

November 6, Tuesday

Seminar Room 401

**Registration** 09:00 – 16:30

Lecture Hall

Seminar Room 403

**Opening Address** 09:30 – 09:40  
Chairman of Organizing Committee of IAES-24 T. Shiotani (Kyoto University)

**Keynote Lecture I** 09:40 – 10:20

**Interpretation and Validation of Acoustic Emission Indications** (*Only Presentation*)  
A. Anastasopoulos (Mistras Group Hellas, Greece)

**Concrete I** 10:20 – 11:00

**Acoustic emission measurements during three-point bending fatigue test on a prestressed reinforced concrete railroad sleeper**  
G. Manthei (THM University of Applied Sciences, Germany), M Koob, M. Walther, J. Minnert, H. Moriya (Tohoku University)

**ISO standards of AE measurements in concrete**  
M. Ohtsu (Kyoto University, Japan)

**Sensor** 11:20 – 12:20

**Basic acoustic field response of piezo-electric AE transducers**  
M. Shiwa (Happy Science University, Japan)

**Obtaining AE sensor sensitivity curves verified by laser vibrometry**  
H. Vallen (Vallen Systeme GmbH, Germany)

**Sensing stability of the Fabry-Perot interferometer type optical fiber AE sensor with fiber Bragg gratings**  
H. Yuki (The University of Electro-Communications, Japan), Y. Tsukamoto

**Concrete II** 13:50 – 14:50

**The relation between applied stress and ultrasonic velocity variation in concrete under uniaxial compressive stress**  
K. Ohno (Tokyo Metropolitan University, Japan), K. Uji, A. Ueno, H. Shinozaki (Sumitomo Mitsui Construction Co., Ltd.), K. Tamaki, Y. Nonami

**Acoustic emission data clustering for analysing damage mechanisms due to chloride-induced corrosion in reinforced concrete**  
C. Van Steen (KU Leuven, Belgium), L. Pahlavan (TU Delft), M. Wevers (KU Leuven), E. Verstryngne

**Fundamental study on AE analysis and tomography technique with non-contact laser impact for damage detection in concrete**  
K. Hashimoto (Kyoto University, Japan), T. Shiotani, M. Nishikino (National Institutes for Quantum and Radiological Science and Technology), K. Mikami, N. Hasegawa, T. Kitamura

**Structures & Diagnostics** 15:10 – 16:30

**Attenuation of guided-waves in AE detection**  
K. Ono (University of California, Los Angeles, USA)

**Detection of damage sources in the underground waterworks pipelines by enhanced signal analysis**  
D.-J. Yoon (Korea Research Institute of Standards and Science, Republic of Korea), S.-H. Lee (Korea Research Institute of Standards and Science, University of Science and Technology), C.-S. Park (Korea Research Institute of Standards and Science)

**An iterative method for reconstruction of near surface cavities using guided surface waves**  
B. Wang (Nanjing University of Aeronautics and Astronautics, China), Z. Qian, S. Hirose (Tokyo Institute of Technology)

**Selection of acoustic emission sensor for application of bridge cable monitoring based on experimental results**  
D.-W. Seo (Korea Institute of Civil Engineering and Building Technology, South Korea), G.-Y. Kim, K.-T. Park, D.-H. Kim (Rectuson Ltd.)

**Composite I** 11:20 – 12:20

**Acoustic emission from unilateral bending of large CFRP plates**  
M. Nowak (Central Laboratory of Technical Inspection, Poland), I. Baran, K. J. Konstowicz (University of Bielsko-Biala)

**The influence of multiaxiality in angle-ply carbon/epoxy laminates on the Kaiser/Felicity effects under incremental loading**  
K. A. Kalteremidou (Vrije Universiteit Brussel, Belgium), E. Tsangouri, B. R. Murray (Vrije Universiteit Brussel, SIM M3 Program), L. Pyl (Vrije Universiteit Brussel), D. G. Aggelis, D. Van Hemelrijck  
**Experimental observation of ultrasonic wave propagation in 3D-printed CFRP**  
T. Ashizawa (Tokyo Institute of Technology, Japan), Y. Mizutani, N. Toyama (National Institute of Advanced Industrial Science and Technology), A. Todoroki (Tokyo Institute of Technology), Y. Suzuki

