

IEEE CEFC 2016

The 17th Biennial Conference on Electromagnetic Field Computation

November 13 – 16, 2016

Miami, Florida, U.S.A.

CONFERENCE PROGRAM



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General Chair Welcome Message

Welcome to the Seventeenth Biennial IEEE Conference on Electromagnetic Field Computation CEFC 2016 in Miami, Florida USA, November 13-16, 2106.

This conference is cosponsored by the IEEE Magnetics Society and IEEE Miami Section. We welcome your participation in one of the most important scientific technical events in computational electromagnetics. The conference offers an excellent opportunity for the presentation of technical papers at one of the largest gatherings of international experts in electromagnetic field computations. During the IEEE CEFC 2016, authors from more than 50 countries from around the world will present the latest developments in modeling and simulation methodologies for the



analysis of electromagnetic fields and wave interactions, with an application emphasis on the computer-aided design of low and high frequency devices, components and systems. Many contributions are original works in the areas of Static and Quasi-static Fields, Wave Propagation, Material Modeling, Coupled Problems, Numerical Techniques, Optimization and Design, Software Methodology, Nanomagnetism, Nanophotonics, Bioelectric Field Computation as well as Devices and Applications. The technical program includes three full days of oral and poster sessions.

The conference will feature 24 oral sessions and 48 poster sessions. The accepted and presented digests will be published in IEEE Xplore. The extended versions of accepted and presented papers will undergo the standard IEEE Magnetics Society peer review process for possible publication in the June 2017 issue of the IEEE Transactions on Magnetics. Three best poster paper cash awards and certificates will be given to the top three posters and will be awarded at the conference closing session on Wednesday November 16th, 2016 following the last paper presentation. Recipients need to be physically present to receive this award.

In addition, there will be a technical exhibition. We have also scheduled three technical tutorials which are offered free of charge to registered participants on Sunday, November 13 from 1-4 PM. A Special invited presentation on Technobiology Paradigm Shift in Nanomedicine will be conducted at the beginning of the session MO07 on Monday at 3:15 PM by Professor Sakhrat Khizroev. The conference also includes an outstanding social program. It is anticipated that we will have an excellent and stimulating technical program and social functions throughout the three full days of the conference.

As General Chairman of IEEE CEFC2016, I would like to express my gratitude to all members of the Editorial Board and in particular to its Chairman Professor A. A. Arkadan, for their much appreciated work, expertise and dedication. I would like to also thank members of our organizing committee and the CEFC 2016 Secretariat Ms. Abla Hariri for the continuous and diligent work during the last many months as well as to all staff members and volunteers students who have contributed to the conference success. Finally, I would like to thank all those who contributed to the conference by submitting technical papers, holding tutorials or attending the conference and for making it a great success.

On behalf of the Conference, welcome to Miami and please take full advantage of the technical and social offerings of IEEE CEFC2016 and enjoy your stay in Miami and Florida, the Sunshine State.

Professor Osama A. Mohammed
IEEE CEFC2016 General Chairman

Location

Miami, Florida, the site of the IEEE CEFC 2016, is often labeled the city of the future; it is one of United States Premier international cities. Miami is a world famous center for tourism, fine arts, sports, international business and trade, banking, high technology firms, and major universities. Its dramatic culture diversity, thriving economy, modern facilities, youthful nerve, and cosmopolitan flavor are increasingly apparent throughout its distinctive neighborhoods. In Miami, you will enjoy its world famous climate of sunshine and golden beaches, and multi-cultural influences in scenery, arts, and dining. Miami is also known as the Cruise Capital of the world with more than 4.33 million annual passengers from the port of Miami. The weather in November should be very pleasant in Miami with plenty of sunshine. Temperature are in the range of 66 – 83 °F (19 – 28 °C).

IEEE CEFC Papers

The call for papers resulted in a large number of papers submitted for review for presentation at the Conference. A worldwide editorial board of 18 scientists and prominent researchers selected more than 600 papers for presentation at the Conference and for inclusion in the Conference record after a peer review for each paper. Extended version of accepted papers will undergo another peer review process for inclusion in the IEEE Transactions on Magnetics if the papers are presented at the conference by an author or a co-author.

Conference Technical Program

IEEE CEFC 2016 Miami is considered to be one of the most important scientific and technical events in computational electromagnetics and related fields and is bound to be an excellent experience for all attendees and supporters. CEFC 2016 is comprised of a comprehensive technical program including oral sessions, interactive poster sessions, computer demonstrations, and vendor exhibits.

Technical Exhibitions

The setup of the exhibits will start in afternoon of Sunday November 13, 2016. The main conference will be three full days (Monday, Nov 14, 2016 through Wednesday, Nov 16, 2016). We will have more than 300 attendees from more than 40 countries with more than 450 papers to be presented. The exhibits will be held on Monday, Nov 14 through Wednesday, Nov 16 from 8:00 AM until 5:00 PM in the main exhibit area (exhibits will close at approximately 2:00 PM on Wednesday). In addition to the technical program, IEEE CEFC 2016 will also features a major social program.

Onsite Registration

The conference registration desks will be located at the Hotel Hilton Miami Downtown, and will be open during the following hours:

Sunday, November 13, 2016	12:00 PM - 5:30 PM
Monday, November 14, 2016	8:00 AM - 5:00 PM
Tuesday, November 15, 2016	8:00 AM - 5:00 PM
Wednesday, November 16, 2016	8:00 AM - 3:00 PM

Presentation Awards

During the three days of the conference, assigned judges will evaluate all poster presentations and decide on three excellent ones to be awarded a significant amount of money. The winner papers will be announced in the closing ceremony of the conference.

Hotel and Location

Hilton Miami Downtown

Overlooking Biscayne Bay, this contemporary tower hotel is a 3-minute walk from Adrienne Arsht Center Metromover Station for free transportation around downtown Miami and a 4 miles' drive from Miami Beach. Enjoy the majestic skyline views and first-class service. Outside, the best of downtown is just minutes away - from South Beach nightlife and NBA action at American Airlines Arena to Bayside Marketplace, the city's best food, fun, and shopping. Amenities include a relaxed bistro restaurant serving international cuisine, a lobby cafe, and a rooftop pool and poolside bar with skyline.

