Special Issue on Laser Ultrasonics and Advanced Sensing 2013

PREFACE

This special issue includes papers from the 3rd International Symposium on Laser Ultrasonics and Advanced Sensing (LU2013) held on 25–28 June in Yokohama, Japan, sponsored by the Japanese Society for Non-Destructive Inspection (JSNDI). All the papers were subjected to peer-review, and are regarded as original journal papers. It is noted that proceedings papers of LU2013 are published in Open Access Journal of Physics: Conference Series (JPCS) as a part of the IOP Conference Series, aside from journal papers in this special issue of *Mater. Trans.*

A brief introduction of the conference is given below. The photo-acoustics is one of materials characterization methods to evaluate the optical absorption of materials from the acoustic waves generated by the optical absorption. It was originated from the discovery by Alexander Graham Bell during his research for the first optical telecommunication. Based on the use of laser as a coherent and intense light source, photo-acoustics was extended to laser-ultrasonics (LU), and it has been applied to wide area of ultrasonics, optics, material characterization and nondestructive inspection.

In 1996, a research group for LU was started in JSNDI, and researches on LU and related topics such as noncontact measurements and elastic wave theories were discussed. Similar activities were pursued also in North America and in Europe. The international symposium on LU was started in Montreal, Canada in 2008 in order to offer a forum for people involved with basic researches and industrial applications of LU. In the second symposium in Bordeaux, France nearly 120 papers were presented.

In LU2013, we focused on the laser generation and/or detection of acoustic waves, application to nondestructive testing, ultrafast-optoacoustics and innovative instruments. Research achievements in biomedical applications, advanced sensing including noncontact, micro/nanoscale or nonlinear measurements, as well as theory and simulation of ultrasound were also included, considering the interdisciplinary nature of this field.

We enjoyed excellent and informative 3 plenary talks, 11 invited talks, 81 oral and 41 poster presentations with 168 attendees. We also organized a post deadline poster session. Contributions of the participants, the scientific and organizing committees are highly appreciated. The conference tour was a dinner cruise to the Tokyo bay, and we hope this experience will remain as a pleasant memory in attendees. As decided in the meeting for the next symposium, the next symposium will be held in Chicago, USA in 2015. We would be happy if the articles in this special issue work as a trigger to attend LU2015.

May 19, 2014

Kazushi Yamanaka, Tohoku University, Organizing Committee Chair
Ikuo Ihara, Nagaoka University of Technology, Scientific Committee Chair
Makoto Ochiai, Toshiba, Steering Committee Chair