**Metal I** 13:50 – 14:50

**Acoustic emission monitoring of nanoindentation process in pure magnesium**  
C. Yang (The University of Tokyo, Japan), P. Chivavibul, F. Briffod, T. Shiraiwa, M. Enoki

**Study on the micro-damage evolution of aluminum alloy under different stress states based on acoustic emission**  
J. Li (Tianjin University of Science & Technology, China), Z. Jia, G. Qi (Tianjin University of Science & Technology, University of Memphis)

**New insights into phenomenological modelling of acoustic emission during plastic deformation of metals** (*Only Presentation*)  
A. Vinogradov (Norwegian University of Science and Technology, Norway), I. Yasnikov (Togliatti State University), D. Merson

**Composite II** 15:10 – 16:30

**The use of acoustic emission technique to identify micro-damage mechanisms in surface modified sisal fiber-HDPE reinforced composites**  
R. C. Anaya-Ramirez (Centro de Investigación Científica de Yucatán, Mexico), C. R. Rios-Soberanis, P. J. Herrera-Franco

**Damage diagnostic and lifetime estimation for composite material with acoustic emission: interests and limitations**  
N. Godin (INSA Lyon, France), P. Reynaud, C. Fusco, G. Fantozzi

**Behavior of carbon fiber reinforced thermoplastics plate under compression based on AE activities**

R. Murakami (Kyoto University, Japan), T. Shiotani, T. Nishida, K. Naito (National Institute for Materials Science), Y. Hayashi (Komatsu Seiren Co., Ltd.), T. Nakayama, T. Murakami (West Nippon Expressway Co., Ltd.)

**Acoustic emission monitoring of timber beams strengthened with carbon fiber composite**  
E. J. Rescalzo (University of Granada, Spain), Y. Mizutani (Tokyo Institute of Technology), C. Abarkane (University of Granada), E. Suarez, A. Gallego

November 7, Wednesday

Seminar Room 401

**Registration** 09:00 – 16:50

Lecture Hall

Seminar Room 403

**Structures** 09:40 – 11:00

**Detection of rebar corrosion and corrosion-induced cracking by acoustic emission and ultrasonic methods**

T. Watanabe (Tokushima University, *Japan*), K. Nishiyama (West Nippon Expressway Co., Ltd.), H. Fukutomi (Honshu-Shikoku Bridge Expressway Co., Ltd.), C. Hashimoto (Tokushima University)

**Evaluation of damage in RC bridge decks reinforced with steel plates under dynamic wheel-loading test by means of AE activities**

Y. Feng (Kyoto University, *Japan*), T. Shiotani, T. Nishida, H. Asaue, K. Hashimoto, S. Kayano

**Evaluation of crack repair effect for RC slab using velocity distribution of elastic waves**

N. Okude (Kyoto University, Tokai Technology Center, *Japan*), T. Shiotani (Kyoto University), T. Nishida, S. Fruno (New Nippon Consultants Co., Ltd.)

**Fatigue damage evolution of RC slabs considering water infiltration in wheel-loading test by means of 3D AE tomography**

H. Asaue (Kyoto University, *Japan*), T. Shiotani, S. Fukumoto (IHI Inspection & Instrumentation Co., Ltd.), Y. Tanaka (Kanazawa Institute of Technology), T. Maeshima (NIPPO Corp.)

**Masonry** 11:20 – 12:20

**Acoustic emission characterization of fracture modes in masonry under direct shear test**

N. Shetty (Katholieke Universiteit Leuven), G. Livitsanos (Vrije Universiteit Brussel), D. G. Aggelis, D. Van Hemelrijck, M. Wevers (Katholieke Universiteit Leuven, *Belgium*), E. Verstryngne

**AE source localization accuracy optimization in masonry structures**

G. Livitsanos (Vrije Universiteit Brussel, *Belgium*), N. Shetty (Katholieke Universiteit Leuven), E. Verstryngne, M. Wevers, D. Van Hemelrijck (Vrije Universiteit Brussel), D. G. Aggelis