Miami Dade Metromover

Everybody rides free on Metro mover. This 4.4-mile electrically-powered, fully automated people mover system connects with Metrorail at Government Center and Brickell stations and with Metrobus at various locations throughout downtown. Major destinations of the Metromover system include the American Airlines Arena and Bayside Market Place views.

Airport Transportation

To provide IEEE CEFC 2016 Conference guests with reasonable and best travel experience, we bring your notice the Super Shuttle which is offering special discounts for IEEE CEFC 2016 participants & guests. Please follow the below link which will redirect you to the super shuttle website and book your ride from Airport to the Hotel Hilton Miami Downtown or from Hotel Hilton Miami Downtown to Airport.

<http://www.supershuttle.com/default.aspx?GC=3EQHS>

Please use this code to receive the discount rate especially for IEEE CEFC 2016 Conference.

Coupon Code: 3EQHS

Conference Reception

The conference reception will be held on Sunday, November 13th from 6:00 to 8:00 pm at the Bayside Marketplace. Buses would leave the hotel starting at 5:30 pm from front of the hotel on the street level. You must present a reception ticket and badge for admission.

Facts About Florida (the Sunshine State)

Florida, commonly known as the sunshine state, is southernmost state of the mainland United States. With over 1,300 miles of coast, many amusement parks, and even more national parks; Florida is one of the most popular vacation destinations in the USA. Florida is also home to the oldest European settlement in North America, Saint Augustine, as well as a plethora various wildlife and habitats. On top of it all, Florida is also known for its year-round warm climate making it possible to enjoy all of these activities at any time of the year.

South Florida

Miami (the Magic City)

Miami is the most Metropolitan city in Florida. During the day there are two national parks within the span of Miami with the Everglades National Park and the Biscayne National Park, as well as the Miami Zoo and Miami Sea Aquarium. Port Miami is also the world's leading cruise port and the most popular departure destination for cruises to the Caribbean islands. Apart from nature, Miami also has a very active nightlife with many activities constantly going on. Furthermore there is the Wynwood art district where a variety of great food and drinks can be enjoyed all while observing the work of some of Miami's greatest artist.

Florida Keys

The Florida Keys are a popular destination for many marine activities, such as snorkeling, diving, paddle boarding and jet skiing. Travel all the way south to Key West and stand at the southernmost point of the mainland United States, only 90 miles from Cuba.

Naples/Fort Myers

Home to more beautiful beaches and water activities in a smaller mellower environment than Miami.

Central Florida

Orlando

Orlando's most popular tourist attractions are by far its various amusement parks. Being home to Universal Studios, Islands of Adventure, Sea World, and 4 different Disney parks as well as many luxury resorts making it a perfect destination for the family.

Saint Augustine

The oldest European settlement in North America offers great food and many fun and educational tours. Learn about the history of Spanish settlement in Florida as you tour the Fort and old settlement, or enjoy ghost stories as you tour old graveyards and hospitals.

Cape Canaveral

The USA's landmark for space exploration. Tour the Kennedy Space center and see the space crafts that were used in various missions.

Tampa

Home to more amusement parks and the famous Clearwater beach. There are various museums and theaters throughout the city, as well as the Lowry Park Zoo. Tampa is a beautiful destination for anyone visiting Florida.

Local and Florida Sightseeing

Flamingo Gardes

Flamingo Gardens is a 60-acre, not-for-profit botanical garden and Everglades wildlife nature preserve. There are over 3,000 species of unusual, tropical, subtropical, and native plants showcased in the botanical garden and over 83 native species such as, alligators, bears, bobcats, eagles, otters, panthers, peacocks and flamingos that can be seen at the wildlife nature preserve. The Everglades Wildlife Sanctuary is considered a home to the largest collection of Florida native wildlife.

Zoo Miami

Zoo Miami is the largest and oldest zoological garden in Florida, and the only tropical zoo in the continental United States. Home to over 3,000 animals, 500 different species, and over 100 exhibits, Zoo Miami is the ultimate family attraction. There are playgrounds, water play areas, camel rides and animal feedings/encounters, making it one of the must see attractions for families.

Jungle Island

Jungle Island is an interactive zoological park in Watson Island, Miami, FL. At Jungle Island, visitors are given the opportunity to encounter wildlife from all over the world. There is a petting zoo where visitors can interact with a number of domestic and exotic animals, including an experience with red kangaroos. As Miami's most unique destination, Jungle Island continues to delight the thousands of people who visit Miami each year.

Vizcaya Museum & Gardens

Built in the 1910's, the Vizcaya Museum & Gardens is a popular destination for those with a love of art, history or nature. The museum features the beautifully maintained 34-room mansion, showcasing over 2,500 art objects and furnishings. There are ten acres of European-inspired formal gardens with fountains and statuary, some of which date back to antiquity; a significant orchid collection totaling 2,000 specimens; and 25 acres of endangered primary growth forests. This Italianate mansion that once belonged to industrialist James Deering is worth a visit.

Dolphin Mall

The beautiful, state-of-the-art Dolphin Mall is Miami-Dade County's largest retail value shopping center blending the hottest concepts in theme entertainment and dining. There are over 240 retail outlets and name-brand discounters, including stores not found anywhere else in the county such as, Bloomingdale's The Outlet Store, Coach Factory Store, Last Call by Neiman Marcus, and Saks Fifth Avenue OFF 5th, to name a few.

Lincoln Road Mall

The Lincoln Road Mall is fun, lively, and friendly for diverse cultures and lifestyles. The best times to hit the road are during Sunday-morning farmers' markets and on weekend evenings, when cafes are bustling; art galleries schedule openings; street performers take the stage; and bookstores, import shops, and clothing stores are open for late-night Miami shopping purchases.

