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Preface

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Without Abstract

T. Usuda
Received his Master degree in 1987 and Doctor degree in 1999 from Tokyo Institute of Technology. Since he joined National Research Laboratory of Metrology (former NMIJ) in 1990, he has been carrying out research on MEMS sensors, laser optics, vibration metrology standards, and dynamic measurements. He served as APMP (Asia Pacific Metrology Programme) Executive Secretary (2002–2005) and APMP TCAUV (Technical Committee for Acoustics, Ultrasound and Vibration) Chairperson (2009–2011). He was invited researcher at PTB Germany (1998–1999), CNRS France (2000–2001), and the BIPM (2010–2011). He has been CIPM (International Committee for Weights and Measures) member since July 2012.

T. Kikuchi

Graduated from Tokyo Institute of Technology in 1981, and received his Doctor of Engineering degree in 1986. He joined the Electrotechnical Laboratory (former NMIJ) since 1986, and he has been working on ultrasonic diagnostic measurements and ultrasonic standards. Since 2008, he has been Head of Acoustics and Vibration Metrology Division, NMIJ/AIST. He is a member of Acoustic Society of Japan, and an engineering fellow of the Japan Society of Ultrasonic Medicine.

The measurement needs for acoustics ultrasound and vibration (AUV) are rapidly growing in diverse fields such as machine testing, medical diagnosis, human safety, environmental protection, seismology, etc. Especially, AUV measurements are strongly connected on safety and health issues in modern society, for example, ultrasonic measurement for medical inspection, audiometer calibration, hearing aids, non-destructive inspection using ultrasound, structure testing, on-site vibration measurement for maintenance, etc.

In this connection, we plan to organize a special issue on "Acoustics Ultrasound and Vibration Metrology for Safety and Health". The overall aims of this special issue are to promote discussion among researchers actively working in the AUV measurement fields, especially at National Metrology Institutes (NMIs) and also users in industries and medical fields. Of particular interest in this special issue are papers devoted to the development of

- Human relations: Acoustics, typically ultrasonic, for biomedical applications both diagnostic and therapeutic, diagnostic ultrasound applications, hearing diagnosis and aid, occupational vibration (whole-body vibration and hand-arm vibration) measurement and standardization.
- Vibrations in structures: The measurement and monitoring of vibrations in complex structures, on-site diagnosis, monitoring of vibration, and calibration of the systems.
- Vibrations in the natural disasters: Seismology and seismometer.
- Calibration and uncertainty evaluation.

We hope that this special issue will assist mutual understanding not only in the AUV metrology community but also in the machine diagnosis, structure inspection, and medical engineering field communities. We also hope that this special issue will stimulate communications among the stakeholders. We wish to take this opportunity to sincerely thank all those who contributed their valuable papers to the journal and the many people who assisted us in the publication.