**Numerical simulation of wave propagation in masonry**

G. Livitsanos (Vrije Universiteit Brussel, *Belgium*), N. Shetty (Katholieke Universiteit Leuven), E. Verstryngne, M. Wevers, D. Van Hemelrijck (Vrije Universiteit Brussel), D. G. Aggelis

**Diagnostics (Civil Engineering)** 13:50 – 14:50

**AE measurement of PC cable breakage using a full scale PC beam**

K. Watabe (Toshiba Corp., NMEMS Technology Research Organization, *Japan*), H. Takamine, Y. Ueda, K. Hashimoto (Kyoto University), N. Okude, T. Shiotani

**Propagation characteristics of elastic waves transmitted through sand soils under dry and saturated conditions**

M. Nakayama (Ritsumeikan University, *Japan*), H. Kawakata, S. Hirano, I. Doi (Kyoto University), N. Takahashi (Sumitomo Mitsui Construction Co., Ltd.)

**The universality of b-value and size effect in acoustic emission: experimental observations in quasi-brittle fracture**

N. B. Burud (Indian Institute of Science, *India*), J. M. C. Kishen

**Cements** 15:10 – 16:10

**3D textile reinforced cements: AE inspection of the fracture of this innovative construction material**

L. Michels (Vrije Universiteit Brussel), E. Tsangouri, M. E. Kadi, T. Tysmans, D. G. Aggelis (Vrije Universiteit Brussel, *Belgium*)

**Assessment of fresh cement-based materials by acoustic emission**

E. D. Dzaye (Vrije Universiteit Brussel, Ghent University, *Belgium*), G. De Schutter (Ghent University), D. Aggelis (Vrije Universiteit Brussel)

**Understanding long-term mechanical response of textile reinforced cementitious composites using UPV and AE**

E. Tsangouri (Vrije Universiteit Brussel, *Belgium*), M. De Munck, O. Remy (CRH Structural Concrete Belgium nv), T. Tysmans (Vrije Universiteit Brussel), D. G. Aggelis

**Keynote Lecture II** 16:10 – 16:50

**Contribution of acoustic emission technologies for rational maintenance of infrastructures (Only Presentation)**

T. Shiotani (Kyoto University, *Japan*)

**Manufacturing** 09:40 – 11:00

**Development of evaluation method of contaminations in spur gears using AE method**

K. Sugiyama (Meiji University, *Japan*), T. Matsuo

**Development of wireless AE streaming server for monitoring of materials manufacturing processes**

K. Ito (National Institute for Materials Science, *Japan*), K. Takahashi (The University of Tokyo), M. Enoki

**Wireless AE measurement during friction stir welding of flame-resistant magnesium alloy**

K. Takahashi (The University of Tokyo, *Japan*), T. Shiraiwa, M. Enoki, K. Ito (National Institute for Materials Science), E. Yukutake (Industrial Technology Innovation Center of Ibaraki Prefecture)

**Research of leak testing in manned spacecraft on-orbit by acoustic emission technology (Only Presentation)**

X. Yu (Beijing Institute of Spacecraft Environment Engineering, *China*), L. Qi, L. Sun

**Ceramics, Composite & Rope** 11:20 – 12:20

**AE characterization of thermal shock fracture of ceramics under different stress states**

D. Chiba (Tokyo Metropolitan University, *Japan*), S. Wakayama, T. Matsueda, K. Yoshida (Tokyo Institute of Technology)

**Evaluation of fatigue damage process in a CFRP plate with a self-organizing map for AE waveform**

Y. Nakai (Aoyama Gakuin University, *Japan*), K. Nishimiya, H. Cho

**Evaluation and stabilization of longitudinal elastic modulus of synthetic fiber rope utilizing AT/UT**

Y. Arai (Tokyo Institute of Technology, *Japan*), V. Sry, D. Jung, Y. Mizutani, G. Endo

**Diagnostics (Mechanical Engineering)** 13:50 – 14:50

**Application of acoustic emission technology in condition monitoring of amusement device**

J. Zhang (China Special Equipment Inspection and Research Institute, *China*), G. Shen, Z. Wu, Y. Yuan, R. Liu

**Early fault detection technique using acoustic emission and vibration signal processing for condition monitoring system of rotating machinery**