Sawgrass Mills Mall

Sawgrass Mills is a shopping mall operated by the Simon Property Group, in Sunrise, Florida. The mall falls on a 2,383,906 square feet area of retail selling space. Sawgrass mills is the eighth largest mall in the United States, the largest single story mall in the U.S., and the second largest mall in Florida. There are over 300 retail outlets and name brand discounters. The mall features some other lifestyle areas filled with restaurants and similar plazas. The mall is a destination for thousands of tourists per year.

International Steering Committee Meetings

The CEFC International Steering Committee will meet on Monday, November 14th between 12:00 pm and 1:30 pm. The Compumag International Steering Committee will meet on Monday, November 14th between 6:00 pm and 10:00 pm. Both meetings will be in the Metronome of the Hilton. A floormap of the Conference location at the Hilton Miami Downtown is attached at the end of this conference program booklet.

Special Invited Presentation - Technobiology Paradigm Shift in Nanomedicine (During Session MO07 on Monday at 3:15 pm)

Sakhrat Khizroev

Professor of Electrical and Computer Engineering, College of Engineering

Professor of Cellular Biology and Pharmacology, College of Medicine

Florida International University

E-mail: khizroev@fiu.edu



Abstract—The emerging field of nanomedicine promises unprecedented patient- and disease-specific medical diagnostic and treatment. Significant progress has been achieved in this field from the perspective of biotechnology. Especially with the development of bioinformatics, there are almost endless computational resources to identify molecular compounds that could target almost any specific biomarker. Conversely, the development of high technology to treat a disease at the intra-cellular level is still in its very early stage. Such a technology-driven approach could exploit quantum mechanics to enable an unprecedented high-efficacy remote-field control of intrinsic molecular processes that underlie specific diseases. Being complementary to the traditional approach, the new development can make its own special contribution to the big goal of making personalized nanomedicine a reality. This presentation will discuss our recent studies on using magnetoelectric nanoparticles to advance the state of treatment of cancer, neurological diseases, HIV/AIDS, and others. The promising results of *in vitro* and *in vivo* studies will be presented to demonstrate the novel nanotechnology approach.

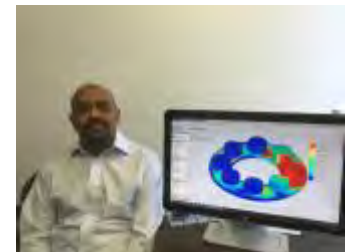
Sakhrat Khizroev, a Professor with a joint appointment at the College of Engineering and the College of Medicine, is an inventor with an expertise in nanomagnetic/spintronic devices. His group's current research focus is at the intersection of nanotechnology with medicine. Prior to re-joining FIU in 2011 to lead the university-wide multi-disciplinary research effort in personalized nanomedicine, Khizroev was a tenured Professor at the Department of Electrical Engineering of the University of California, Riverside (UCR). From 2003-2005, he was Associate Professor of Electrical Engineering at FIU (tenured). Prior to his academic career, Khizroev spent almost four years as a Research Staff Member with Seagate Research (1999-2003) and one year as a Doctoral Intern with IBM Almaden Research Center (1997-1998). For his pioneering contribution to the development of perpendicular magnetic recording (PMR) and other discoveries in the broad area of spin-based nanodevices, Khizroev was named a Fellow of National Academy of Inventors (2012). He holds over 31 granted US patents plus many international patents. He has authored over 130 peer-reviewed papers. He has acted as a guest science and technology commentator on television and radio programs across the globe. He has served as an Editor for IEEE Transactions on Nanotechnology, Nanotechnology, and IEEE Transactions on Magnetics and sits on editorial boards of several Science and Technology journals. Khizroev received a B.S./M.S. degree in Physics from Moscow Institute of Physics and Technology in 1992/1994, a M.S. degree in Physics from the University of Miami, and a PhD degree in Electrical and Computer Engineering from Carnegie Mellon University in 1999.

Free Tutorials on Sunday November 13th

Tutorial 1: CAD Embedded Electro-Mechanical Simulation With Applications (Concerto A)

Abstract—In today's fast paced engineering product design environment, 3D and collaborative design is unavoidable. Engineers across multiple disciplines work jointly during the product development stage and this is enabled by 3D CAD and PDM systems. Simulation has become an integral part of the product development cycle and engineers adopt simulation early in the cycle. This leads to better quality products, fewer prototypes and faster time to market. EMS is a product of EMW that is embedded inside popular 3D CAD like SOLIDWORKS, Autodesk Inventor and SpaceClaim. EMS is a full 3D field simulation software that helps engineers simulate real life electrical machines like motors, transformers, linear actuators, solenoids, sensors, high voltage devices etc. In this tutorial, Ahmed will walk you through some of the basics of EMS talking about its philosophy of doing simulations with various real life examples. You can learn how EMS can help you in your product development process and also find out how to get a free trial version of EMS. We look forward to seeing you in this session.

Ahmed Khebir holds a BS and MS in Engineering Science from the Pennsylvania State University (1985, 1986), and Ph.D. degree in Electrical and Computer Engineering from the University of Illinois at Urbana-Champaign (1989). He is the general manager of ElectroMagneticWorks (EMW). Prior to joining EMW, he worked at General Electric Corporate Research and Development, Schenectady, New York, as a Senior Scientist where he led a team to develop innovative radar cross section prediction technology. He also held a research position at the University of Montreal where he designed miniature antennas that are inserted in a human heart for the treatment of cardiac arrhythmia.



Tutorial 2: Multi-Physics Analysis of Adjustable Speed Motor Drives (Concerto B)

Abstract—Adjustable speed motor drives exhibit electromagnetic, structural and thermal phenomenon which can interactively affect the performance of the drive system in terms of its efficiency, acoustic noise, torque density, and safety. These systems contain a physical interface between the power electronic circuit and the terminals of the electric machine. It is a necessity to predict the performance of the drive system under normal and transient conditions. This tutorial will provide an insightful and enabling understanding of the interrelated multi-physics phenomena which includes, electromagnetic, fluid dynamics, structural, thermal, and physical interface with power electronics drivers. Examples from induction, permanent magnet synchronous machines, and switched reluctance machines will be provided to explain the impact of the multi-physics analysis in the context of real world applications. The contents of this 3 hours tutorial are selected such that practicing engineers and graduate students as well as research scientists can benefit from.

