

**International Conference on  
Civil and Environmental Engineering  
(ICCEE-2008)**

**October 9 to 10, 2008  
Faculty Club (Gakushi-Kaikan), Hiroshima University  
Higashi-Hiroshima, Japan**

***Organized by:***

**Dept. of Social and Environmental Engineering, Hiroshima University, Japan  
Dept. of Civil Engineering, Thammasat University, Thailand  
Dept. of Civil Engineering, The University of Queensland, Australia  
Dept. of Civil and Environmental Engineering, The University of Iowa, USA  
Dept. of Civil Engineering, The University of Peradeniya, Sri Lanka  
Dept. of Ocean Engineering, Pukyong National University, Korea**

***Supported and sponsored by:***

**Dept. of Social and Environmental Engineering, Hiroshima University**

***Cosponsored by:***

**Chugoku Branch, Japan Society of Civil Engineers  
Electric Technology Research Foundation of Chugoku**

***Supported by:***

**Chugoku Branch, Japan Society of Civil Engineers  
Chugoku Branch, the Japan Geotechnical Society  
Chugoku Branch, Japan Concrete Institute  
Chugoku Branch, the Society of Materials Science, Japan**

## History and Objectives of This Conference

The present international conference had started as an inter-university exchange program between Hiroshima University and Thammasat University in 2002. The ultimate goals of this international conference are to expand the presence of civil engineering not only in Japan but also throughout Asia and all over the world, and from a broad civil engineering perspective, to achieve new breakthroughs towards sustainable, recycling-oriented society. For this purpose, in 2003 the international exchange was expanded to the University of Iowa, U.S.A., the University of Queensland, Australia and the University of Peradeniya, Sri Lanka, which had concluded inter faculty exchange agreement with the Faculty of Engineering, Hiroshima University. We hope that this conference will bring great value to all the participants for the study and the education.

In 2007, the sixth international conference (ICCEE-2007) was successfully held at Hiroshima University, emphasizing the Civil Infrastructures for sustainable development. In addition to two keynote lectures addressed by the distinguished professors from the University of California, Davis, USA, and Tsinghua University, China, 45 presentations were made by Hiroshima University and overseas participants. Moreover, Hiroshima University and overseas students successfully organized a student workshop “Present State of Measures and Future Prospects for Environmental Problems in Public Works”.

In 2008, the seventh international conference (ICCEE-2008) is being held at Hiroshima University. Three keynote lectures will be given by the eminent professors from the University of California, Davis, USA, National Cheng Kung University, Republic of China, and the University of Queensland, Australia. The researchers and students from 6 countries (Australia, Canada, Korea, Republic of China, USA, and Japan) will participate in this conference. Hiroshima University and overseas students will organize a student workshop “Technical Approaches against Natural Disasters in Each Countries”. We hope that this work will stimulate young researchers and students.

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## Program

October 9, 2008

**12:30–12:50 Registration**

**12:50–13:00 Opening**

**Prof. Akiyoshi Oohashi**

Chairman of Organizing Committee, Hiroshima University

**13:00–13:50 Keynote Lecture 1**

Chairperson: Prof. Hideharu Nakamura, Hiroshima University

**Prof. Nesrin Sarigul-Klijn**, University of California, Davis, USA

*SMART MONITORING OF STRUCTURAL HEALTH IN FLIGHT ENVIRONMENT*

**13:50–14:20 Coffee Break**

**14:20–15:20 Session 1a: Environmental Engineering**

Chairperson: Assis. Prof. Tomonori Kindaichi, Hiroshima University

**Presentations and discussions (3 papers)**

Masashi Hatamoto, Post doc., Hiroshima University

*DIVERSE MICROORGANISMS INVOLVED IN BUTYRATE DEGRADATION IN METHANOGENIC SLUDGES REVEALED BY RNA-BASED STABLE ISOTOPE PROBING*

