Message from Editors

CURRENTLY, 4th Industrial Revolution and Industry 4.0 have been the biggest move in the world from several years ago. Electrical vehicle and other electrical mobility system such as ship and aircraft, Smart factory and manufacturing have become the main issues of global industry market. Conventional power drive systems using internal combustion engine has been replaced by electric motor drive systems having high performance and ecofriendly features.

It is ultimately due to save the energy consumption and environment pollution of worldwide.

This movement and change make the electric machine systems as more important and substantial technology in high-end application industries. The wide applications of high performance electrical machinery and drive system for various products are at the heart of these industrial technology change.

Amid this tremendous change in industry field, high performance motor & drive system is the major core technology especially for specific industrial application requiring high efficiency, high precision and fast response, high speed and high power density.

Many researches about various kinds of motor design, driving circuit and control have been studied for the more high performance itself until now. In addition to these researches and technology developments, the application technology has been very important to satisfy the requirements of various application systems.

This special issue “High Performance Design and Driving Technologies of Motor & Drive System for Various Applications” was planned to help and progress high-end motor and drive industrial applications by sharing the research and development result related to this industrial field.

However, due to the tough situation of COVID-19, the journal confronted with many difficulties in the process of paper submission and review in the last quarter of 2020 and the beginning a few months of 2021.

Fortunately, we have finally completed this special issue with the valuable dedication and help of many researchers and experts. I heartly appreciate all of the authors, the reviewers and the guest editors as the deputy editor-in-chief. These special issue papers reflect some of the most anticipated advancements in motor and drive system application.

Because of time constraints and other reasons, this issue is only able to showcase three papers for the special issue and five papers for regular issue from many papers submitted. Some papers of this special issue are on the review, after review process, and will be published on the regular journal.

While publishing this special issue, I hope that the valuable research results of related researchers will contribute to a better future and a safer and happier life for humanity.

All of humanity now suffers from the Covid-19 virus, and there are big challenges in industry and the economy as well. However, it is an opportunity to realize once more that the best solution to overcome this is science and technology developed by mankind. I wish members and all families happiness and health, and I wish that all difficulties disappear and a new and more promising 2021 year.

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Professor Taeuk Jung was born in Masan, South Korea, in 1970. He received the B.S., M.S. and Ph.D. degrees in electrical engineering from Pusan National University, Pusan, South Korea, in 1993, 1995 and 1999, respectively.

Between 1996 and 2005, he was a Chief Research Engineer with Laboratory of LG Electronics, South Korea. Between 2006 and 2007, he was a Senior Research Engineer of Korea institute of Industrial Technology, South Korea. Since 2007, he has been with Kyungnam University as a Professor. He was a visiting scholar of FREEDM center of North Carolina State University, USA in 2019.

Prof. Jung is a member of the Institute of Electrical Engineers of Korea (KIEE) and the Institute of Electrical and Electronics Engineers (IEEE), USA

His research interest includes high-efficiency motor design, driving, control algorithm and their applications. He is also very interested in the small power wind turbine and renewable energy application.

His research results are widely used in industrial and home appliances products, renewable energy application. In recent years, he has been concentrated in the R&D of high performance motor and drive and smart actuator for automobile, appliances and robot.

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