

FINAL CIRCULAR

THIRD INTERNATIONAL CONFERENCE
ON MATERIALS ENGINEERING
FOR RESOURCES



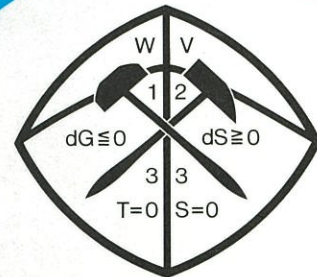
ICMR'98 AKITA

AKITA VIEW HOTEL
AKITA CITY, AKITA PREF., JAPAN

ICMR '98, AKITA
Faculty of Engineering and Resource Science, Akita University;
AKITA, 010-8502 JAPAN

FINAL CIRCULAR

THE THIRD
INTERNATIONAL CONFERENCE
ON
MATERIALS ENGINEERING
FOR
RESOURCES



ICMR'98 AKITA

October 26-28, 1998

AKITA VIEW HOTEL

AKITA CITY, AKITA PREF., JAPAN

Organized by:
The Society of Materials Engineering
for Resources of Japan;
Faculty of Engineering and Resource Science, Akita University;
and
The Research Institute of Materials and Resources,
Faculty of Engineering and Resource Science, Akita University, Japan

ICMR'98 AKITA

This international conference is organized by the Society of Materials Engineering for Resources of Japan; Faculty of Engineering and Resource Science, which was rearranged from Mining College on April 1, 1998, Akita University; and the Research Institute of Materials and Resources attached to Faculty of Engineering and Resource Science. It is cosponsored by the Ministry of Education, Science, Sports and Culture, Japan; Akita Prefecture; Akita City; and the Chemical Society of Japan (Tohoku Branch).

In 1991, the heritage of resource-research community enabled Akita to be the place for the first international conference on materials engineering for resources (ICMR'91 Akita), which aimed at re-examination of separate ideas in the traditional engineering fields from resources to electronics engineering, and directed our efforts to integration into a new concept which would give a perspective from electronic, atomic, and molecular to electrical and mechanical properties. The second, ICMR'94 AKITA, celebrating the establishment of a new PhD program in Mining College, not only inherited the idea of the first conference, but also extended the issues of earth science, from resources development to environmental conservation, in relation to materials engineering.

Here, the Third International Conference on Materials Engineering for Resources, ICMR'98 AKITA, also receives the main idea of the first conference: Beneficial integration of separate ideas into a new concept which could provide a promising view. At the same time, special attention is to the materials or resources recycling technology with a due consideration for the local, the regional, and the global environments. Much contribution is expected of collaboration with modern information science and engineering.

The organizing committee extends a cordial invitation to you to participate in the Third International Conference on Materials Engineering for Resources, ICMR'98 AKITA, to be held at Akita View Hotel, October 26-28, 1998.

The technical program consists of the following session groups :

- Plenary Session, 30 minute lecture with 5 minute discussion each ;
- Keynote Sessions, (excluding Special Sessions), 15 minute lecture with 5 minute discussion each ;
- Poster Sessions, 3 minute oral presentation (without discussion) for each poster leading the session, followed by discussion in front of a panel board assigned.

The preprints of full text of plenary papers and the extended abstracts for keynote papers and poster presentation will be distributed at the conference desk. All the posters discussed are encouraged to be published as original full papers in (a) special issue(s) of International Journal of the Society of Materials Engineering for Resources. The deadline for submission will be noticed later.

TIME SCHEDULE

Date/Time		Room	Main Room
Oct. 26, Mon	8:00-		
	9:00- 9:30		Opening Ceremony
	9:30-11:50		Plenary Session
	13:00-15:20		Plenary Session
	15:40-17:40		
	18:30-20:30		Banquet
Oct. 27, Tue	8:00-		
	8:30-10:30		
	10:50-11:50		
	13:00-14:40		
	14:40-18:00		
Oct. 28, Wed	8:30-12:00		
	13:00-15:00		
	15:30-16:00		Closing Ceremony

Room A	Room B
Registration	
Coffee Break	
Keynote Session (A-1)	Keynote Session (B-1)
Registration	
Keynote Session (A-2)	Keynote Session (B-2)
Keynote Session (A-3)	Keynote Session (B-3)
Keynote Session (A-4)	
Keynote Session (A-4)	Keynote Session (B-4)
Keynote Session (A-5) (Special Session-1)	Keynote Session (B-5) (Special Session-2)
Poster Session (A-P1)	Poster Session (B-P1)
Poster Session (A-P2)	
Poster Session (A-P2)	Poster Session (B-P2)

OPENING CEREMONY

Main Room

Oct. 26 9:00~9:30

Chairperson :

T. Ohyoshi

PLENARY SESSION

Main Room

Oct. 26 9:30~11:50

Chairpersons :

T. Sugawara, S. Goto, T. Ohyoshi, N. Yoshimura

SFF Processing of Tailored Ceramic Microstructures

Professor Michael J. Cima

Ceramics Processing Research Laboratory, Massachusetts Institute of Technology, Cambridge, MA 01239, U. S. A.

Direct Observation of Magnetic Vortices in High-Temperature Superconductors by Using Electron Waves

Dr. Akira Tonomura

Advanced Research Laboratory, Hitachi Ltd., Hatoyama, Saitama, Japan

Reliability of Multilayer Ceramic Capacitor with Ni Electrodes

Dr. Takeshi Nomura

Materials Research Center, TDK Corporation, Narita, Chiba, Japan

The Role of Material Engineering for Global Multimedia Society

Dr. Hiroshi Osanai

Executive Vice President, Fujikura Rubber Ltd., Shinagawa-ku, Tokyo, Japan

Oct. 26 13:00~15:20

Chairpersons :

G. Obinata, T. Matsunaga, K. Makino, S. Akibayashi

Integrating Design of Models, of Plant, of Control, and of Finite Precision Computing

Professor Robert E. Skelton

Structural Systems and Control Laboratory, University of California at San Diego, La Jolla, CA 92093, U. S. A.