Chuang Hui-Ping, Post doc., Hiroshima University

*ESTABLISHMENT OF A ONE-STAGE NITROGEN-REMOVAL PROCESS IN A DOWN-FLOW HANGING SPONGE (DHS) REACTOR*

Kenichi Abe, Graduate Student, Nagaoka University of Technology

*EFFECTS OF FREE AMMONIA AND SALINITY ON NITRITATION IN SPONGE-AIRLIFT REACTOR*

**14:20–15:20 Session 1b: Structural Engineering**

Chairperson: Assoc. Prof. Katashi Fujii, Hiroshima University

**Presentations and discussions (3 papers)**

Ryouichi Satake, Chuden Engineering Consultants

*THE DETECTION OF STRUCTURAL DETERIORATION AND LOW-FREQUENCY NOISE SOURCES USING HYPER-VISION TECHNOLOGY*

Tatsuya Sasaki, Graduate Student, Hiroshima University

*ULTIMATE SLIP BEHAVIOR OF PBL INSIDE CIRCULAR STEEL TUBE*

Jin-Ho Woo, Graduate Student, Pukyong National University

*COLLISION ANALYSIS OF CONCRETE MATTRESS USING ANSYS AUTODYN*

**15:20–16:20 Poster Session a (14 papers)**

Chairperson: Assis. Prof. Tomonori Kindaichi, Hiroshima University

Takanori Awata, Graduate Student, Hiroshima University

*THE ACTIVITY BY ADDITION OF ORGANIC MATTER IN THE ANAMMOX PROCESS*

Hiroya Kodera, Graduate Student, Hiroshima University

*EFFECT OF ANAEROBIC/AEROBIC INTERVAL ON ENHANCED BIOLOGICAL PHOSPHORUS REMOVAL USING TUBULAR BIOFILM REACTOR*

Akihiro Nakazato, Graduate Student, Hiroshima University

*PHOTOCATALYTIC DECOMPOSITION OF PAHS WITH TiO<sub>2</sub> AND THEIR TOXICITY ASSESSMENT*

- Takayuki Yokota, Graduate Student, Hiroshima University  
*DIRECT PRODUCTION OF ELECTRIC ENERGY THROUGH MICROBIAL FUEL CELLS*
- Kiichi Ikehara, Graduate Student, Hiroshima University  
*INTERANNUAL VARIATION OF FLOW-FIELD IN A SEMI-CLOSED SEA WITH TWO ENTRANCES FACING AN OCEAN CURRENT*
- Touch Narong, Graduate Student, Hiroshima University  
*FORMATION OF THE WATER CIRCULATION BY CONSTRUCTION OF INFILTRATION-PILLAR IN THE RIVERBANK THAT SLUDGE DEPOSITS*
- Shinya Nakashita, Graduate Student, Hiroshima University  
*INVESTIGATION OF WATER EXCHANGE IN A HYPORHEIC ZONE IN A TIDAL ESTUARY*
- Masataka Imagawa, Graduate Student, Hiroshima University  
*RE-SUSPENSION CHARACTERISTICS OF SEA BOTTOM SEDIMENT ON THE SEA BOTTOM*
- Kiichi Ikehara, Graduate Student, Hiroshima University  
*CHARACTERISTICS OF SUSPENDED PARTICULATE ORGANIC MATTERS IN THE HIROSHIMA BAY*
- Kyung-Hoi Kim, Graduate Student, Hiroshima University  
*MODELING OF SETTLING PROCESS OF ORGANIC MUD CONSIDERING BIODEGRADING*
- Gun-Woo Kim, Graduate Student, Pukyong National University  
*THE EFFECT OF WIND ON THE STORM SURGE IN BUSAN*
- Sayaka Oshida, Graduate Student, Hiroshima University  
*MEASUREMENT OF PHYSICAL ENVIRONMENT OF RIVER WITH TERRESTRIAL LASER SCANNING*
- Yasuhiro Iwakoke, Graduate Student, Hiroshima University  
*TWO-DIMENSIONAL NUMERICAL SIMULATION OF FLOW AT LOW WATER DEPTH IN MINOCHI RIVER*
- Susumu Yoshida, Graduate Student, Hiroshima University  
*DEVELOPMENT OF A SENSOR FOR CONTINUOUS MEASUREMENT OF SCOUR DEPTH IN RIVERS*

