Engineering Power
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EDITOR-IN-CHIEF'S WORD

Dear readers,
in this issue of our international bulletin, whose guest editor is a distinguished member of our Academy, Prof. Mario Cifrek, PhD, from the Faculty of Electrical Engineering and Computing of the University of Zagreb, we have a special opportunity to learn about cooperation between scientists from China and Croatia, this time in the field of intrabody communication.
I believe that it will be interesting for you to get acquainted with this international research, especially because of the actuality of the subject. It will also be possible to make contacts and discuss with the authors.

Editor
Vladimir Andročec, President of the Croatian Academy of Engineering

EDITOR'S WORD

Dear readers,
Although international collaboration has always been an important element of successful research, contemporary scientific activities are – almost 'by definition' – marked by joint efforts and a common research vision of the partners involved.
To this end, it is our pleasure to present in this edition of Engineering Power a fruitful research collaboration between the University of Zagreb, Faculty of Electrical Engineering and Computing and the Fuzhou University, China.
The Guest-Editor is Mario Cifrek, Member of the Academy and Professor at the Faculty of Electrical Engineering and Computing, University of Zagreb.

Editor
Zdravko Terze, Vice-President of the Croatian Academy of Engineering

FOREWORD

Ten years of collaboration between the University of Zagreb, Faculty of Electrical Engineering and Computing and Fuzhou University

It has been 24 years since the entry into force of the "Agreement on scientific and technological cooperation between the Government of the Republic of Croatia and the Government of the People's Republic of China". In that period, a total of 165 scientific research projects have been approved. Our story begins ten years ago, in 2011, when a young assistant professor at Fuzhou University, Yueming Gao, contacted a doctoral student at the University of Zagreb, Faculty of Electrical Engineering and Computing, Željka Lučev, with an initiative to apply for a bilateral project under that Agreement. The backbone of the research was a topic they both worked on: intrabody communication (IBC), a wireless communication technology that uses living tissues as a transmission medium.

Both research groups already had noticeable experience in the field at the time. Shortly after the publication of Thomas G. Zimmerman's master's degree thesis, "Personal Area Networks (PAN): Near-Field Intra-Body Communication" in 1995, Prof. Igor Krois and Prof. Mario Cifrek initiated research at the Faculty of Electrical Engineering and Computing on the topic of capacitive intrabody communication. Colleague Željka Lučev joined the group in 2007 as a doctoral student. At the same time, colleague Yueming Gao from Fuzhou University, Key Laboratory of Medical Instrumentation & Pharmaceutical Technology, worked on intrabody communication based on galvanic coupling. His mentors were Prof. Min Du from Fuzhou University and Prof. Mang I Vai from Macau University. The bilateral project launched in 2011 opened the opportunity to exchange knowledge and expertise that both groups have acquired about different modalities of communication using the human body. In recent years, research has been expanded to the electrical impedance myography and monitoring of physiological parameters. Over the past ten years, seven researchers from Croatia and five from China - have participated in the research, while four doctoral theses and 37 master's degree theses have been written on these topics. The collaboration has so far resulted in a total of seven projects, eleven journal papers, and sixteen conference papers.

The introductory part of this issue chronologically presents the development of cooperation, mutual visits of HR and KIN researchers and delegations, joint projects, and a complete bibliography of both groups. Thanks to our Chinese partners, this part of the text has also been translated into Chinese. The following are two review articles summarizing research conducted over the past ten years. The first article summarizes the results of the research in the field of intrabody communication, a topic on which the cooperation was initially initiated. The following is an article describing research launched in 2018 on a new topic, electrical impedance myography for muscle fatigue monitoring. The ultimate goal of this research is the development of a small size wearable device for muscle fatigue monitoring.

Guest-Editor
Mario Cifrek, PhD, University of Zagreb, Faculty of Electrical Engineering and Computing