Where and How the Japanese Mining Industry Goes ?

Mr. Keiichi Goto

Director of Mining Division, Agency of Natural Resources and Energy, Ministry of International Trade and Industry, Chiyoda-ku, Tokyo, Japan

Environmental and Material Concerns of the Music Industry

Dr. Jerry M. Whiting

Director, Research and Development, Gibson Guitar Corporation, Nashville, Tennessee, U. S. A.

Prospect of Geological Sequestration of CO₂ for Greenhouse Mitigation and Natural Gas Recovery

Dr. Hitoshi Koide

Environmental Geology Department, Geological Survey, Tsukuba, Ibaraki, Japan

KEYNOTE SESSIONS

ROOM A

Oct. 26 15:40~17:40 (A-1)

Chairpersons :

M. J. Cima, K. Adachi, A. H. Bekkala, Y. Pan, T. Taniguchi, T. Nomura, Y. Yamashita, T. Niwa

Material Chemistry and Designing of High-Tc Oxide Superconductors

Professor Kohji Kishio

Department of Applied Chemistry, University of Tokyo, Bunkyo-ku, Tokyo, Japan

Microstructural Design of Metal-Toughened Ceramic Composites

Professor Wei-Hsing Tuan

Institute of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan

Fine Grinding of Solid Materials and It's Evaluation

Professor Yoshiteru Kanda

Department of Materials Engineering, Yamagata University, Yonezawa, Yamagata, Japan

Mechanical Properties and Microstructure Analysis of $\text{Si}_3\text{N}_4/\text{SiC}$ Nanocomposites

Dr. Deock-Soo Cheong

Ceramics Division, Korea Institute of Science and Technology, Seoul, R. Korea

Nanostructural Control of Ceramics by Using Ultrafine Composite Particles

Professor Junichi Hojo

Department of Chemistry and Biochemistry, Kyushu University, Fukuoka, Japan

Microstructure Designing for Porous Alumina Ceramics Using Spray Pyrolyzed Powder

Professor Kiyoshi Okada

Department of Inorganic Materials, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan

Oct. 27 8:30~10:30 (A-2)

Chairpersons :

R. E. Skelton, J. Hojo, K. Okada, I. Iwasaki, Y. Shibachi, A. Sarja, S. Goto

Application of Fracture Mechanics in the Mining Industry

Professor H. P. Rossmann

Institute of Mechanics, Vienna University of Technology, Vienna, Austria

The Macro-Meso Scope Theory of Rockburst in Coal Mine

Professor Pan Yishan

Engineering Mechanics Institute, Liaoning Technical University, Dong Gang, Liaoning 123000, P. R. China

Characteristic Wave Phenomena of Fiber Reinforced Composites

Professor Tadashi Ohyoshi

Department of Mechanical Engineering, Akita University, Akita, Japan

Wave Propagation in Layered Structures and Its Use for Material Characterization

Dr. G. R. Liu

Department of Mechanical and Production Engineering, National University of Singapore, Singapore

Optimum Design of Filament Wound Thick-Walled CFRP Pipes to Reduce Residual Interlaminar stresses

Professor Hideki Sekine

Department of Aeronautics and Space Engineering, Tohoku University, Sendai, Japan

Application of Composite Materials for Petroleum Exploration and Production

Professor S. S. Wang
Composite Engineering and Application Center,
University of Houston, Houston, TX 77204, U. S. A.

Oct. 27 10:50~11:50 (A-3)

Chairpersons :

J. M. Whiting, M. Todoki, Y. Tanigawa, T. Hata, M. A. Wojtowicz

The Challenge of Designing Lifecycle Quality Products
Professor Andrew H. Bekkala

Manufacturing Engineering Department, St. Cloud
State University, St. Cloud, MN 56301, U. S. A.

New Technical System for Recycle Use of Waste Fresh Concrete Materials by Using Special Retarder

Professor Makoto Kagaya
Department of Civil Engineering, Akita University,
Akita, Japan

Life Cycle Engineering in Construction

Professor Dr. Tech Asko Sarja
Technical Research Centre of Finland, Espoo, Finland

Oct. 27 13:00~14:40 (A-4)

Chairpersons :

E. Yamada, G. R. Liu, L. G. Twidwell, W. H. Tuan, M. Iwamoto, H. Sekine

Intrinsic and Extrinsic Grain Size Effects on Ferroelectric Films and Bulk Ceramics

Dr. Shigekazu Sumita
TDK Corporation, Ichikawa, Chiba, Japan

Application of Pearlitic Microstructure for Development of Ultra-High Strength Steel Wire

Professor Shoji Goto
Department of Materials Science and Engineering,
Akita University, Akita, Japan

Application of Thermal Radiation Spectroscopy to In-process Diagnosis of Surface Temperature and Microstructure

Professor Toshiro Makino
Department of Engineering Physics and Mechanics,
Kyoto University, Kyoto, Japan

Thermal Stress-Focusing Effect in a Uniformly Heated Solid Sphere and Related Topics

Professor Toshiaki Hata
Faculty of Education, Shizuoka University, Shizuoka,
Japan

Optimization Problem of Material Composition of Functionally Graded Materials for Thermal Stress Relaxation Making Use of Genetic Algorithm

Professor Yoshinobu Tanigawa
Department of Mechanical Systems Engineering,
Osaka Prefecture University, Sakai, Osaka, Japan

Oct. 27 14:40~18:00 (A-5)

SPECIAL SESSION-1 CO₂ Storage AND Other Related Technology FOR Global Environment

Chairperson: Dr. Satoshi Akibayashi
Department of Earth Science and Technology, Akita
University, Akita, Japan

Thermal and Rheological Properties of Drilling Fluids and Its Application to Thermal Simulation for Offshore Drilling

Dr. Kyuro Sasaki
Department of Earth Science and Technology, Akita
University, Akita, Japan

A Basic Numerical Study on CO₂ Injection into Aquifer

Dr. Shinji Yamaguchi
Department of Earth Science and Technology, Akita
University, Akita, Japan

Modeling of Swelling Behaviors of Geological Materials and Its Application for Underground Waste Repository as Sealing Materials

Dr. Jiro Yamatomi

Department of Geosystem Engineering, University of Tokyo, Bunkyo-ku, Tokyo, Japan

Surface Measurement of Natural Gas Hydrate in Marine Sediments

Dr. Dave Goldberg

Lamont Doherty Earth Observatory of Columbia University, Columbia University, Palisades, NY 10964, U. S. A

Chairperson: **Dr. P. Raj Bishnoi**

Department of Chemical and Petroleum Engineering, University of Calgary, Alberta, Canada.