**15:20–16:20 Poster Session b (13 papers)**

- Chairperson: Assis. Prof. Takeo Ishida, Hiroshima University
- Ken Ikegashira, Graduate Student, Hiroshima University  
*A STUDY ON ACTIVE VIBRATION CONTROL OF FRAMED STRUCTURES CONSIDERING MATERIAL NONLINEARITY*
- Jin-Ho Woo, Graduate Student, Pukyong National University  
*VELOCITY CHANGES OF GUIDED ULTRASONIC WAVES PROPAGATING IN CURVED STEEL PLATES AND SHELLS*
- Jong-Cheol Jeong, Graduate Student, Pukyong National University  
*HYDRAULIC CHARACTERISTICS OF A WAVE DISSIPATING QUAY WALLS - FOCUS ON VARIATION OF WATER-LEVEL*
- Koji Ichii, Assoc. Prof., Hiroshima University  
*SIMULTANEOUS FAILURE PROBABILITY OF QUAY WALLS AT MULTIPLE SITE*
- Seiji Kano, Assis. Prof., Hiroshima University  
*BOUNDARY EFFECTS ON THE THREE DIMENSIONAL SEISMIC RESPONSES OF EMBANKMENTS*

Kazuaki Uemura, Graduate Student, Hiroshima University  
*STUDY ON IMPROVED ASSESSMENT OF LIQUEFACTION POTENTIAL  
AGAINST EARTHQUAKE MOTION WITH LONG DURATION*

Hiroki YURI, Graduate Student, Hiroshima University  
*A NEW METHOD TO PREDICT LANDSLIDE DISASTERS USING AN  
ODOR SENSOR*

Masato Nishina, Graduate Student, Hiroshima University  
*EXPERIMENTAL STUDY ON SULFURIC ACID RESISTANCE MECHA-  
NISMS OF CONCRETE WITH COMBINED MINERAL ADMIXTURES*

Katsuaki Komai, Assistant Professor, Hiroshima University  
*GROUNDWATER DISCHARGE TO A TIDAL ESTUARY ESTIMATED  
FROM SALINITY MEASUREMENTS AND A BOX MODEL*

Hisaya Nishimura, Graduate Student, Hiroshima University  
*CHARACTERISTICS OF FLUID MUD DISTRIBUTION ON THE SEA BOT-  
TOM*

Yusuke Aoki, Graduate Student, Hiroshima University  
*VALUE OF ENVIRONMENTAL IMPACT DUE TO TRANSPORTATION IN  
UTILIZATION OF FLY ASH*

Shuhei Kayahara, Graduate Student, Hiroshima University  
*ESTIMATION OF LOCAL PRODUCTION FUNCTION CONSIDERING THE  
SPATIAL AND TEMPORAL RIPPLE EFFECT OF INFRASTRUCTURE*

Shinichi Inoue, Graduate Student, Hiroshima University  
*CHARACTERISIC OF TEMPORAL DEMAND DISTRIBUTION DECOM-  
POSED BY INDEPENDENT COMPONENT ANALYSIS*

**16:20–16:50 Coffee Break**

**16:50–17:30 Session 2a: Environmental and Coastal Engineering**

Chairperson: Assis. Prof. Katsuaki Komai, Hiroshima University

**Presentations and discussions (2 papers)**

Fahmida Hoque Khan, Resercher, Hiroshima University

*LIGHT INDUCED CONCENTRATION CHANGE OF AQUATIC DISSOLVED  
IRON FORMS AND THE SPECTROPHOTOMETRIC DETERMINATION WITH  
FERROZINE*

Jin-Hyuk Kim, Graduate Student, Pukyong National University

*NUMERICAL PREDICTION OF VARIATION FOR OXYGEN DEFICIENT  
WATER MASS BY REDUCTION TO POLLUTANT LOADS IN JINHAE BAY*

**16:50–17:30 Session 2b: Structural Materials & Concrete Structures, Geotechnical En-  
gineering**

Chairperson: Assoc. Prof. Kenji Kawai, Hiroshima University

**Presentations and discussions (2 papers)**

Mohamed Seddik Meddah, Visiting Resercher, Hiroshima University

*DOES INDUSTRIAL WASTE FIBRES COULD BE USED AS REINFORCE-  
MENT FOR CEMENT MATRICES?"*

Yoshiya Hata, Nippon Koei Co. ltd.