D.-H. Kim (RECTUSON Co., Ltd., South Korea), Y.-G. Hong, H.-M. Je

**Condition assessment of highly-loaded low-speed bearings using acoustic emission monitoring: a feasibility study**

B. Scheeren (Delft University of Technology, *The Netherlands*), L. Pahlavan, M. Kaminski

November 8, Thursday

Seminar Room 401

**Registration** **09:00 – 16:50**

Lecture Hall

**Diagnostics (Miscellaneous I)** **09:40 – 11:00**

**Acoustic emission technique in identification of cartilage damage in osteoarthritic knee**

M. T. I. Khan (Saga University, *Japan*), M. M. Hassan, Y. Nakamura, Y. Sanada, S. Ide

**Investigation of origin of vibroarthrographic signals for knee osteoarthritis**

T. Sakai (Saitama University, *Japan*), K. Akabane, K. Kodama, K. Kageyama, H. Nakamura (Tokyo Metropolitan University), K. Aimoto (National Center for Geriatrics and Gerontology), K. Hase (Tokyo Metropolitan University), S. Ota (Seijoh University)

**The plastic deformation evaluation of degraded A335 P5 steel of technological pipelines by acoustic emission method**

L. Lyasota (Cracow University of Technology, *Poland*), L. Sarniak (Warsaw University of Technology), J. C. Schmidt

**Use of acoustic emission parameter for detection of hydraulic conditions in service pipeline system**

T. Suzuki (Niigata University, *Japan*), Y. Shimamoto (Kitasato University)

**Diagnostics (Miscellaneous II)** **11:20 – 12:20**

**AE characterization of microdamage during fatigue fracture of flexible solar cell**

T. Matsueda (Tokyo Metropolitan University, *Japan*), S. Wakayama, K. Nakahara (F-WAVE Co., Ltd.), A. Takano

**Detection of packing error in baked products factory utilizing an acoustic emission method**

T. Matsuo (Meiji University, *Japan*), K. Shimonishi, A. Yoshinari, T. Nakamura

**Acoustic emission monitoring during laser surface quenching**

T. Yasuda (National Institute of Technology, Anan College, *Japan*), M. Kaisho, K. Nishimoto, Y. Okumoto

**Signal Processing** **13:50 – 15:10**

**A gas leak location method of spacecraft in-orbit based on acoustic emission**

L. Qi (Beijing Institute of Spacecraft Environment Engineering, Tianjin University, *China*), L. Sun (Beijing Institute of Spacecraft Environment Engineering), Z. Li, R. Yan, Y. Zhao

**A wavelet transform method for noise processing of flaw reconstruction in ultrasonic guided SH waves**

Z. Qian (Nanjing University of Aeronautics and Astronautics, *China*), Y. Da, B. Wang

**Analysis of acoustic emissions due to dynamic fracture**

V. van Gemmeren (ETH Zurich, *Switzerland*), J. Dual

**Zone location and classification of AE source by AI**

Y. Mizutani (Tokyo Institute of Technology, *Japan*), F. Tsuchida

**Metal II** **15:30 – 16:50**

**AE classification in LPSO-Mg extruded alloys using in-situ observation and machine learning**

K. Tamura (The University of Tokyo, *Japan*), T. Shiraiwa, M. Enoki

**A new excitation method for MAE**

Y. Shen (China Special Equipment Inspection and Research Institute, *China*), G. Shen, B. Wang, W. Zhang (Nanchang Hangkong University)

**Extraction of AE signals from the initiation and propagation of stress corrosion cracking in sensitized type 304 stainless steel**

T. Suesada (Meiji University, *Japan*), T. Matsuo, I. Shinozaki (IHI Corp.), Y. Sakakibara, G. Nakayama

**Acoustic emission during stress corrosion crack initiation and propagation of 13Cr martensitic stainless steel**

K. Wu (The University of Tokyo, *Japan*), K. Ito (National Institute for Materials Science), I. Shinozaki (IHI Corp.), P. Chivavibul (The University of Tokyo), M. Enoki

**Closing Address** **16:50 – 16:55**

Secretary General of IAES-24 Y. Mizutani (Tokyo Institute of Technology)