

Editorial

Welcome to the 2018 issue of CISE newsletter!

2018 continued to be a very fruitful year for CISE, in terms of several major achievements.

The book "Diagnosis and Fault Tolerance of Electrical Machines, Power Electronics and Drives" was released by IET - The Institution of Engineering and Technology. Most book chapters' contributors are Researchers of CISE.

Following CISE's recent commitment to develop and promote highly efficient and reliable energy distribution systems, CISE has granted funding to support the development of research activities that will help shaping the residential energy distribution systems of tomorrow, through the research project entitled "Efficient and Reliable DC Electricity Distribution at Home and Offices".

Since June 2018, CISE integrates a fourth dedicated research facility - Laboratory of Electromechatronic Systems Modelling (CISE | LESM) at the University Mohamed Khider in Biskra, Algeria - where the research work is focused on the development of theoretical and computational models of electromechatronic systems. The large number of CISE collaborators in Biskra, Algeria, was crucial to the establishment of CISE's first cross-border facility.

The ever-increasing international visibility of CISE has also influenced an important rise in the number of research stays at CISE premises. PhD Researchers, Post-Doctoral Researchers, PhD, MSc and BSc Students, visited CISE facilities throughout the entire year of 2018, providing an interesting mean of exchange of research experiences.

Following the tradition of promotion of scientific and technological culture through actions of particular relevance to society, CISE took part in important initiatives of knowledge dissemination, targeted at both technical and public audiences.

Enjoy your reading!

Prof. Antonio J. Marques Cardoso
CISE Director

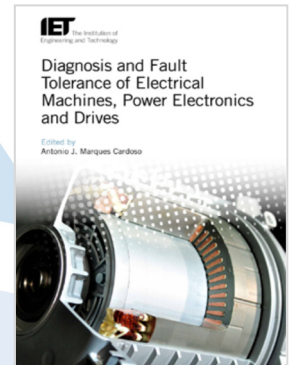


Book on "Diagnosis and Fault Tolerance of Electrical Machines, Power Electronics, and Drives"

The book "Diagnosis and Fault Tolerance of Electrical Machines, Power Electronics and Drives" was released by IET - The Institution of Engineering and Technology. The scope of the book encompasses the issues related to fault analysis, fault detection and isolation, diagnostics, prognostics, condition monitoring, post-fault reconfiguration, remedial operation, robust control, and fault tolerance of electromechatronic systems. Most book chapters' contributors are Researchers of CISE. The book is edited by Prof. Antonio J. Marques Cardoso, Director of CISE.

For further details, please visit:

<http://www.theiet.org/resources/books/pow-en/fault-tol.cfm>.



Project Ef&ReIDC@Homo



Ef&ReIDC@Homo
Efficient and Reliable DC Electricity
Distribution at Home and Offices

The research project entitled "Efficient and Reliable DC Electricity Distribution at Home and Offices" has been approved for funding by the European Regional Development Fund (ERDF) through the Operational Programme for Competitiveness and Internationalization

(COMPETE 2020) and by FCT - Portuguese Foundation for Science and Technology.

The project aims to leverage the deployment of DC electric energy distribution system at homes and offices, by proposing efficient and reliable solutions for the components that play a vital role in the DC electric energy distribution system. This mobilizing research project, which involves a relevant number of researchers of CISE, covers most of the fields of expertise in which CISE research team has advanced know-how.

The project, funded in € 239.879,65, started on 19-07-2018 and will be developed over the next three years.

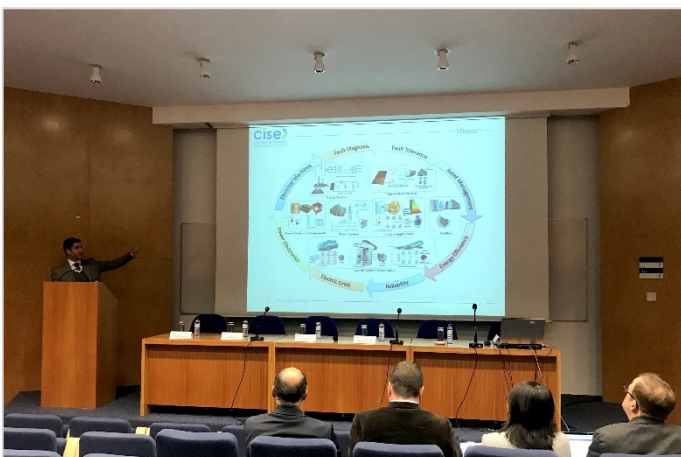
Visit of FCT Evaluation Panel to CISE

CISE received, on the 6th of November 2018, the visit of the Portuguese Science and Technology Foundation (FCT) evaluation panel in the framework of the 2017-18 R&D Units Evaluation Process. The four evaluators, Andrew F. Lane (Columbia University), Carles Sierra (IIIA-CSIC), Hai Helen Li (Duke University) and Samir El-Ghazaly (University of Arkansas), attended a presentation, conducted by Prof. Antonio J. Marques Cardoso (Director of CISE), describing the R&D unit and its major achievements in the last years. Following the R&D unit presentation, the evaluation panel held private meetings with PhD Students, Post-Docs and Researchers. The visit was concluded with a tour to the Guarda International Research Station on Renewable Energies facilities (CISE | GIRS-RES).