*SEISMIC PERFORMANCE OF EXPRESSWAYS EVALUATED BY THE  
SLOPE STABILITY OF EMBANKMENT*

**18:30–20:30 Party**

*October 10, 2008*

**9:10–10:00 Keynote Lecture 2**

Chairperson: Prof. Akiyoshi Oohashi, Hiroshima University

**Prof. Sheng-Shung Cheng**, National Cheng Kung University, Republic of China

*PILOT STUDY ON ANAEROBIC BIO-HYDROGEN PROCESS DEGRADING KITCHEN WASTE*

**10:00–10:50 Keynote Lecture 3**

Chairperson: Assoc. Prof. Kiyoshi Kawanishi, Hiroshima University

**Dr. Thomas E. Baldock**, University of Queensland, Australia

*RECENT ADVANCES IN MODELLING SWASH ZONE HYDRODYNAMICS AND SEDIMENT TRANSPORT*

**10:50–11:20 Coffee Break**

**11:20–12:20 Session 3a: Coastal Engineering**

Chairperson: Assoc. Prof. Tadashi Hibino, Hiroshima University

**Presentations and discussions (3 papers)**

Sung-Hoon Ryu, Graduate Student, Pukyong National University

*ANNUAL VARIATION OF TOPOGRAPHICAL CHANGE AND VEGETATION DISTRIBUTION AT JINUDO IN THE NAKDONG ESTUARY*

Soon Park, Graduate Student, Pukyong National University

*COMPARISON OF MEASURED WAVE DATA BETWEEN NAKDONG RIVER ESTUARY AND GEOJE FLOATING BUOY*

Touch Narong, Graduate Student, Hiroshima University

*MECHANISM OF ORGANIC MATTER MOVEMENT CAUSED BY GROUNDWATER FLOW IN A TIDAL FLAT*

**11:20–12:00 Session 3b: Geotechnical Engineering**

Chairperson: Assoc. Prof. Koji Ichii, Hiroshima University

**Presentations and discussions (2 papers)**

Patricia M. Gallagher, Associate Professor, Drexel University

*EXPERIMENTAL INVESTIGATIONS OF COLLOIDAL SILICA STABILIZATION TO ADVANCE SEISMIC RISK MANAGEMENT OF PORT SYSTEMS*

Carolyn Conlee, Graduate Student, Drexel University

*CENTRIFUGE MODELING OF LIQUEFIABLE SAND STABILIZED WITH COLLOIDAL SILICA GROUT*

**12:20–13:30 Lunch**

**13:30–15:00 Student Workshop**

*Technical Approaches against Natural Disasters in Each Country*

Chairperson:

Shinya Nakashita, Hiroshima University

Presentars:

Taichi Sato, Hiroshima University

Hiroyuki Yamamoto, Hiroshima University

Tsubasa Arikawa, Hiroshima University

Noriko Fujimoto, Hiroshima University

Taichi Sato, Hiroshima University

Gui-Ran Bark, Pukyong National University

Tae-Gyu Ahn, Pukyong National University

Hannah Power, University of Queensland

Garolyn Conlee, Drexel University

Panelists:

Phetkaysone Anongdeth, Hiroshima University  
Yoshihiko Tokinori, Hiroshima University  
Won-Chul Kim, Hiroshima University  
Md. Moshur Rahman, Hiroshima University  
Cao Thi Thuy Linh, Hiroshima University  
Jong-Cheol Jeong, Pukyong National University

**15:00–15:30 Coffee Break**

**15:30–16:30 Session 4a: Coastal Engineering**

Chairperson: Assoc. Prof. Kiyoshi Kawanishi, Hiroshima University

**Presentations and discussions (3 papers)**

Hannah Power, PhD Student, University of Queensland

*WAVE BEHAVIOUR IN THE INNER SURF ZONE*

Mahdi Razaz, Graduate Student, Hiroshima University

*SUSPENDED SEDIMENT TRANSPORT DURING A WINTER IN OHTA FLOODWAY*

Gun-Woo Kim, Graduate Student, Pukyong National University

*REFLECTION CHARACTERISTIC TO COVERING SHAPE OF DISSIPATION BLOCK*

**15:30–16:10 Session 4b: Infrastructure Planning**

Chairperson: Assoc. Prof. Makoto Tsukai, Hiroshima University

**Presentations and discussions (2 papers)**

Masashi Kuwano, Assis. Prof., Hiroshima University

*DEVELOPMENT OF DISCRETE CHOICE MODEL WITH MULTI-DIMENSIONAL SOCIAL INTERACTION*

Lili Xu, Graduate Student, Hiroshima University

*COMPARISON FOR MARRIED FEMALE'S QUALITY OF LIFE BY EMPLOYMENT STATUS: A TIME USE APPROACH*

**16:30–16:40 Closing**

**Assoc. Prof. Koji Ichii**

Chairman of Local Organizing Committee, Hiroshima University