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## FOREWORD

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### Special Section on Recent Development of Electro-Mechanical Devices (IS-EMD2013)

This special section mainly focuses on the recent development of Electro-Mechanical Devices. Many papers in this issue were presented in 13th International Session on Electro-Mechanical Devices (IS-EMD2013) which is supported by the technical committee of EMD. IS-EMD2013 was held in Huazhong University of Science and Technology, Wuhan, China from November 16th to 17th, 2013.

Thirteen years ago, International session on EMD was established as a meeting to open the discussion for the research results in IEICE with foreign researchers. One of the results of meeting has been published as the special section in the transaction of IEICE for more than 10 years. The special issue has been well-known among the worldwide EMD people.

Basically, the committee of Electromechanical Devices is established as a research meeting to resolve a lot of problems which support a new concept on the subject of mechanical components including all of the related electrical and mechanical issues. Around 20 years ago, the mechanical means have been expanded on the research fields such as mechanical contact of the optical components and other fields.

Now a day, the issues in EMD include Basic Contact Phenomena, Theoretical Analysis, Arc Discharge and Related Phenomena, Sliding contacts, Relays, Connectors, Contactors and Circuit Breakers, Optical Interconnection, Sensing Devices, Automotive Applications, Signal Transmission, Lead Free Soldering, Reduce-Reuse-and-Recycle Techniques, Testing and Evaluation, and Others. These fields have been well-known subjects from early research fields on electrical and electronic engineering, but there are lots of still unresolved problems not only for available traditional matters but for newly developed applications.

In this section, 7 papers and 3 brief papers are selected from 17 submitted papers. These papers include wide basic research fields which are interesting for the readers who have basic electrical engineering research issues.

Lastly, I would like to express great appreciation to the Editorial Committee, especially Dr. Yoshiteru Abe, Guest Editor, for the remarkable contribution to editorial task of this special section.

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Ryo Nagase (Chiba Institute of Technology), Editor-in-Chief

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**Ryo Nagase** (*Senior Member*) received B.E., M.E. and Ph.D. degrees in precision engineering from Tohoku University, Miyagi, Japan, in 1983, 1985, and 1998, respectively. In 1985, he joined NTT Laboratories, Nippon Telegraph and Telephone Corp. From 1985 to 2009, He has been engaged in research and development of optical fiber connectors. From Oct., 2009, he is a professor of precision engineering at Chiba Institute of Technology, Chiba, Japan. His current interests are microscopic deformation and optical remote-sensing. He is an Expert of IEC TC86/SC86B and a member of IEEE and the Japan Society of Mechanical Engineers (JSME).