A Review of the Experimental Studies on CO₂ Hydrates,

Dr. Balachandran Jeyadevan

Department of Materials-Process Engineering and Applied Chemistry for Environments, Akita University, Akita, Japan

A Model Calculation of Trapping Process of Carbon-Dioxide Gas in Aquifers by Hydrate Formation

Dr. Masahiro Masuda

Department of Geosystem Engineering, University of Tokyo, Bunkyo-ku, Tokyo, Japan

Stability of CO₂ Hydrate in the Sea Floor

Dr. Bruce Buffett

Department of Geophysics and Astronomy, University of British Columbia, Vancouver, B.C., Canada

Phase Equilibrium in the System Carbon Dioxide-Methane and Water in the Hydrate Formation Region

Dr. Peter Englezos

Department of Chemical Engineering, University of British Columbia, Vancouver, B. C., Canada

Quantitative Risk Simulation of CO₂ Disposal Economic Models for Alberta, Canada

Dr. Samuel Frimpong

School of Mining and Petroleum Engineering, University of Alberta, Edmonton, Alberta, Canada

ROOM B

Oct. 26 15:40~17:40 (B-1)

Chairpersons :

Y. Takahashi, E. Fromm, Z. Jin, H. P. Rosmanith, S. S. Wang, T. Makino, S. Mori, M. Harada

Materials Recycling in the Next Century

Professor Wyjnand Dalmijn

Department of Raw Materials Technology, Delft University of Technology, Delft, The Netherlands

Thermal Treatment of Concentrates from Closed Cycle Effluent Systems for Pulp and Paper Bleach Plants

Mr. Allan Chambers

Environment Business Unit, Alberta Research Council, Edmonton, Alberta, Canada

Mineral Processing Technology and Resources Recycling

Dr. Iwao Iwasaki

Central Research Institute, Mitsubishi Materials Corporation, Omiya, Saitama, Japan

Separation Technology for Materials Recycling -Its Principle and Practice-

Dr. Masao Suzuki

AI Tech Associates, Kokubunji, Tokyo, Japan

A Study on the Fabrication of Ultra Fine Magnetite Particles and Magnetic Fluid from the Waste Pickling Liquor of Steel

Professor Kim Young-Sam

Department of Metallurgical Engineering, Dond-A University, Pusan, R. Korea

The Recovery and Recycle of Mercury from Chlor-Alkali Plant Wastewater Sludge

Professor L. G. Twidwell

Metallurgical Engineering Department, Montana Tech of the University of Montana, Butte, Montana 59701, U. S. A.

Oct. 27 8:30~10:30 (B-2)

Chairpersons :

A. Tonomura, K. Narita, S. Sumita, W. Dalmijn, M. Sadakata, D. S. Cheong, Y. Kanda

Physical Magnitudes Used as Observation Parameters in the Test of Integrated Circuits

Professor Antonio Rubio

Department of Electronic Engineering, Polytechnical University of Catalonia, Barcelona, Spain

AC Flashover Performance of Insulators in Severe Environment

President Gu Leguan

Department of Electrical Engineering, Chongqing University, Chongqing 400044, P. R. China

Free Radical Scavenger Regarded as a Voltage Stabilizer In Polyethylene

Professor Tu De-Min

Department of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, P. R. China

Past, Present and Future Application of Relaxor Materials

Dr. Yohachi Yamashita

Materials & Devices Research Labs., Toshiba Corp., Kawasaki, Kanagawa, Japan

Space Charge Behavior of Polymer Insulated DC Cables

Dr. Toshio Niwa

Materials Research Laboratory, Fujikura Ltd., Koto-ku, Tokyo, Japan

Nano-Electrostatic Interfacial Phenomena of Organic Monolayer Films and Monolayer Rectification

Professor Mitsumasa Iwamoto

Department of Physical Electronics, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan

Oct. 27 10:50~11:50 (B-3)

Chairpersons :

H. Osanai, Y. S. Kim, A. Chambers, K. Nakatsuka, T. Ohyoshi

Low-Temperature Oxidation of Metal Surfaces

Dr. Eckehard Fromm

Max-Planck-Institute for Metal Research, Stuttgart, Germany

The Recent Operation of Hematite Process in the Iijima Zinc Refinery

Mr. Yutaka Shibachi

Iijima Refinery, Akita Smelting and Refining Co. Ltd., Akita, Japan

Phase Diagrams for Some Important Oxide Systems and Their Applications to Microstructure Control

Professor Zhanpeng Jin

Department of Materials Science and Engineering, Central-South University of Technology, Changsha, Hunan 410083, P. R. China

Oct. 27 13:00~14:40 (B-4)

Chairpersons :

L. Gu, D. M. Tu, K. Kishio, F. E. Huggins, A. Rubio, M. Kagaya

Melting Behavior of Ultrafine Crystallites -Polymers and Ice-

Dr. Minoru Todoki

Toray Research Center Inc., Otsu, Shiga, Japan

Formation Processes of Silica-Microstructures in Micellar and Reverse-Micellar Solutions

Professor Makoto Harada

Institute of Advanced Energy, Kyoto University, Uji, Kyoto, Japan

Dynamic Wetting and Air Entrainment in High Speed Coating

Professor Kitaro Adachi

Department of Applied Chemistry, Kyushu Institute of Technology, Tobata, Kitakyushu, Japan

Surface Modification of Iron Particles with Dielectric Oxides by Sol-Gel Method

Professor Katsuto Nakatsuka

Department of Geoscience and Technology, Tohoku University, Sendai, Japan

Proposal of Radical Reaction Engineering for Environmental Protection Technology and New Material Synthesis

Professor Masayoshi Sadakata

Department of Chemical Engineering, University of Tokyo, Bunkyo-ku, Tokyo, Japan

Oct. 27 14:40~18:00 (B-5)

SPECIAL SESSION-2 Heavy Carbonaceous Resources Conversion and Other Related Technology for Environmental Conservation

Co-ordinator: **Dr. Katsuyasu Sugawara**, Division of Materials Process Engineering, Akita University, Akita, Japan.