Dr. Babak Fahimi received his B.S. and M.S. degrees in Electrical Engineering with the highest distinction from the University of Tehran, Iran in 1991 and 1993 respectively. He earned his PhD in Electrical Engineering from Texas A&M University in 1999. Dr. Fahimi has been the recipient of DAAD scholarship (1993-1995), IEEE R.M. Bass Power Electronics Young Investigator Award (2003), SAE Ralph Teetor Educational award (2008), Fulbright scholarship in 2010, and IEEE Cyril Veinott electromechanical energy conversion award in 2015. Dr. Fahimi has co-authored 300 (85 Journal and 215 peer reviewed conference papers) scientific articles, 15 book chapters, and several technical reports in the general area of adjustable speed motor drives and power electronics. He holds 17 US patents and has 6 more pending. Dr. Fahimi has served IEEE in various capacities including chairing of the IEEE Vehicle Power and Propulsion Conference (2007), chairing of the IEEE International future energy challenge competition (2009), chairing the electric machines committee in IEEE-IES (2007-2009), chairing the 2010 IEEE Applied Power Electronics Conference and Expo, and chairing of 2014 IEEE Industrial Electronics Annual Meeting (IECON). Dr. Fahimi is/has been an associate editor of the IEEE Transactions on Industrial Electronics, IEEE Transactions on Energy Conversion, IEEE Transactions on Vehicular Technology, and IEEE Transactions on Power Electronics. Dr. Fahimi has supervised 18 PhD (4 tenured/tenure track professors and the other 14 in industry) and 16 M.S. students. He is a Fellow of IEEE for his contributions to modeling and analysis of adjustable speed ac motor drives.



Tutorial 3: Battery Physics-Based Modeling and their Applications (Concerto C)

Abstract—The lead acid and lithium ion battery have become staples to power many aspects of our lives. The lead acid battery remains a dependable resource to provide steady, reliable power for both vehicles and the grid, alike. Unfortunately, its deployment in electric vehicles (EV) have been limited as a result of long charging periods and particularly, a limited state of health (SoH) sensitive to high discharge currents and deep depth of discharge. The lithium ion battery has emerged as a proven alternative for applications synonymous with high charge and discharge currents. Accurate modeling and simulation of batteries remain a challenge and can present the designer with a number of options from a traditional 1st order Randles equivalent circuit model, up to a physics-based model based on finite element analysis. In this tutorial, multiphysics models for the lead acid and lithium ion batteries will be derived and compared to common electrochemical equivalent circuits. Their operational performance and some applications will be discussed. An extension will then be made to enhance the physics-based models to account for the degradation processes which impact SoH. A discussion over battery SoH mechanisms and the usage of impedance spectroscopy to obtain the equivalent circuit in industrial systems will be connected to the multiphysics domain showing how information from these processes can be reflected within the physics-based model.

Christopher R. Lashway received his B.S. in electrical engineering technology at the University of Central Florida, Orlando in 2008 and M.Eng. degree in electrical engineering at Pennsylvania State University – Harrisburg in 2010. He moved on to work as an engineer for the Naval Surface Warfare Center in Dahlgren, Virginia on a wide range of Marine Corps and Naval projects focusing on mobile power and energy solutions. From 2010 to 2012, he supported the Squad Electric Power program, an effort focused on consolidating proprietary non-rechargeable batteries found in tactical radios and night vision equipment through developing a central power manager with a lithium ion battery pack. During this period, he detailed at the Naval Research Laboratory as an electrical integration lead to combine wearable space-grade solar panels with the power manager to charge on-the-go. He then went on to support the Modular Tactical Vehicle Refresh (MTVR), a Marine Corps Systems Command effort which focused on hybridizing standard cargo trucks through the integration of a lead acid battery bank and an auxiliary generator. He is currently a PhD candidate at the Energy Systems Research Laboratory at Florida International University in Miami, FL where his research is focused on hybrid energy storage modeling through finite element analysis and improving multi-chemistry battery management systems.



Schedule of Events

Time	Sunday, November 13 th , 2016
1:00 pm - 4:00 pm	Free Tutorial 1 - CAD Embedded Electro-Mechanical Simulation With Applications - (Concerto A)
1:00 pm - 4:00 pm	Free Tutorial 2 – Multi-Physics Analysis of Adjustable Speed Motor Drives - (Concerto B)
1:00 pm - 4:00 pm	Free Tutorial 3 - Battery Physics-Based Modeling and their Applications - (Concerto C)
2:00 pm- 4:00 pm	Exhibition Set Up
6:00 pm – 8:00 pm	Conference Reception

