

**26<sup>th</sup> International Acoustic Emission Symposium  
(IAES-26)**

October 31 -November 2, 2022  
Kawasaki City Industrial Promotion Hall  
(<https://kawasaki-sanshinkaikan.jp/en.html>)

Sponsored by  
The Japanese Society for Non-Destructive Inspection (JSNDI)

**Program  
October 31, Monday**

**Registration 9:00-17:00**

**Opening Address 9:30-9:40**  
Chair of Organizing Committee of IAES-26  
H. Moriya (Tohoku University)

**Material I (Civil Engineering) 9:40-11:00**

*Chairperson: T. Watanabe*

**Damage evolution in specimens made with quasi-brittle materials: Experimental verification using acoustic emission technique**

Giuseppe Lacidogna (Politecnico di Torino), Boris N. Rojo Tanzi, Gustavo de Abreu Cáceres, Leonel Echer, Ignacio Iturrioz (UFRGS-Federal University of Rio Grande do Sul)

**Damage process study using the discrete element method**

Ignacio Iturrioz, Boris N. Rojo Tanzi, Gustavo de Abreu Cáceres, Leonel Echer (UFRGS-Federal University of Rio Grande do Sul), Giuseppe Lacidogna (Politecnico di Torino)

**Process monitoring of mortar during temperature history curing by ultrasonic and AE methods**

Hiroto Nagashima, Kentaro Ohno, Atsushi Ueno, Tomohisa Kamada (Tokyo Metropolitan University)

**Damage evaluation of concrete by AE energy parameter with double logistic Equation in core test**

Kazuma Shibano, Nadezhda Morozova, Taiki Hagiwara, Tetsuya Suzuki (Niigata University), Yuma Shimamoto (Tokyo University of Agriculture and Technology), Sena Tayfur, Ninel Alver (Ege University)

**Lunch Break 11:00-13:00**

**Keynote Lecture I 13:00-13:40**

*Chairperson: T. Shiotani*

**History and future outlook of acoustic emission sensors**

Didem Ozevin (University of Illinois)

**Materials II (Concrete) 14:00-15:20**

*Chairperson: K. Hashimoto*

**Damage evaluation of in-service concrete head works by acoustic emission and X-ray CT parameters**

Nadezhda Morozova, Kazuma Shibano, Tetsuya Suzuki (Niigata University), Yuma Shimamoto (Tokyo University of Agriculture and Technology), Sena Tayfur, Ninel Alver (Ege University)

**Experimental detection of a void in a large concrete block using elastic wave tomography method**

Artur Sagradyan (CORE Institute of Technology Corp.), Norihiko Ogura, Tomoki Shiotani (Kyoto University)

**Acoustic emission monitoring and preliminary localization in fresh concrete with superabsorbent polymers**

Eleni Korda (Vrije Universiteit Brussel, Ghent University), Sofija Dajeka, Daniil Tsatourov, Gerlinde Lefever, Eleni Tsangouri, Dimitrios Aggelis (Vrije Universiteit Brussel), Didier Snoeck (Université Libre de Bruxelles), Geert De Schutter (Ghent University)

**Monitoring of fracture of textile reinforced cementitious sandwich panels using acoustic emission and electromagnetic waves**

Dimitrios G. Aggelis, N. Ospitia, E. Tsangouri, A. Pourkazemi, J.H. Stiens (Vrije Universiteit Brussel)

**Signal Processing and AE analysis 15:40-17:20**

*Chairperson: T. Shiraiwa*

**Structural health monitoring of RC bridge deck using wireless AE sensor system with time-of-event estimation**

Yuki Ueda (Toshiba Corporation), Kazuo Watabe (Toshiba Corporation, Kyoto University)

**Development of AE source location method for anisotropic materials by Akaike information criterion and wavelet transform**

Yoshito Suzuki, Takuma Matsuo (Meiji University)

**Classification of AE signals based on convolutional autoencoder**

Tomaž Kek, Zoran Bergant, Edvard Govekar, Roman Šturm, Primož Potočnik (University of Ljubljana), Martin Misson (LTH Castings d.o.o.), Mario Sorgente (Optics 11)