Power Generation Process of Wasted Materials

Professor Shigekatsu Mori

Department of Chemical Engineering, Nagoya University, Nagoya, Japan

Coal Pyrolysis as a Means to Recover Valuable Chemicals from Coal

Professor Kouichi Miura

Department of Chemical Engineering, Kyoto University, Kyoto, Japan

Element Speciation in Environmentally Important Materials

Professor Frank E. Huggins

Department of Chemical and Materials Engineering, University of Kentucky, Lexington, KY 40506, U. S. A.

Circumstantial Changes of Coal Utilization and Coal Quality Evaluation Technology

Mr. Kazunori Taniguchi

Idemitsu Kosan Ltd., Sodegaura, Chiba, Japan

New Coal Utilization Technology for Iron-making

Dr. Tsunao Kamijo

Kobe Steel Co. Ltd., Kobe, Japan

Microporous Carbon Adsorbents for Hydrogen Storage

Dr. Marek A. Wojtowicz

Advanced Fuel Research, East Hartford, CT 06108, U. S. A.

POSTER SESSIONS

Oct. 28 8:30~12:00

Advisory Board

ROOM A (A-P1: AP101~135, A-P2: AP201~215)

T. Fujita^{*}, F. Hamada^{*}, M. J. Cima, W. H. Tuan, D. S. Cheong, Y. Pan, R. E. Skelton, H. P. Rossmanith, S. S. Wang, G. R. Liu, L. G. Twidwell, Z. Jin, K. Adachi, Y. Arai, M. Harada, Y. Kanda, M. Iwamoto, K. Nakatsuka, M. A. Wojtowicz, H. Tamamoto, T. Matsunaga, Y. Takahashi, K. Makino

ROOM B (B-P1: BP101~135, B-P2: BP201~215)

M. Nishida^{*}, O. Kamiya^{*}, A. H. Bekkala, J. M. Whiting, A. Sarja, E. Fromm, A. Rubio, W. Dalmijn, Y. S. Kim, A. Chambers, L. Gu, D. M. Tu, F. E. Huggins, A. Narita, K. Ouchi, M. Sadakata, H. Sekine, Y. Yoshimura, E. Yamada, T. Sugawara, T. Taniguchi, S. Goto, T. Ohyoshi

*) Chief commentators

A-P1

- 101 Hydrogenation through Partial Oxidation of Hydrocarbon in Supercritical Water by T. Adschiri, M. Watanabe, S. Okazaki, M. Watanabe, S. Okazaki, T. Sato, M. Mochiduki and K. Arai (Tohoku Univ.)
- 102 Chemical Characterization of Acid Precipitation and Fog of Akita Prefecture in Japan by N. Ogawa, R. Kikuchi, T. Okamura, M. Kajikawa and Y. Iwata (Akita Univ.), T. Ozeki (Hyogo Univ. of Teacher Education)

- 103 Thermoreversible Gelation in Coal Extract Solutions by V. Oja, M. Suzuki and M. Iino (Tohoku Univ.)
- 104 Investigation of the Hydrogen Bonds in Coal by Vacuum FTIR-Types and Their Thermal Stability by C. Chen and J. Gao (East China Univ. of Sci. and Tech.)
- 105 Study on the Softening Behavior of Coking Coals from Solvent Extraction and Viscoelastometer by T. Yoshida and M. Iino (Tohoku Univ.), T. Takanohashi (Natl. Inst. of Resources and Environ.), K. Katoh (Nippon Steel Co.)
- 106 Heat Treatment of Coals in Various Solvents at 175-300°C by C. Li and M. Iino (Tohoku Univ.)
- 107 Sorption Behaviors of Various Organic Vapors into Coals by Y. Terao, T. Takanohashi and M. Iino (Tohoku Univ.)
- 108 Surface Tension of Coal Extract Solution by N. Aoshima, T. Kikuchi and M. Iino (Tohoku Univ.)
- 109 Viscoelastic Behavior of Coal Extracts-Solvent Gel Film by M. Kuniya, S. Isoda, T. Takanohashi and M. Iino (Tohoku Univ.)
- 110 Acidity Distribution of Carboxyl Groups in Brown Coal and Its Control by Heat Treatment by K. Murakami, T. Yamada, K. Fuda and T. Matsunaga (Akita Univ.)
- 111 Organic Sulfur Removal from Coal by T. Takusari, K. Sugawara, T. Sugawara (Akita Univ.), M. Shirai and Y. Nishiyama (Tohoku Univ.)

