## June 8-11, 2014 Skopje, Macedonia



# 5th Symposium on APPLIED ELECTROMAGNETICS SAEM'14



## **BOOK OF DIGESTS**

### Organised by



Ss. Cyril&Methodius University in Skopje Faculty of Electrical Engineering & Information Technologies, Macedonia



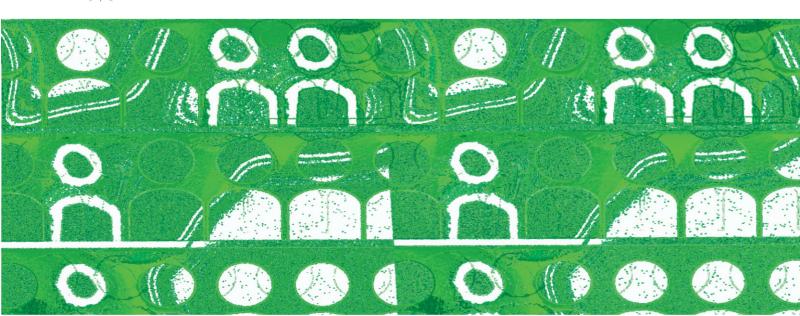
Czestochowa University of Technology Faculty of Electrical Engineering, Poland



University of Maribor Faculty of Energy Technology, Slovenia



Polish Society of Applied Electromagnetics, Poland



# 5<sup>th</sup> Symposium on Applied Electromagnetics SAEM'2014

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Mihail Digalovski, MACEDONIA Adrijana Milevska, MACEDONIA

#### Welcome address

#### Dear Participants to SAEM'2014, the 5th Symposium on Applied Electromagnetics

On behalf of the International Scientific Committee and the Organizing Committee we would like to welcome all participants of the 5th Symposium on APPLIED ELECTROMAGNETICS – SAEM'2014 in Skopje, Macedonia.

Symposium SAEM continues the tradition and now we are witnessing its fifth edition. The organisers are well established and recognised universities from Macedonia, Poland and Slovenia. The symposium has been always gathering people from many other countries, e.g. Japan, Germany, Croatia, Ukraine, Hungary, United Kingdom, Finland, Turkey, Romania, Serbia, Belgium, Bulgaria, Bosnia and Herzegovina, Slovakia, Czech Republic, Iran, Saudi Arabia, Egypt, etc. PhD students and young researchers are our future. Our policy is, through their participation at SAEM conferences, to promote their work and to benefit from their new and fresh ideas. We do hope that you will find the symposium interesting.

We would like to ensure that the Organizers will try to create and maintain friendly and warm atmosphere, both in scientific and social aspects. We believe you will make many fruitful personal contacts, meeting old and getting new friends.

Thank you for your interest and participation at SAEM'2014. We wish you a lot of fruitful scientific debates during the Symposium and a very pleasant stay in Skopje, the capital city of Macedonia.

Lidija Petkovska – MACEDONIA Andrzej Krawczyk – POLAND Bojan Štumberger – SLOVENIA

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## **Conference Programme**

MONDAY, June 9 <sup>th</sup> , 9:30-10:00 Opening Ceremony Chairs: Lidija Petkovska, Andrzej Krawczyk and Bojan Štumberger			
Plenary	Y, June 9 <sup>th</sup> , 10:00-10:45 Lecture – PL Andrzej Krawczyk and Lidija Petkovska		
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MONDA	Y, June 9 <sup>th</sup> , 10:45-11:15 – COFFEE BREAK		
Session	Y, June 9 <sup>th</sup> , 11:15-13:15 1: Materials, Diagnosis and Measurements – MDM vo Doležel and Bojan Štumberger		
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5-12	Modelling of Four Electrode Measuring System for Determine the Resistivity of Thin Antistatic Coatings  Adam Jakubas, Lech Borowik  Częstochowa University of Technology, POLAND	39	
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5-01	Noise Assisted High Performance Linear Inductive Distance Sensor Zoltán Pólik, Zoltán Kántor Széchenyi István University, HUNGARY	17	
5-22	Detection of Local Changes in Resistance by Means of Data Mining Algorithms Agnieszka Duraj¹, Ewa Korzeniewska¹, Andrzej Krawczyk²¹Lodz University of Technology, ²Czestochowa University of Technology, POLAND	59	
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MONDAY, June 9<sup>th</sup>, 13:15-14:45 – LUNCH MONDAY, June 9<sup>th</sup>, 15:15-19:00 – Excursion to Lake Matka; Refreshments and Coffee Boat trip to cave "Vrelo"; Visit to St. Andrea Monastery Church MONDAY, June 9<sup>th</sup>, 20:30-24:00 – Welcome Reception at "Pivnica"