**Application of neural network for classification of located acoustic emission events**

Gerd Manthei, Michael Guckert (THM· University of Applied Sciences)

**A neural net clustering algorithm based on self - organizing map for partitioning acoustic emission features in characterizing osteoarthritic knees**

Nazmush Sakib, Tawhidul Islam Khan, Md. Moznuzzaman, Nanami Tokumaru (Saga University)

**November 1, Tuesday**

**Registration 9:00-16:30**

**Sensor and Measurement System 9:40-11:00**

*Chairperson: N. Okude*

**Application of a fiber-optic Bragg grating sensor to AE testing for a heat-resistant composite at 1000 °C**

Fengming Yu, Zixuan Li, Yoji Okabe (The University of Tokyo)

**Multi-frequency MEMS acoustic emission sensor for effective source localization in dispersive media**

Didem Ozevin, Talha Masood Khan, Chenxi Xu (University of Illinois at Chicago)

**Internet of things acoustic (Acoustic Emission) online monitoring and fault diagnosis of structures and equipment**

Yating Liu, Jiehui Xie, Shifeng Liu (QingCheng AE Institute)

**Generation of intended acoustic emission signals caused by crack growth for evaluating measurement systems**

Taisei Yoshida, Hironobu Yuki (The University of Electro-Communications)

**Lunch Break 11:00-13:00**

**Keynote Lecture II 13:00-13:40**

*Chairperson: K. Ito*

**AE monitoring of microdamage in materials, devices and tissues**

Shuichi Wakayama (Tokyo Metropolitan University)

**Energy System 14:00-15:00**

*Chairperson: H. Yuki*

**AT standard for steel pressure vessels for hydrogen refueling stations**

Yoshihiro Mizutani (Tokyo Institute of technology), Hiroaki Suzuki (Chiyoda Corp.), Toshio Takano (JFE Container Co., Ltd.)

**Damage monitoring of flexible solar cells under torsional loading using AE and LT Technique**

Daisuke Aoki, Shuichi Wakayama (Tokyo Metropolitan University), Akihiro Takano, Kosuke Nakahara (F-WAVE Co., Ltd.)

**Development of evaluation method for corrosion defects in steel pipes using acoustic emission method**

Takuma Matsuo, Takuya Kurihara (Meiji University), Taro Kono, Kunihiko Hidaka, Yoshitaka Baba (Tokyo Gas Co., Ltd.)

**MaterialsIII(Composite and Polymer) 15:20-16:40**

*Chairperson: Y. Mizutani*

**Effect of the response function of AE sensor on the evaluation of CFRP damage modes**

Tomohisa Shiraishi, Kensuke Kageyama, Takenobu Sakai (Saitama University)

**Identification of AE signals for fracture phenomena in second generation acrylic adhesive joints**

Koji Kamiyama, Masatomo Mikuni, Takeshi Matsumoto (Mitsubishi Electric Corporation), Satoshi Matsuda, Hajime Kishi (University of Hyogo)

**Modelling of acoustic emission signals in composites materials: towards lifetime prediction**

Nathalie Godin, Aurélien Doitrand, Claudio Fusco (INSA de Lyon, Univ. Lyon)

**Acoustic emission monitoring of composite marine propellers using embedded piezoelectric sensors**

Lotfollah Pahlavan, Arnaud Huijjer, Christos Kassapoglou (Delft University of Technology)

**Banquet@Kawasaki Nikko Hotel 18:00-**

**November 2, Wednesday**

**Registration 9:00-16:00**

**Structures 9:40-11:00**

*Chairperson: K. Ohno*

**Bending Characteristics of Extreme-Corroded Steel Sheet Pile by Acoustic Emission and Digital Image Correlation**

**Parameters**

Taiki Hagiwara, Tetsuya Suzuki (Niigata University), Yuma Shimamoto (Tokyo University of Agriculture and Technology), Yukio Abe, Takeo Harada (Nippon Steel Metal Products Co., Ltd.)