- 112 A New Porous Carbon Materials Made from Rice Bran by H. Iizuka, G. Kato, K. Igarashi, H. Shikano and T. Takahashi (Yamagata Univ.)
- 113 Non-thermal Process for Dechlorinating from Polyvinyl Chloride (PVC) by Means of Its Dry Mechanochemical Reaction with an Inorganic Compound by G. Mi, T. Takanoashi and F. Saito (Tohoku Univ.)
- 114 ZnO Thin Film Processing by Dip Coating by T. Nishino, K. Sugawara and T. Sugawara (Akita Univ.)
- 115 Sol-Gel Synthesis of $Zn_2SiO_4:Mn$ Thin Film for Electroluminescent Devices by H. Moriyama, M. Takahashi, K. Sugawara and T. Sugawara (Akita Univ.)
- 116 Microstructure Study on Co-Cr Based Thin Films Using Corrosion Measurement by K. Harada, N. Honda and K. Ouchi (Akita Res. Inst. Advanced Tech.)
- 117 Sputtered Carbon Thin Film for Protective Layer of Hard Disk Medium by T. Chiba, N. Honda and K. Ouchi (Akita Res. Inst. Advanced Tech.)
- 118 Influence of Annealing Temperature on the Structure, Dielectric and Electric Properties of Sol-Gel Derived SiO_2 Thin Film by S. Zhang, X. Wang and N. Yoshimura (Akita Univ.)
- 119 Analysis for Noise Reduction Characteristics of Ceramic Varistor Using Circuit Simulator by M. Suzuki, S. Shibata and N. Yoshimura (Akita Univ.)
- 120 Characteristics of Advanced Multi-layer Chip Varistor by T. Ogasawara, T. Yamazaki, K. Sugawara and T. Sugawara (TDK Corp.)

- 121 Characterization of Cr-doped ZnO Varistor Synthesized by Wet Chemical Methods by T. Kato, K. Sugawara, T. Sugawara and T. Ogasawara (Akita Univ.)
- 122 Preparation of Bioactive Silicate Ceramics/Metal Composite by Electrophoretic Deposition by S. Hayashi, K. Konno, J. Xu and Z. Nakagawa (Akita Univ.)
- 123 Separation of Gases with Inorganic Membranes; Recent Developments by S. Morooka and K. Kusakabe (Kyushu Univ.)
- 124 Formation of Insulator/Conductor Nano Layered Material through Gallery Oxidation of Chlorite-like Clay by K. Fuda, S. Narita, K. Murakami and T. Matsunaga (Akita Univ.)
- 125 Dynamic Pile Up of Dislocations in Semiconductor Crystals by K. Imai, Y. Kinno and M. Kurashige (Iwate Univ.)
- 126 Decomposition of Oxalate Precursor of Barium Titanium by Z. Nakagawa, J. Xu, S. Tsutai and S. Hayashi (Akita Univ.)
- 127 Numerical Simulation in Floating Zone Silicon Crystal Growth Process by Y. Masuda, M. Yoneya, S. Sumi, D. Suzuki, T. Tsukada, M. Hozawa and M. Fujishima (Tohoku Natl. Ind. Res. Inst.)
- 128 Preparation and TSC characteristics of Ferroelectric Thin Films by S. Fujita, Y. Masuda, A. Watazu, S. Ando and T. Tsukamoto (Hachinohe Inst. Tech.)

129 Surface Analysis of Electron Beam Irradiated Polyetheretherketone by K. Shinyama, M. Baba and S. Fujita (Hachinohe Inst. Tech.)

130 Studies on Mechanochemical Stability of Mesoporous Molecular Sieves, MCM-41 and MCM-48 by ²⁹Si-MASNMR, XRD and N₂ Adsorption by S. Nakata, Y. Tanaka, K. A. Koyano, N. Igarashi and T. Tatsumi (Chiyoda Corp.)

131 Adsorption of 2-Mercaptobenzothiazole onto CuS and CuO Clusters by the Molecular Orbital Method by Y. Numata, H. Kaita, R. Liang, K. Takahashi and K. Makino (Akita Univ.)

132 Adsorption of Methylene Blue and Crystal Violet on Alumina Pillared Mica by M. Taki, S. Kitabayashi, T. Shindo and S. Ozawa (Akita Univ.)

133 Fluorescent Molecular Sensor by Regio-selective Modified Sodium Anthranilate Cyclodextrins by F. Hamada, K. Nakamura, H. Araki and Y. Higuchi (Akita Univ.)

134 Molecular Recognition System of 4-Amino p-Terphenyl Modified β - and γ -Cyclodextrins by S. Itou and F. Hamada (Akita Univ.)

135 Fluorescent Sensing of Metal Cations by Dansyl-Modified Thio-calix[4]arens by Y. Higuchi and F. Hamada (Akita Univ.)

B-P1

101 A Monitoring System for the Slurry Flow in Horizontal Pipes with Personal Computers by Y. Cui, H. Sato, F. Sugimoto and Y. Tozawa (Akita Univ.)

102 Area Extract Method for Image Diagnosis on Temporal Lobe Atrophy by A. Takahashi, S. Abe, I. Namura and M. Nishida (Akita Univ.)

103 Comparison of SAR Data and Landsat TM Data for Estimation of Water Areas in the Amazon by Y. Kageyama, M. Nishida and N. Hida (Akita Univ.)

104 The Effectiveness of SRG Selection on Genetic Algorithm by K. Kojima, M. Ishigame and H. Matsuo (Akita Univ.)

105 Water Quality Analysis Based on the Remote Sensing Data and Numerical Model by Y. Kageyama and M. Nishida (Akita Univ.)

106 Distinction of Human from Animals with the Infrared and Visual Image by S. Taguchi, M. Nishida, Y. Kageyama and Y. Kohama (Akita Univ.)

107 Experiments of Electromagnetic Wave Propagation in Water at VHF Band by Y. Kudo and H. Inoue (Akita Univ.)

108 Feature Extraction and Analysis for Lip Reading by M. Ishii, K. Sato and M. Nishida (Akita Univ.)

109 Influence of Reflection Characteristics of Material on the Image Quality in Automatic Inspection System by L. Shen, M. Suzuki and N. Yoshimura (Akita Univ.)

110 Effects of Difference of Gain between Sensors When Measuring Surface Profile Using Multiple Sensors by E. Okuyama and H. Moritoki (Akita Univ.)

111 Material Image Database by R. Zhaoyang and H. Tamamoto (Akita Univ.)

112 Improvement in the Medium Noise Properties of the Co/Pd Multilayer Films for Perpendicular Magnetic Recording by L. Wu, N. Honda and K. Ouchi (Akita Res. Inst. Advanced Tech.)