Time	Monday, November 14 th , 2016			
7:00 am- 8:00 am	Breakfast			
8:00 am- 8:30 am	Opening Session – Professor Osama Mohammed (Symphony I)			
8:30 am -10:15 am	Oral Session 1- MO01 Numerical Techniques 1 Chair: A. A. Arkadan (Symphony I)	Oral Session 2- MO02 Devices & Applications 1 Chair: Chang-Seop Koh (Concerto A)	Oral Session 3-MO03 Material Modeling 1 Chair: Yasushi Kanai (Concerto B)	Oral Session 4- MO04 Optimisation & Design 1 Chair: Ronghai Qu (Concerto C)
10:15 am- 10:30 am	Coffee Break			
10:30 am-12:00 pm	Poster Session 1 Poster Session 2 Poster Session 3 Poster Session 4 Poster Session 5 Poster Session 6 Poster Session 7 Poster Session 8	MP011 MP012 MP021 MP022 MP031 MP032 MP041 MP042	Coupled Problems I Bio Electromagnetic Field Devices and Applications Material Modeling Static and Quasi Static Fields Wave Propagation Numerical Techniques Optimization and Design	Chair: Christian Magele Chair: Costin Ifrim Chair: Yves Marechal Chair: Dennis Giannacopoulos Chair: Gerard Meunier Chair: Jan Sykulski Chair: Joao Pedro Bastos Chair: Karl Hollaus (Symphony II & III)
12:00 pm- 1:30 pm	Lunch Break			
1:30 pm- 3:00 pm	Poster Session 9 Poster Session 10 Poster Session 11 Poster Session 12 Poster Session 13 Poster Session 14 Poster Session 15 Poster Session 16	MP051 MP052 MP061 MP062 MP071 MP072 MP081 MP082	Devices and Applications Static and Quasi Static Fields Numerical Techniques Optimization and Design Devices and Applications Coupled Problems Optimization and Design Devices and Applications	Chair: So Noguchi Chair: Lionel Pichon Chair: Markus Clemens Chair: Noboru Niguchi Chair: M. Reza Barzegaran Chair: Renato Cardoso Mesquita Chair: Yves Marechal Chair: Bai Baodong (Symphony II & III)
3:00 pm- 3:15 pm	Coffee Break			
3:15 pm- 5:00 pm	Oral Session 5- MO05 Static & Quasi Static Fields 1 Chair: Erich Schmidt (Concerto A)	Oral Session 6- MO06 Coupled Problems 1 Chair: Sami Barmada (Concerto B)	Oral Session 7- MO07 Nano Magnetics & Bio Electric Fields Chair: Shiyong Yang (Symphony I)	Oral Session 8- MO08 Devices & Applications 2 Chair: Dan Ionel (Concerto C)

Time	Tuesday, November 15th, 2016			
7:00 am- 8:30 am	Breakfast			
8:30 am -10:15 am	Oral Session 9- TO09 Wave Propagation 1 Chair: Ermanno Cardelli (Symphony I)	Oral Session 10- TO10 Optimization and Design 2 Chair: Raffaele Martone (Concerto A)	Oral Session 11- TO11 Devices & Applications 3 Chair: Feliziani Mauro (Concerto B)	Oral Session 12- TO12 Static and Quasi Static Fields 2 Chair: Anouar Belahcen (Concerto C)
10:15 am- 10:30 am	Coffee Break			
10:30 am-12:00 pm	Poster Session 17	TP011	Coupled Problems I	Chair: Bai Baodong
	Poster Session 18	TP012	Devices and Applications	Chair: Christian Magele
	Poster Session 19	TP021	Devices and Applications	Chair: Joao Pedro Bastos
	Poster Session 20	TP022	Static and Quasi Static Fields	Chair: Christian Kruettgen
	Poster Session 21	TP031	Coupled Problems	Chair: M. Reza Barzegaran
	Poster Session 22	TP032	Static and Quasi Static Fields	Chair: David Lowther
	Poster Session 23	TP041	Numerical Techniques	Chair: Christos Antonopoulos
	Poster Session 24	TP042	Devices and Applications	Chair: David Lowther
	(Symphony II & III)			
12:00 pm- 1:30 pm	Lunch Break			
1:30 pm- 3:00 pm	Poster Session 25	TP051	Coupled Problems I	Chair: Christian Magele
	Poster Session 26	TP052	Devices and Applications	Chair: Dennis Giannacopoulos
	Poster Session 27	TP061	Devices and Applications	Chair: Gerard Meunier
	Poster Session 28	TP062	Static and Quasi Static Fields	Chair: Jan Sykulski
	Poster Session 29	TP071	Coupled Problems	Chair: Markus Clemens
	Poster Session 30	TP072	Static and Quasi Static Fields	Chair: Christian Kruettgen
	Poster Session 31	TP081	Numerical Techniques	Chair: Karl Hollaus
	Poster Session 32	TP082	Devices and Applications	Chair: Lionel Pichon
	(Symphony II & III)			
3:00 pm- 3:15 pm	Coffee Break			
3:15 pm- 5:00 pm	Oral Session 13- TO13 Optimization & Design 3 Chair: Charles T. M. Choi (Symphony I)	Oral Session 14- TO14 Devices & Applications 4 Chair: Nathan Ida (Concerto A)	Oral Session 15- TO15 Numerical Techniques 2 Chair: Jasmin Smajic (Concerto B)	Oral Session 16- TO16 Static & Quasi Static Fields 3 Chair: Ruth Sabariego (Concerto C)

Time	Wednesday, November 16th, 2016			
7:00 am- 8:30 am	Breakfast			
8:30 am -10:15 am	Oral Session 17- WO17 Numerical Techniques 3 Chair: Hajime Igarashi (Symphony I)	Oral Session 18- WO18 Material Modeling 2 Chair: Jonathan Bird (Concerto A)	Oral Session 19- WO19 Coupled Problems 2 Chair: Fabio Freschi (Concerto B)	Oral Session 20- WO20 Devices & Applications 5 Chair: Alessandro Formisano (Concerto C)
10:15 am- 10:30 am	Coffee Break			
10:30 am-12:00 pm	Poster Session 33 WP011 Devices and Applications Chair: Kazuhiro Muramatsu Poster Session 34 WP012 Optimization and Design Chair: Lionel Pichon Poster Session 35 WP021 Material Modeling Chair: M. Reza Barzegaran Poster Session 36 WP022 Wave Propagation Chair: Noboru Niguchi Poster Session 37 WP031 Numerical Techniques Chair: Renato Cardoso Mesquita Poster Session 38 WP032 Devices and Applications Chair: So Noguchi Poster Session 39 WP041 Devices and Applications Chair: Christos Antonopoulos Poster Session 40 WP042 Devices and Applications Chair: Markus Clemens (Symphony II & III)			
12:00 pm- 1:30 pm	Lunch Break			
1:30 pm- 3:00 pm	Poster Session 41 WP051 Devices and Applications Chair: Christian Kruettgen Poster Session 42 WP052 Devices and Applications Chair: Bai Baodong Poster Session 43 WP061 Devices and Applications Chair: Olivier Chadebec Poster Session 44 WP062 Devices and Applications Chair: Gerard Meunier Poster Session 45 WP071 Wave Propagation Chair: Karl Hollaus Poster Session 46 WP072 Numerical Techniques Chair: Christos Antonopoulos Poster Session 47 WP081 Devices and Applications Chair: Costin Ifrim Poster Session 48 WP082 Material Modeling Chair: Jan Sykulski (Symphony II & III)			
3:00 pm- 3:15 pm	Coffee Break			
3:15 pm- 5:00 pm	Oral Session 21- WO21 Coupled Problems 3 Chair: Ahmed Mohamed (Symphony I)	Oral Session 22- WO22 Static and Quasi Static Fields 4 Chair: Antonios Kladas (Concerto A)	Oral Session 23- WO23 Numerical Techniques 4 Chair: Piergiorgio Alotto (Concerto B)	Oral Session 24- WO24 Optimization & Design 4 Chair: Zsolt Badics (Concerto C)
5:00 pm - 5:30 pm	Closing Session and Poster Paper Award Presentation			