The visit of the evaluation panel is part of the evaluation process coordinated by FCT, and it is pivotal while defining the multiannual funding for the period 2019/2022.



The evaluation panel, from left to right: Andrew F. Lane, Carles Sierra, Samir El-Ghazaly and Hai Helen Li.



Internships, Student Exchange Programs and Visiting Researchers

Continuing with the strong tradition in creating advanced training opportunities for foreign visitors from other universities and industry worldwide, CISE facilities hosted several internships for PhD students, MSc students, and other visiting researchers during the year of 2018:



Alejandro Gómez Yepes, Post-Doctoral Researcher, Applied Power Electronics Technology Research Group (APET), University of Vigo, CISE | LSE, September – October 2018.



Céline Reis, "Internship in Product / Industrial Design", Polytechnic of Guarda, Portugal, CISE | LSE, October 2018 - February 2019.



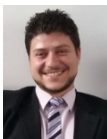
Gediminas Daukšys, Lecturer, Kaunas Technical College, Lithuania, CISE | GIRS-RES, May 2018.



Kamal Kerbouche, PhD Student, University of Biskra, Algeria, CISE | LSE, March – April 2018.



Khaled Laadjal, PhD Student, University of Biskra, Algeria, CISE | LSE, February – March 2018.



Konstantinos Gyftakis, Lecturer, Coventry University, UK, CISE | LSE, June 2018.



M'hamed Drif, Associate Professor, University of Science and Technology of Oran, Oran, Algeria, CISE | LSE, March 2018.



Marco Manuel Matos Louro, Internship, Polytechnic of Guarda, Portugal, CISE | GIRS-RES, November 2018 - May 2019.



Marcos Bodoni, International Student Mobility (MEI), Federal University of Technology – Paraná, Brazil, CISE | LSEE, January 2017 - February 2018.



Mohamed Farouk Arroussi, PhD Student, University of Biskra, Algeria, CISE | LSE, November – December 2018.



Pierre Bataille, "Laboratory prototype for studying winding faults in power transformers - Erasmus", Polytech Nantes, France, CISE | LSEE, May - August 2018.



Ramzi Saadi, Associate Professor, University of Biskra, Algeria, CISE | LSE, April 2018.

New CISE Facility

The first CISE cross-border facility, the Laboratory of Electromechatronic Systems Modelling (CISE | LESM), at the University Mohamed Khider (UMKB), in Biskra, Algeria, was formally launched on the 25th of November 2018, with the participation of Prof. Ahmed Boutarfaia, Rector of UMKB, and Prof. Antonio J. Marques Cardoso, Director of CISE.



ENERTECH SABUGAL 2018

CISE participated, as institutional partner and exhibitor, in the third edition of ENERTECH SABUGAL 2018 - Technology for Energy Fair, event of promotion, dissemination and demonstration about renewable and environment friendly energies, that took place in Sabugal, Portugal, on October 11-13, 2018. CISE stand attracted a lot of interest from visitors of all ages.



World Environment Day at CISE | GIRS-RES

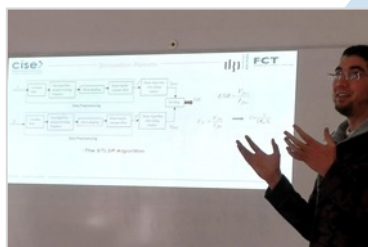
In the scope of an initiative to raise awareness of environmental citizenship and to celebrate the World Environment Day, on the 5th of June 2018, CISE | GIRS-RES facilities were visited by a group of elementary school students.



Seminars@CISE (Lectures & Presentations)

CISE | LSE - 07 March 2018

During a short-term internship of Mr. Khaled Laadjal, PhD Student at University of Biskra, Algeria, CISE students and researchers organized a series of seminars:



Ananias Muxiri, "Thermal Analysis of an Induction Motor Subjected to Short-Circuit Failures between Turns of the Stator Windings", MSc Student, University of Beira Interior, Portugal;



Fernando Bento, "Fault Tolerant DC-DC Converters at Homes and Offices", PhD Student, University of Beira Interior, Portugal;



Khaled Laadjal, "On-Line Estimation of Aluminum Electrolytic-Capacitor Parameters", PhD Student, University of Biskra, Algeria;



Imed Jlassi, "Development and Integration of New Technologies Applied to Industrial Motor Drives and Wind Turbine Systems", Postdoctoral Researcher, University of Beira Interior, Portugal.