- 113 **Effect of Saturation Magnetization of Head Material on Recording Properties** by K. Taguchi, K. Yamakawa, N. Honda and K. Ouchi (Akita Res.Inst. Advanced Tech.)
- 114 **Magnetic Properties of Perpendicular Magnetic Recording Media Sputter-deposited at Low Temperature on Plastic Substrates** by M. Uchida, L. Wu, N. Honda and K. Ouchi (Akita Res.Inst. Advanced Tech.)
- 115 **Semirelativistic APW Band Calculations of La Monochalcogenides** by H. Oishi and A. Narita (Akita Natl. Coll. Tech.)
- 116 **Application of Fluoropolymer to Shock Pressure Sensor** by K. Murata, K. Takahashi, Y. Kato and K. Murai (NOF Corporation)
- 117 **The Influence of Superstructures on the Tree Initiation of LLDPE** by P. Yan and N. Yoshimura (Akita Univ.)
- 118 **Characteristics of Surface Discharges on Organic Insulating Materials** by S. Hasegawa, S. Kumagai, X. Wang, K. Kobayashi and N. Yoshimura (Akita Natl. Coll. Tech.)
- 119 **Treeing Breakdown in Epoxy Resin with Filler** by M. Ruike, S. Fujita, M. Baba, F. Noto and T. Sakai (Hachinohe Natl. Coll. Tech.)
- 120 **Performance of Silicone Rubber Insulator against Acid Rain** by X. Wang, S. Kumagai, K. Kobayashi and N. Yoshimura (Akita Univ.)
- 121 **Solid Residue Formation of Alumina-trihydrate Filled Silicone Rubber Due to Surface Discharge** by S. Kuma-gai, X. Wang and N. Yoshimura (Akita Univ.)
- 122 **Study on the Relationship between Partial Discharges and Defects in Groundwall Insulation of Generators** by X. Wu (Xian Jiaotong Univ.), Y. Li (Xian Insulating Material Works)
- 123 **DC Electrical Conduction in NCBT MLC at Elevated Temperature** by Y. Zhou and N. Yoshimura (Akita Univ.)
- 124 **Theoretical Treatment on Thermal Buckling Analysis of Thin Plate Due to Moving Heat Source** by R. Kawamura, Y. Tanigawa and H. Watanabe (Osaka Pref. Univ.)
- 125 **Axisymmetrical Elastic Analysis and Stress Intensity Factor for a Nonhomogeneous Thick Plate Containing Penny Shaped Crack** by S. Jeon and Y. Tanigawa (Osaka Pref. Univ.)
- 126 **Efficient Calculation of Thermally Induced Interfacial Stress between a Thin Film and a Substrate** by M. Takahashi and Y. Shibuya (Akita Univ.)
- 127 **Modified Theory of Plasticity in Soil** by H. Moritoki and E. Okuyama (Akita Univ.)
- 128 **A Simulation of Effective Elastic Moduli and Wave Velocities in Fluid Saturated Sintered Spherical Particles** by M. Kurashige, T. Hayashi and K. Imai (Iwate Univ.)
- 129 **Energy Reflectance of SH Waves from an Inhomogeneous Elastic Media** by K. Miur and T. Ohyoshi (Akita Univ.)
- 130 **To Measure Elastic Constants by Laserultrasonic Technique** by J. Z. Shen (Chinese Academy of Science)

- 131 Waves in a Cylindrically Anisotropic Elastic Solid by K. Watanabe and T. Yamazaki (Yamagata Univ.)
- 132 Application of Wavelet Analysis to Regularization of Inverse Problems for Scattered Waves by S. Biwa, T. Hayashi, Y. Saruta, E. Matsumoto and T. Shibata (Kyoto Univ.)
- 133 Modeling of Random Fiber Composite by Voronoi Tessellation for a Parallel Computing by Y. Shibuya and H. Sato (Akita Univ.)
- 134 Simulation of Lamb Wave Generated and Detected by an Air-coupled Transducer by T. Hayashi, S. Endoh, H. Ohya, S. Koyanaka and S. Biwa (Natl. Inst. for Resources and Environ.)
- 135 Integrated Design Concept for Actively Controlled Systems by G. Obinata (Akita Univ.)

Oct. 28 13:00~15:00

A-P2

- 201 Siliceous Shale: Its Mineralogy and Utilization by H. Murakami and S. Honda (Akita Univ.)
- 202 Two Different Forms of Water in Hydrothermal Quartz by D. Ishiyama, O. Matsubaya, K. Shinoda, N. Aikawa and T. Shimizu (Akita Univ.)
- 203 Photoelectron-Detector Based Pulse Train Analysis System to Apply for Volcanic Rock TL Dating by R. Igarashi, S. Itoh and I. Takashima (Akita Univ.)
- 204 Texturing Method Using ER Fluid under Alternative Electric Field by Y. Akagami, Y. Ogasawara, S. Nishi-mura, B. Jeyadevan and T. Fujita (Akita Univ.)