Floor Plan of the Conference Location



Technical Program

Overview

OPENING SESSION Monday, November 14, 2016 8:00 AM- 8:30 AM	Prof. Osama Mohammed General Chair (Symphony I)	POSTER SESSION 2-MP052 Monday, November 14, 2016 1:30 PM- 3:00 PM	Static & Quasi Static Fields Lionel Pichon (Symphony II & III)
ORAL SESSION 1-MO01 Monday, November 14, 2016 8:30 AM- 10:15 AM	Numerical Techniques I A. A. Arkadan (Symphony I)	POSTER SESSION 2-MP061 Monday, November 14, 2016 1:30 PM- 3:00 PM	Numerical Techniques Markus Clemens (Symphony II & III)
ORAL SESSION 2-MO02 Monday, November 14, 2016 8:30 AM- 10:15 AM	Devices and Applications I Chang-Seop Koh (Concerto A)	POSTER SESSION 2-MP062 Monday, November 14, 2016 1:30 PM- 3:00 PM	Optimization & Design Noboru Niguchi (Symphony II & III)
ORAL SESSION 3-MO03 Monday, November 14, 2016 8:30 AM- 10:15 AM	Material Modeling I Yasushi Kanai (Concerto B)	POSTER SESSION 2-MP071 Monday, November 14, 2016 1:30 PM- 3:00 PM	Devices and Applications Ermanno Cardelli (Symphony II & III)
ORAL SESSION 4-MO04 Monday, November 14, 2016 8:30 AM- 10:15 AM	Optimization and Design I Ronghai Qu (Concerto C)	POSTER SESSION 2-MP072 Monday, November 14, 2016 1:30 PM- 3:00 PM	Coupled Problems Renato Cardoso Mesquita (Symphony II & III)
POSTER SESSION 1-MP011 Monday, November 14, 2016 10:30 AM- 12:00 PM	Coupled Problems I Christian Magele (Symphony II & III)	POSTER SESSION 2-MP081 Monday, November 14, 2016 1:30 PM- 3:00 PM	Optimization & Design Yves Marechal (Symphony II & III)
POSTER SESSION 1-MP012 Monday, November 14, 2016 10:30 AM- 12:00 PM	NanoMagnetics & Bioelectric Fields Costin Ifrim (Symphony II & III)	POSTER SESSION 2-MP082 Monday, November 14, 2016 1:30 PM- 3:00 PM	Devices and Applications Sami Barmada (Symphony II & III)
POSTER SESSION 1-MP021 Monday, November 14, 2016 10:30 AM- 12:00 PM	Devices and Applications Yves Marechal (Symphony II & III)	ORAL SESSION 5-MO05 Monday, November 14, 2016 3:15 PM- 5:00 PM	Static & Quasi Static Fields I Erich Schmidt (Concerto A)
POSTER SESSION 1-MP022 Monday, November 14, 2016 10:30 AM- 12:00 PM	Material Modeling Dennis Giannacopoulos (Symphony II & III)	ORAL SESSION 6-MO06 Monday, November 14, 2016 3:15 PM- 5:00 PM	Coupled Problems I Sami Barmada (Concerto B)
POSTER SESSION 1-MP031 Monday, November 14, 2016 10:30 AM- 12:00 PM	Static & Quasi Static Fields Gerard Meunier (Symphony II & III)	ORAL SESSION 7-MO07 Monday, November 14, 2016 3:15 PM- 5:00 PM	NanoMagnetics & Bioelectric Fields Shiyong Yang (Symphony I)
POSTER SESSION 1-MP032 Monday, November 14, 2016 10:30 AM- 12:00 PM	Wave Propagation Jan Sykulski (Symphony II & III)	ORAL SESSION 8-MO08 Monday, November 14, 2016 3:15 PM- 5:00 PM	Devices and Applications II Dan Ionel (Concerto C)
POSTER SESSION 1-MP041 Monday, November 14, 2016 10:30 AM- 12:00 PM	Numerical Techniques Joao Pedro Bastos (Symphony II & III)	ORAL SESSION 9-TO09 Tuesday, November 15, 2016 8:30 AM- 10:15 AM	Wave Propagation I Ermanno Cardelli (Symphony I)
POSTER SESSION 1-MP042 Monday, November 14, 2016 10:30 AM- 12:00 PM	Optimization & Design Karl Hollaus (Symphony II & III)	ORAL SESSION 10-TO10 Tuesday, November 15, 2016 8:30 AM- 10:15 AM	Optimization & Design II Raffaele Martone (Concerto A)
POSTER SESSION 2-MP051 Monday, November 14, 2016 1:30 PM- 3:00 PM	Devices and Applications So Noguchi (Symphony II & III)	ORAL SESSION 11-TO11 Tuesday, November 15, 2016 8:30 AM- 10:15 AM	Devices and Applications III Feliziani Mauro (Concerto B)

