University of Sheffield

Electronic & Electrical Engineering

IEEE The University of Sheffield Student Branch

Electrical Machines and Drives (EMD) Research Group and IEEE Sheffield Student Branch Lecture:

Modern Aspects of Electrical Machine Condition Monitoring & Fault Diagnostics

ABSTRACT

Electrical machines are key devices in power generation and conversion met in industrial, transportation, renewable energy, and many others. During operation, they are subjected to a variety of stresses which may lead to faults. If undetected, early-stage faults can evolve into failures inflicting high cost, interruption of industrial processes, delays, as well as compromise of safety. Therefore, reliable condition monitoring, fault diagnostics, and prognostics must be in place to prevent unprecedented machine breakdowns. This seminar will introduce the various types of faults and failures in induction and synchronous machines and demonstrate some of the state-of-the-art solutions in the field of condition monitoring and fault diagnostics.

Thursday, 2nd November 2023 | **The Diamond, LT5** | **14:00AM – 15:30PM**

BIOGRAPHY

Konstantinos N. Gyftakis received the Diploma in Electrical and Computer Engineering from the University of Patras, Greece in 2010. He pursued a PhD in the same institution in electrical machines condition monitoring and fault diagnosis (2010-2014). Then he worked as a Post-Doctoral Research Assistant in the Dept. of Engineering Science, University of Oxford, UK (2014-2015) in windings insulation degradation for traction motor applications. Then he worked as Lecturer (2015-2018) and Senior Lecturer (2018-2019) in the School of Computing, Electronics and Mathematics and as an Associate with the Research Institute for Future Transport and Cities, Coventry University, UK. Additionally, since 2016 he has been a member of the "Centro de Investigação em Sistemas Electromecatrónicos" (CISE), Portugal. Between 2019 and 2022 he worked as a Lecturer in Electrical Machines in the School of Engineering and a Member of the Institute for Energy Systems, University of Edinburgh, UK.

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He is currently an Associate Professor with the School of Electrical and Computer Engineering, Technical University of Crete, Chania, Greece. His research interests focus on the fault diagnosis, condition monitoring, degradation, design and electromagnetic analysis of electrical machines. He has authored more than 130 papers in International scientific journals and conferences. Furthermore, he is the author of a chapter in the IET book "Diagnosis and Fault Tolerance of Electrical Machines, Power Electronics and Drives" published in 2018. He regularly serves as Technical Track/Special Session Chair and regular reviewer of papers for many international scientific journals and conferences. He is an IEEE Senior Member, as well as member of the IEEE IAS, IEEE PELS and IEEE IES. Finally, he serves as Editor for the IEEE Transactions on Energy Conversion and Associate Editor for the IEEE Transactions on Industry Applications.