

FOREWORD

This issue of the quarterly "Elektryka" contains nine papers, whose authors are employed in Faculty of Electrical Engineering in the Silesian University of Technology.

The authors of the first paper, Sławomir Bieroński, Roman Korab and Robert Owczarek, present the results of their research. They discuss the impact of Central and East European (CEE) phase shifters' adjustment on cross-border power flows. The reason for using PSTs in the transmission network is explained; the most popular designs of PSTs are presented and the issues of unscheduled power flows in CEE are examined. The main aim of the paper is to present results of research related to the impact of phase shifters' adjustment on cross-border power flows in the CEE region.

The authors of next two papers are Roman Nistrój, Tadeusz Białoń and Marian Pasko. Proportional observer of induction motor state variables is characterized. The analytical method of proportional observer's synthesis is described in the first paper. This method enables unimpeded observer poles placement in the complex plane. Locus of observer poles can be independent of or dependent on motor speed. In the second paper the authors present proportional observer's synthesis method, whereby observer poles may be placed in the complex plane in such a way that the gain matrix amplification index is equal or not greater than the reference value.

Model of waveguide sensor based on multimode interference structures is presented in paper by Artur Szewczuk and Marek Błahut.

The authors of next paper, Arkadiusz Domoracki and Krzysztof Bodzek, compare two methods of manufacturing printed circuit boards: standard method using FR-4 laminate and the novel one, utilizing material on a metal substrate (IMS), dedicated to high-current circuits. They also propose a way of modelling circuits using FEM.

Tomasz Szubryt and Paweł Kowol describe lab stands used for permanent magnet motor testing. The stands have been built for engineering project required in B.Sc. thesis.

The selected work on design and manufacture of advanced mechatronic devices and systems conducted from 2005-2015 in the Mechatronics Department (Faculty of Electrical Engineering in the Silesian University of Technology in Gliwice) is described in the paper authored by team consisting of Paweł Kowol, Grzegorz Kłapyta, Tomasz Trawiński, Paweł Kielan, Marcin Szczygieł, Marek Kciuk, Zbigniew Pilch.

Marcin Niedopytalski has submitted two papers, explaining how to assess possibility of detecting indirect faults (short-circuiting) for different methods of parameterization of distance protection devices of HV transmission lines with increased capacity limits. The first paper is devoted to parameterization methods and the second to their efficiency.

All papers included in this quarterly "Elektryka" received positive reviews in accordance with the accepted principle of double-blind review process.

*Prof. Marian Pasko
Head Editor of the quarterly "Elektryka"*