- 205 A Method for Measuring the Viscosity of Liquids Using a Piezoelectric Vibrating Plate by K. Imano and H. Inoue (Akita Univ.)
- 206 Influence of Particle Size and Shape on the Rheological Properties of Magnetorheological Fluid Dispersing Carbon Coated Iron Particles by K. Yoshimura, A. Nagai, B. Jeyadevan, E. Kuzuno, T. Fujita and H. Chiyoda (Akita Univ.)
- 207 Coloring of Iron Powder by Multi-Layers of Alternate Silica and Titania Films by T. Atarashi, A. Kishimoto and K. Nakatsuka (Nittetsu Mining Co.)
- 208 Preparation of Magnetic Fluids Having Active Gasses Resistance and Ultra Low Vapor Pressure for Magnetic Fluid Vacuum Seals by Y. Yamamoto, Y. Takeishi, Y. Koda and T. Kanno (NOK Corp.)
- 209 Acetic, Lactic, and Phosphoric Acids Electrodialyses for In Situ Product Removal in Organic Acid Fermentation by H. Takahashi, R. Sugawara and K. Kikuchi (Akita Univ.)
- 210 Structural Effect of the Aliphatic Carboxylic Acid on the Solubility Characteristics of Metal Carboxylates into the Organic Phase by Y. Moriya, M. Sugai and N. Ogawa (Akita Univ.)
- 211 Treatment of Wastewater Containing Cadmium and Arsenic Ions by T. Fujita, T. Nakayashiki, E. Kuzuno, B. Jeyadevan, K. Kano and Y. Suzuki (Akita Univ.)
- 212 Research of the Dialytic Membranes for the Dissolved Gases in the Power-Transformer Oil by D. M. Xiao, B. Lu and H. L. Liu (Shanghai Jiaotong Univ.)

213 Crushing of Concrete Blocks by Lightning Discharge Impulse for Recycle of Aggregate in Used Concrete Blocks by I. Yoshimi, B. Jayadevan, M. Sato, Y. Tanaka and T. Fujita (Nittetsu Mining Co.)

214 Recycling of Machined Chip of ZK60 Magnesium Alloy by Hot Extrusion by M. Nakanishi, M. Mabuchi, N. Saito, M. Nakamura and K. Higashi (Nat. Ind. Res. Inst. Nagoya)

215 A System Dynamics Modeling Approach to the Base Metals Supply and Recycling by T. Adachi (Univ. Tokyo)

B-P2

201 Measurement of Thermal Conductivity of High Performance Insulating Materials by E. Yamada, T. Miyazaki, J. Kou and K. Takahashi (Akita Univ.)

202 Edge Crack Problem in a Semi-Infinite FGM Plate with Bidirectional Coefficient of Thermal Expansion under Two Dimensional Thermal Load by N. Noda (Shizuoka Univ.)

203 Three-Dimensional Transient Piezothermoelasticity of a Piezoelectric Rectangular Plate Due to Partial Heating by Y. Ootao and Y. Tanigawa (Osaka Pref. Univ.)

204 Estimation of the Deterioration Mechanism of Heavy Duty Coating System by Dielectrical Character by T. Kitagawa (NKK Corporation)

205 Mechanical Properties of Chromium White Cast Iron at High Temperature by C. Liu, S. Aso, S. Goto, Y. Komatsu, W. Liu and M. Lu (Akita Univ.)

206 Tough Hardening of As-Heat-Treated Cemented Carbides by W. Liu, M. Lu, S. Goto, S. Aso, Y. Komatsu and C. Liu (Akita Univ.)

207 Influence of Ostwald Ripening on High-Temperature Deformation in Precipitation Hardened Alloys by M. Lu, S. Goto, S. Aso, W. Liu, Y. Komatsu and C. Liu (Akita Univ.)

208 Metal Corrosion in MCFC by N. Motohira, K. Toda, N. Kamiya and K. Ota (Yokohama Natl. Univ.)

209 Automatic Breaking System for Large Rocks by Use of CCD Cameras and Laser Pointer by H. Takahashi (Tohoku Univ.)

210 Stresses at a Normally Off-Angled Interface between Two Anisotropic Elastic Solids by N. Ito, Y. Uraki, K. Ogisawa and K. Watanabe (Yamagata Univ.)

211 Running-in Behavior of Repeated Dry Wear on Metals by K. Kikuchi, O. Kamiya, K. Kumagai and Y. Saito (Akita Univ.)

212 Grinding Ability of Metal Coated Diamond Composite Sintered Tool by T. Ishikawa, T. Kida, O. Kamiya and H. Moritoki (Akita Univ.)

213 Evaluation of Grinding Conditions by Corresponding Work Index in Wet Fine Grinding by N. Kotake, D. Yamano and Y. Kanda (Yamagata Univ.)

214 Application of Non-Ferrous Metal Slag to Aggregate for Concrete by M. Shoya, S. Sugita, Y. Tsukinaga and M. Aba (Hachinohe Inst. Tech.)

215 Experimental Study on Basic Physical Properties of Modified Asphalt and Performance of Pavement by S. Taguchi, Y. Inaba and S. Kokubun (Obayashi Road Corp.)

LANGUAGE

The official language of the conference is English.



REGISTRATION

All participants are requested to register with payment in Japanese Yen by direct bank transfer.

