FOREWORD

Special Section on Recent Development of Electro-Mechanical Devices — Papers selected from International Session on Electro-Mechanical Devices 2011 (IS-EMD2011) and other recent research results —

Electro-Mechanical devices (EMD) mainly include mechanical switching and connecting devices, such as relays, switches and connectors, to be used for delivering and/or controlling electrical signals and power. Although they have a long history in practical usage, they are still serving as important key components in various industrial applications. Moreover in recent years, importance of electro-mechanical devices are increasing both in power transmission and signal transmission in view of rising demands of DC power distribution, HV/EV automobiles as well as applicability of MEMS switching techniques in high-frequency signal transmission. Thus, R&D efforts in this field of technologies have been strongly required.

The 11th International Session on Electro-Mechanical Devices (IS-EMD2011) was held on November 17-18 at Akita University, Akita, Japan. The total of 75 participants from 7 countries gathered and 40 technical papers were presented, including 4 invited presentations each from France, China, U.S.A. and Korea. Intensive and fruitful discussions and exchanges of opinions were realized at the conference site.

In this special section, several papers from IS-EMD2011 as well as the other recent research activities are published. Among them, the first two papers respectively written by Prof. Jia Shenli, et al. and Prof. Long Luong Duc, et al., are each based on their invited presentations at IS-EMD2011. These two papers as well as the remaining papers in this special section surely provide advantageous and beneficial technical results in the related research fields.

Lastly, I would like to express my great thanks to the members of the Editorial Committee. Especially, I greatly appreciate Prof. Junya Sekikawa, Guest Editor, for his dedicated contribution to editorial task of this special section.

Makoto Hasegawa (Chitose Institute of Science and Technology), Guest Editor-in-Chief

Makoto Hasegawa *(Senior Member)* received his B.E., M.E. and Ph.D. degrees in electrical engineering from Keio University, Yokohama, Japan, in 1986, 1988 and 1991, respectively. After spending several years in industry, Dr. Hasegawa is now a Professor at the Department of Global System Design, Chitose Institute of Science and Technology, Japan. He is currently involved in research on electrical contact phenomena and related measuring techniques, as well as optical sensing techniques, and also development of physics education programs and activities. Dr. Hasegawa is now serving as a chairperson of the Technical Committee on Electro-Mechanical Devices of IEICE. Dr. Hasegawa is a senior member of IEEE, and a member of Institute of Electrical Engineers of Japan (IEEJ), Japan Society of Applied Physics (JSAP), Society of Photo-Optical Instrumentation Engineers (SPIE), Physics Education Society of Japan, and Liberal and General Education Society of Japan, respectively.