ORAL SESSION 12-TO12 Tuesday, November 15, 2016 8:30 AM- 10:15 AM	Static & Quasi Static Fields II Anouar Belahcen (Concerto C)	POSTER SESSION 4-TP082 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Devices and Applications Dan Ionel (Symphony II & III)
POSTER SESSION 3-TP011 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Coupled Problems Bai Baodong (Symphony II & III)	ORAL SESSION TO13 Tuesday, November 15, 2016 3:15 PM- 5:00 PM	Optimization & Design III Charles T. M. Choi (Symphony I)
POSTER SESSION 3-TP012 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Devices and Applications Christian Magele (Symphony II & III)	ORAL SESSION TO14 Tuesday, November 15, 2016 3:15 PM- 5:00 PM	Devices and Applications IV Nathan Ida (Concerto A)
POSTER SESSION 3-TP021 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Devices and Applications Joao Pedro Bastos (Symphony II & III)	ORAL SESSION TO15 Tuesday, November 15, 2016 3:15 PM- 5:00 PM	Numerical Techniques II Jasmin Smajic (Concerto B)
POSTER SESSION 3-TP022 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Static & Quasi Static Fields Christian Kruettgen (Symphony II & III)	ORAL SESSION TO16 Tuesday, November 15, 2016 3:15 PM- 5:00 PM	Static & Quasi Static Fields III Ruth Sabariego (Concerto C)
POSTER SESSION 3-TP031 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Coupled Problems Mohammad Reza Barzegaran (Symphony II & III)	ORAL SESSION WO17 Wednesday, November 16, 2016 8:30 AM- 10:15 AM	Numerical Techniques III Hajime Igarashi (Symphony I)
POSTER SESSION 3-TP032 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Static & Quasi Static Fields David Lowther (Symphony II & III)	ORAL SESSION WO18 Wednesday, November 16, 2016 8:30 AM- 10:15 AM	Material Modeling II Jonathan Bird (Concerto A)
POSTER SESSION 3-TP041 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Numerical Techniques Christos Antonopoulos (Symphony II & III)	ORAL SESSION WO19 Wednesday, November 16, 2016 8:30 AM- 10:15 AM	Coupled Problems II Fabio Freschi (Concerto B)
POSTER SESSION 3-TP042 Tuesday, November 15, 2016 10:30 AM- 12:00 PM	Devices and Applications David Lowther (Symphony II & III)	ORAL SESSION WO20 Wednesday, November 16, 2016 8:30 AM- 10:15 AM	Devices and Applications V Alessandro Formisano (Concerto C)
POSTER SESSION 4-TP051 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Coupled Problems Christian Magele (Symphony II & III)	POSTER SESSION 5-WP011 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Devices and Applications Kazuhiro Muramatsu (Symphony II & III)
POSTER SESSION 4-TP052 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Numerical Techniques Dennis Giannacopoulos (Symphony II & III)	POSTER SESSION 5-WP012 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Optimization & Design Lionel Pichon (Symphony II & III)
POSTER SESSION 4-TP061 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Optimization & Design Gerard Meunier (Symphony II & III)	POSTER SESSION 5-WP021 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Material Modeling Mohammad Reza Barzegaran (Symphony II & III)
POSTER SESSION 4-TP062 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Static & Quasi Static Fields Jan Sykulski (Symphony II & III)	POSTER SESSION 5-WP022 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Wave Propagation Noboru Niguchi (Symphony II & III)
POSTER SESSION 4-TP071 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Devices and Applications Shiyou Yang (Symphony II & III)	POSTER SESSION 5-WP031 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Numerical Techniques Renato Cardoso Mesquita (Symphony II & III)
POSTER SESSION 4-TP072 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Devices and Applications Christian Kruettgen (Symphony II & III)	POSTER SESSION 5-WP032 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Devices and Applications So Noguchi (Symphony II & III)
POSTER SESSION 4-TP081 Tuesday, November 15, 2016 1:30 PM- 3:00 PM	Devices and Applications Karl Hollaus (Symphony II & III)	POSTER SESSION 5-WP041 Wednesday, November 16, 2016 10:30 AM- 12:00 PM	Devices and Applications Christos Antonopoulos (Symphony II & III)

<p>POSTER SESSION 5-WP042 Wednesday, November 16, 2016 10:30 AM- 12:00 PM</p>	<p>Devices and Applications Markus Clemens (Symphony II & III)</p>	<p>ORAL SESSION WO21 Wednesday, November 16, 2016 3:15 PM- 5:00 PM</p>	<p>Coupled Problems III Ahmed Mohamed (Symphony I)</p>
<p>POSTER SESSION 6-WP051 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Devices and Applications Christian Kruettgen (Symphony II & III)</p>	<p>ORAL SESSION WO22 Wednesday, November 16, 2016 3:15 PM- 5:00 PM</p>	<p>Static & Quasi Static Fields IV Antonios Kladas (Concerto A)</p>
<p>POSTER SESSION 6-WP052 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Devices and Applications Bai Baodong (Symphony II & III)</p>	<p>ORAL SESSION WO23 Wednesday, November 16, 2016 3:15 PM- 5:00 PM</p>	<p>Numerical Techniques IV Piergiorgio Alotto (Concerto B)</p>
<p>POSTER SESSION 6-WP061 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Devices and Applications Olivier Chadebec (Symphony II & III)</p>	<p>ORAL SESSION WO24 Wednesday, November 16, 2016 3:15 PM- 5:00 PM</p>	<p>Optimization and Design IV Zsolt Badics (Concerto C)</p>
<p>POSTER SESSION 6-WP062 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Devices and Applications Gerard Meunier (Symphony II & III)</p>		
<p>POSTER SESSION 6-WP071 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Wave Propagation Yasushi Kanai (Symphony II & III)</p>		
<p>POSTER SESSION 6-WP072 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Numerical Techniques Christos Antonopoulos (Symphony II & III)</p>		
<p>POSTER SESSION 6-WP081 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Devices and Applications Costin Ifrim (Symphony II & III)</p>		
<p>POSTER SESSION 6-WP082 Wednesday, November 16, 2016 1:30 PM- 3:00 PM</p>	<p>Material Modeling Raffaele Martone (Symphony II & III)</p>		

