, S. Matsuura*, T. Hasegawa*, K. Kitazawa* (ISTEC - SRL/Japan *University of Tokyo/Japan)	19
14:15 - 14:40	*S1-3	YBCO Films Prepared by Liquid Phase Epitaxy P. Görnert, T. Aichele, S. Bornmann, C. Dubs (Sur A Tech GmbH/Germany)	22
14:40 - 15:05	*S1-4	Molecular and Crystal Engineering of High-Tc Superconductor Thin Film Structures and Devices J.T. McDevitt, J.P. Zhou, C.E. Jones, R.-K. Lo, J.E. Ritchie, J. Zhao, C.A. Mirkin*, F. Xu*, K. Chen*, J. Talvacchio** (University of Texas at Austin/U.S.A. *Northwestern University/U.S.A. **Northrop Grumman STC/U.S.A.)	26
15:05 - 15:25	S1-5	The Structure of Interfaces in YBa₂Cu₃O₇ Based Superconducting Heterostructures and Devices C.L. Jia, K. Urban (Forschungszentrum Jülich GmbH/Germany)	30
15:25 - 16:00		Coffee Break	

Session 2: Junctions & Devices

16:00 - 17:55

Chairpersons: G.J. Gerritsma (University of Twente)
K. Miyahara (NTT Corporation)

Room A & B

*Invited Papers

16:00 - 16:25	*S2-1	Progress in Applications of HTS SQUID and Josephson Junctions M. Siegel (Forschungszentrum Jülich GmbH/Germany)	35
16:25 - 16:50	*S2-2	Josephson Coupling and Localized States in YBa₂Cu₃O₇/PrBa₂Cu₃O₇/YBa₂Cu₃O₇ Junctions J. Yoshida, T. Nagano, T. Hashimoto (Toshiba Corporation/Japan)	36
16:50 - 17:15	*S2-3	High-Temperature Superconducting Circuits Using SNS Long Junctions Transistors S.J. Berkowitz (Conductus, Inc./U.S.A.)	40
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Chairpersons: Y. Enomoto (ISTEC - SRL) R.B. Hammond (Superconductor Technologies Inc.)		Room A & B

*Invited Papers

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Digital & Hybrid Applications	PO-27 – PO-30

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13:00-18:30 Informal Session

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Chairpersons: K. Urban (Forschungszentrum Jülich GmbH) J. Yoshida (Toshiba Corporation)		Room C

*Invited Papers

18:30 - 18:50	*RI-1	Intrinsic SIS Josephson Tunnel Junctions in High-Tc Superconductors K. Tanabe, Y. Hidaka, S. Karimoto, M. Suzuki (ISTEC-SRL/Japan)	71
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18:30 - 21:00

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K. Takagi (Hitachi, Ltd.)

Room E

*Invited Papers

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M. Siegel (Forschungszentrum Jülich GmbH)

Room A & B

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S. Tahara (NEC Corporation)

Room A & B

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12:45 - 13:00
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Chairperson: Y. Okabe (University of Tokyo)

Speaker: S. Tanaka (ISTEC, Workshop Chairperson)

Poster Session

10:30 - 12:30

Chairpersons: K. Kontani (Iwate Industrial Res. Inst.)
T. Morishita (ISTEC - SRL)

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