Registration ¥30,000

Banquet ¥10,000



**THIRD INTERNATIONAL CONFERENCE
ON MATERIALS ENGINEERING
FOR RESOURCES (ICMR'98, AKITA)**

PLACE : AKITA VIEW HOTEL

DATE : Oct. 26~28, 1998

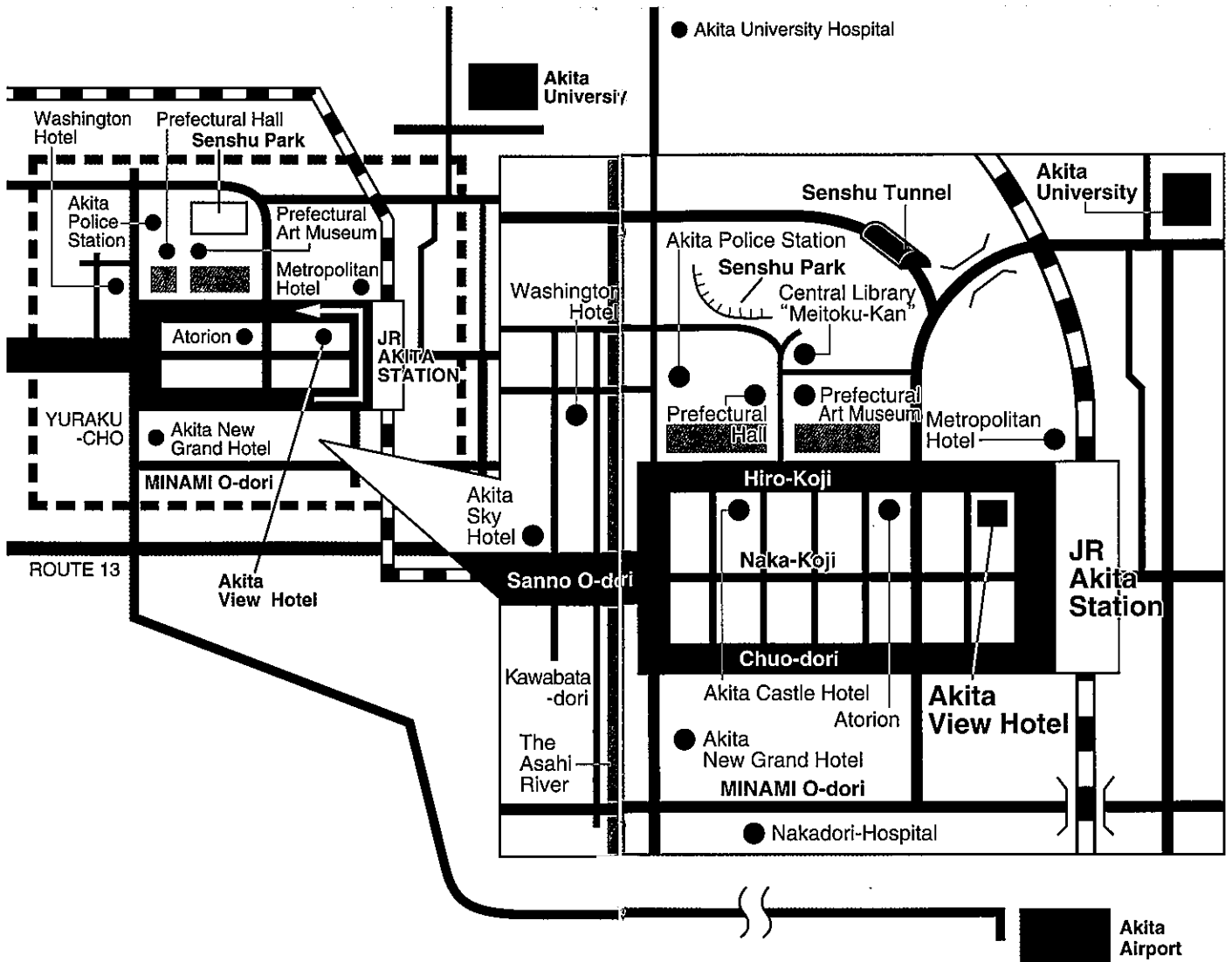
BANQUET : Oct. 26, 1998

LODGING : Oct. 25~29, 1998

single, twin,
or double

**TOUR : Oct. 30, 1998
(optional)**

MAP OF CONFERENCE SITE



Limousine bus (40min)*, or Taxi (30min)
 *) connected by each domestic airline

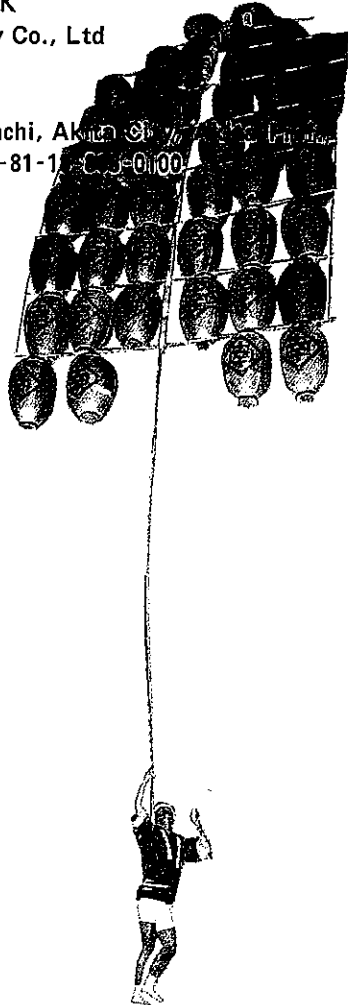
ACCOMMODATIONS

The Executive Committee has appointed Nippon Travel Agency (NTA), Akita Branch as the official travel agent in charge of travel and hotel arrangements.

Please contact by mail or fax:

Toru Sasaki
ICMR'98 AKITA DESK
Nippon Travel Agency Co., Ltd
Akita Branch

Address. 2-2-12, Omachi, Akita City, Akita Prefecture
010-0951 Japan Fax +81-18-853-0100



SHORT INTRODUCTION TO AKITA

Located in the northwestern part of the main island Honshu (around 40° north latitude and 140° east longitude), AKITA has been famous for its abundant underground resources including gold, copper and oil since ancient times, and is now attracting high technological industries for the diligent and sincere attitude of its residents.

At the same time, AKITA is known as the base of rice, cedar and electricity, with nice resorts facing the Sea of Japan on the west and hot-springs especially in the mountain area on the eastern border. Each distinct season offers its own scenic charm : special, 'golden autumn' in October. Temperature is around 13°C (average), 18 °C (day time), 8 °C (night time) in late October with mild and fair weather.

It takes 1 hr from Haneda (Tokyo) with 5 flights daily (All Nippon Airways 3 flights, Japan Airline 2 flights). Flight service is also available from Osaka, Nagoya, Fukuoka, and Sapporo. You can also enjoy a 4 hr bullet-train trip from Tokyo by Akita-Shinkansen, KOMACHI.

TIMETABLE

August 31, 1998 |
Deadline for pre-registration for overseas

September 20, 1998 |
Deadline for pre-registration for domestic



MAILING ADDRESS

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CORRESPONDENCE

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E-mail
icmr98@s3eco.as.akita-u.ac.jp
For more information :
<http://icmr98.ie.akita-u.ac.jp>

Please contact the Executive Committee through
facsimile or E-mail if you have questions.

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