**Source localization of damage in the underground large diameter waterworks pipeline**

Sun-Ho Lee, Choon-Su Park, Dong-Jin Yoon (Korea Research Institute of Standard and Science, University of Sciences and Technology)

**Non-destructive estimation of the tensile strength of bent BFRTP bars using elastic wave**

Nobuhiro Okude (Kyoto University, Tokai Technology Center), Bruno Ribeiro, Hisafumi Asaue, Tomoki Shiotani (Kyoto University)

**Clarification of fracture behavior of BFRP reinforced concrete beam by AE activity and digital image correlation**

Hisafumi Asaue, Tomoki Shiotani, Bruno Ribeiro (Kyoto University), Takumi Kobayashi, Masakazu Uchida (Public Works Research Institute)

**Lunch Break 11:00-13:00**

**Material IV (Processing) 13:00-14:00**

*Chairperson: T. Khan*

**Introduction of a practical AE monitoring method for laser powder bed fusion process**

Kaita Ito, Masahiro Kusano, Makoto Watanabe (National Institute for Materials Science), Rinako Kokaji, Takayuki Shiraiwa, Manabu Enoki (The University of Tokyo)

**Defect analysis during laser powder bed fusion by AE method and X-ray CT**

Rinako Kokaji, Takayuki Shiraiwa, Manabu Enoki (The University of Tokyo), Kaita Ito, Masahiro Kusano, Makoto Watanabe (National Institute for Materials Science)

**Analysis of kink formation behavior in Al/Al<sub>2</sub>Cu eutectic alloys using AE**

Naoya Hamada, Takayuki Shiraiwa, Fabien Briffod, Manabu Enoki (The University of Tokyo), Koji Hagihara (Nagoya Institute of Technology)

**Material V (Metal) 14:20-15:40**

*Chairperson: T. Yasuda*

**AE behavior on corroded carbon steel under wet and dry conditions**

Keisuke Ueno, Takashi Usui (Toshiba Corporation), Kazuo Watabe (Toshiba Corporation, Kyoto University)

**Prediction of fatigue crack growth in Ti alloys by data assimilation of AE signals**

Kyosei Amino, Fabien Briffod, Takayuki Shiraiwa, Manabu Enoki (The University of Tokyo)

**AE-driven insight into the critical steps in localized corrosion initiation of Mg and Al alloys**

Kaige Wu, Nobu Yatagai, Takayuki Shiraiwa, Manabu Enoki (The University of Tokyo), Kaita Ito (National Institute for Materials Science)

**In-situ observations and AE analysis of forged Ti-6Al-4V alloys under dwell-fatigue loadings**

Haoyu Hu, Fabien Briffod, Takayuki Shiraiwa, Manabu Enoki (The University of Tokyo)

**Diagnostics 16:00-17:00**

*Chairperson: T. Sakai*

**A Self-powered Wireless Acoustic Emission Monitoring System: A 3-Year Experiment with a Reinforced Concrete Highway Bridge**

Takashi Usui, Yuki Ueda, Hidefumi Takamine (Toshiba Corporation), Kazuo Watabe (Toshiba Corporation, Kyoto University), Tomoki Shiotani (Kyoto University)

**Damage visualization of in-service RC bridge deck utilizing elastic wave measurement**

Kazuo Watabe (Toshiba Corporation, Kyoto University), Hidefumi Takamine, Takashi Usui, Yuki Ueda, Keisuke Ueno (Toshiba Corporation), Kyoichi Okumura (Toshiba Plant Systems & Services Corporation), Yoshihiko Nakano (Fukuoka-Kitakyushu Expressway Public Corporation), Tomoki Shiotani (Kyoto University)

**Characterization of Osteoarthritic Knees by Acoustic Emission Technique**

Tawhidul Islam Khan, Md. Mehedi Hassan, Nanami Yoshihara, Shuya Ide (Saga University)

**Closing Address 17:00-17:10**

Chair of the Steering committee of IAES-26  
T. Matsuo (Meiji University)