#### Chairs: Dagmar Faktorová and Bolesław Kalicki 5-20 Thermographic Examination of the Warming Effect in the Process of Magnetostimulation 55 and Magnetotherapy Bolesław Kalicki, Anna Jung, Agnieszka Lipińska-Opałka, Andrzej Krawczyk Military Institute of Medicine, Warsaw, <sup>2</sup>Częstochowa University of Technology, POLAND Measurement of Temperature Distribution in Metallic Implant Embedded in Phantom 5-21 57 Exposed to HF Electromagnetic Field Arkadiusz Miaskowski, Grażyna Olchowik, Andrzei Krawczyk, Jan Blacha University of Life Sciences in Lublin, Medical University of Lublin, Technical University of Czestochowa, POLAND 5-02 Hypersensitive Reactions in Humans Due to Electromagnetic Radiation 19 Nada Pop-Jordanova<sup>1</sup>, Sofija Loleska<sup>2</sup> <sup>1</sup>Macedonian Academy of Sciences and Arts, <sup>2</sup>University American College, Skopje, MACEDONIA Optimization of Mild Microwave Hyperthermia Interconnection with Targeted Delivery 5-39 93 of Nanoparticles Dagmar Faktorová, Mária Pápežová University of Žilina, SLOVAKIA The "TeleMedNet II" Opportunity for Interdisciplinary Analysis of Images in Medical 65 5-25 **Applications** Piotr Murawski, Bolesław Kalicki, Anna Jung, Janusz Żuber Military Institute of Medicine, Warsaw, POLAND Human Exposure to Radio Frequency Electromagnetic Fields Near Base Stations in 89 5-37 **Urban Areas** Blagoja Markovski, Ljupco Karajanovski, Leonid Grcev, Marija Kacarska, Aleksandar Krleski Ss Cyril and Methodius University, MACEDONIA TUESDAY, June 10<sup>th</sup>, 10:45-11:15 - COFFEE BREAK TUESDAY, June 10<sup>th</sup>, 11:15-13:15 Session 3: Electrical Machines and Devices - EMD Chairs: Lech Borowik and Mykhailo Zagirnyak 5-04 Synchronous Generator for Induced AC Voltage Test of Single-Phase and Three-Phase 23 **Power Transformers** Zlatko Maliković, Stjepan Stipetić University of Zagreb, CROATIA Finite Element Modelling of the Double Stator Cup-Rotor Machine 5-47 113 Eljaroshi Diryak<sup>1</sup>, Paul Lefley<sup>1</sup>, Lidija Petkovska<sup>2</sup>, Goga Cvetkovski<sup>2</sup> <sup>1</sup>Leicester University, UNITED KINGDOM <sup>2</sup>Ss Cyril and Methodius University, MACEDONIA Characteristics of Single- and Double-Layer Windings in an Axial Flux Permanent-Magnet 5-26 67 Synchronous Machine Jan Šlamberger, Peter Virtič University of Maribor, SLOVENIA Finite Element Simulation of Permanent Magnet Synchronous Motor by the Help of 5-13 41 C Programming Language Based Development Environment Gergely Kovács, Miklós Kuczmann Széchenyi István University, HUNGARY

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WEDNESDAY, June 11<sup>th</sup>, 13:15-14:45 – Farewell Lunch

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