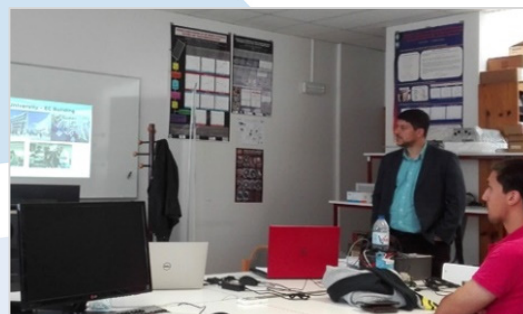
CISE | LSE - 05 April 2018

CISE students and researchers organized a seminar on the "Use of Agro-Industrial Waste to Produce various Forms of Energy", presented by Arlindo Ferreira, PhD Student at University of Beira Interior, Portugal.



CISE | LSE - 07 June 2018

In the framework of an academic visit, Dr. Konstantinos Gyftakis from Coventry University, UK, presented the lecture "Recent Advances in Rotor Electrical Faults Diagnosis in Induction Motors". Dr. Konstantinos Gyftakis' lecture was followed by a series of seminars presented by MSc and PhD Students, and Post-Doctoral Researchers.



Konstantinos N. Gyftakis, "Recent Advances in Rotor Electrical Faults Diagnosis in Induction Motors", Lecturer, Coventry University, UK;



Amel Adouni, "Thermal Analysis of Synchronous Reluctance Machines (SynRM) Operating under Fault Conditions", Postdoctoral Researcher, University of Beira Interior, Portugal;



Ananias Muxiri, "Thermal Analysis of an Induction Motor Subjected to Short-Circuit Failures between Turns of the Stator Windings", MSc Student, University of Beira Interior, Portugal;



Fernando Bento, "Fault Tolerant DC-DC Converters at Homes and Offices", PhD Student, University of Beira Interior, Portugal;

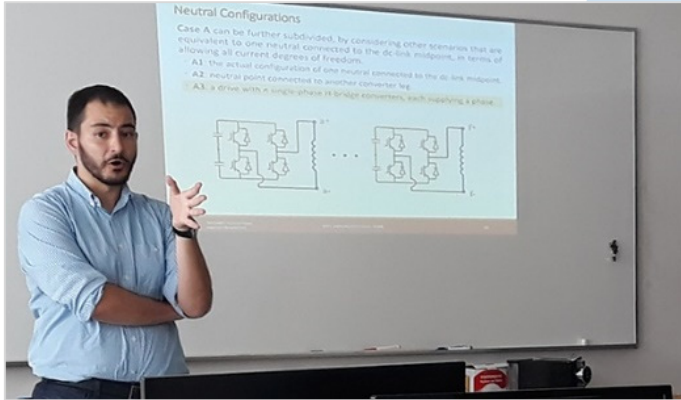


Imed Jlassi, "Development and Integration of New Technologies Applied to Industrial Motor Drives and Wind Turbine Systems", Postdoctoral Researcher, University of Beira Interior, Portugal.



CISE | LSE - 04 October 2018

In the framework of an academic visit, Dr. Alejandro Gómez Yepes from the University of Vigo, Spain, presented a lecture entitled "Modeling and Control of Multiphase Machines and Drives". The lecture was followed by a series of seminars presented by Post-Doctoral Researchers and PhD Students.



Alejandro Gómez Yepes, "Modeling and Control of Multiphase Machines and Drives", Post-Doctoral Researcher, University of Vigo, Spain;



Fernando Bento, "Fault Tolerant DC-DC Converters for Homes and Offices", PhD Student, University of Beira Interior, Portugal;



Imed Jlassi, "Development and Integration of New Technologies Applied to Industrial Motor Drives and Wind Turbine Systems", Postdoctoral Researcher, University of Beira Interior, Portugal.

CISE | LSE - 14 November 2018

Dr. José Miguel Vieira Alberto, Post-Doctoral Researcher at the Institute of Systems and Robotics, University of Coimbra, Portugal, presented a seminar on "Inductive Power Transfer".



Topmotors Fact Sheet



The fact sheet "New motor technologies", published by Topmotors, has been released in November 2018. As a follow-up of a collaboration between CISE and the Topmotors programme, the fact sheet outlines the advantages and disadvantages of various motor technologies employed in industry applications. It highlights some of the most

relevant conclusions taken from research activities, in the domain of energy efficiency, carried out at CISE | LSE. The fact sheet is publicly available and can be accessed here: http://www.topmotors.ch/sites/default/files/2018-11/E_MB_29_Motor_technologies.pdf.

Topmotors is an implementation program for efficient motor driven systems in Switzerland which offers professional support to public and private right entities, including industry, through fact sheets, continuing education courses, workshops, newsletters, and webinars.

Happy Holidays