Technical Program

OPENING SESSION
Sunday, November 13, 2016

Prof. Osama A Mohammed
General Chair

(Symphony I)

ORAL SESSION **MO01**
Monday, November 14, 2016
8:30 AM- 10:00 AM

Numerical Techniques I
A. A. Arkadan
(Symphony I)

- 8:30 AM- 8:50 AM MO01-1 K. Hollaus
Technische University Wien, Institute for Analysis and Scientific Computing, *AUSTRIA*
Multiscale and Harmonic Balance FEM for the Eddy Current Problem in Laminated Iron Cores
- 8:50 AM- 9:10 AM MO01-2 T. Mifune, Y. Takahashi, K. Fujiwara,
Kyoto University, *JAPAN*
Complex-Valued Formulation of Nonlinear Time-Harmonic Magnetic Field Analysis and New Krylov-Like Solvers
- 9:10 AM- 9:30 AM MO01-3 L. Montier, S. Clénet, T. Henneron, B. Goursaud
L2EP, University Lille 1, *FRANCE*
Rotation movement based on the Spatial Fourier Interpolation Method (SFIM)
- 9:30 AM- 9:50 AM MO01-4 T. Henneron, S. Clénet
university Lille1 - L2EP, *FRANCE*
Parametric analysis of Magneto-harmonic problem based on Proper Generalized Decomposition
- 9:50 AM- 10:10 AM MO01-5 U. Römer, H. De Gersem
Technische Universität Darmstadt, *GERMANY*
Balancing Modeling and Discretization Errors in the Numerical Approximation of Magnetostatic Fields with Uncertainties

ORAL SESSION **MO02**
Monday, November 14, 2016
8:30 AM- 10:00 AM

Devices and Applications I
Chang-Seop Koh
(Concerto A)

- 8:30 AM- 8:50 AM MO02-1 M. Wu, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Multiphysics Simulation of Pulsed Cold Plasma Arc Rotation in the Field of a Ring Permanent Magnet
- 8:50 AM- 9:10 AM MO02-2 D. Chen, B. Bai, W. Yuan
Shenyang University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Study on the Protection and Energy Transmission Modes of One Phase Short Circuit to Ground in Inverters
- 9:10 AM- 9:30 AM MO02-3 C. Jäger, I. Grinbaum, J. Smajic
University of Applied Sciences Rapperswil HSR, *SWITZERLAND*
Dynamic Short-Circuit Analysis of Synchronous Machines
- 9:30 AM- 9:50 AM MO02-4 M. Kamruzzaman, M. Barzegaran, O. Mohammed
Lamar University, *UNITED STATES OF AMERICA*
EMI reduction of PMSM Drive through Matrix converter controlled with wide band gap switches
- 9:50 AM- 10:10 AM MO02-5 S. Matsutomo, T. Manabe, V. Cingoski, S. Noguchi
Hokkaido University, *JAPAN*
A computer aided education system based on augmented reality by immersion to 3-D magnetic field

ORAL SESSION **MO03**
Monday, November 14, 2016
8:30 AM- 10:00 AM

Material Modeling I
Yasushi Kanai
(Concerto B)

- 8:30 AM- 8:50 AM MO03-1 Y. Sato, H. Igarashi
Hokkaido University, *JAPAN*
Time-domain Analysis of Soft Magnetic Composite Using Equivalent Circuit Obtained via Homogenization
- 8:50 AM- 9:10 AM MO03-2 J. Kitao, Y. Takahashi, K. Fujiwara, A. Ahagon, T. Matsuo, A. Daikoku
Doshisha Univ., Mitsubishi Electric Corp. / Japan, *JAPAN*
Homogenization Method for Laminated Iron Core Taking Account of Hysteretic Property
- 9:10 AM- 9:30 AM MO03-3 C. Ermanno, A. Faba, A. Laudani, S. Quondam Antonio, F. Riganti Fulginei, A. Salvini
University of Perugia, *ITALY*
Magnetic Modelling for the Texture Analysis of Fe-Si Alloys
- 9:30 AM- 9:50 AM MO03-4 K. Hoffmann, J. Bastos, J. Leite, N. Sadowski, F. Mendes
Univ. Fed. Santa Catarina, *BRAZIL*
An accurate vector Jiles-Atherton model for improving the FEM convergence
- 9:50 AM- 10:10 AM MO03-5 L. Daniel, F. Bouillault
GeePs-CentraleSupélec, *FRANCE*
An equivalent strain approach for magneto-elastic couplings

ORAL SESSION **MO04**
Monday, November 14, 2016
8:30 AM- 10:00 AM

Optimization & Design I
Ronghai Qu
(Concerto C)

- 8:30 AM- 8:50 AM MO04-1 X. Zhang, W. Li, C. Gerada, H. Zhang, J. Li, M. Galea, D. Gerada, J. Cao
Beijing Jiaotong University, *UNITED KINGDOM*
CQICO and multi-objective thermal optimization for high speed PM generator
- 8:50 AM- 9:10 AM MO04-2 K. Lee, S. Hong, I. Park
Sungkyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Dot Sensitivity Analysis for Topology Optimization of Dielectric Material in Electrostatic System
- 9:10 AM- 9:30 AM MO04-3 G. Lossa
University of Mons, *BELGIUM*
Influence of the Geometrical Uncertainties on the RLC parameters of Wound Inductors Modeled Using the Finite Element Method
- 9:30 AM- 9:50 AM MO04-4 A. Salimi, D. Lowther
Electrical and Computer Engineering Department, McGill University, *CANADA*
Projection-Based Objective Space Reduction for Many-Objective Optimization Problems: Application to an Induction Motor Design
- 9:50 AM- 10:10 AM MO04-5 T. Bauernfeind, P. Baumgartner, O. Biro, C. Magele, K. Preis, R. Torchio
Institute of Fundamentals and Theory in Electrical Engineering / Graz University of Technology, *AUSTRIA*
PEEC-Based Multi-Objective Synthesis of Non-Uniformly Spaced Linear Antenna Arrays

POSTER SESSION **MP011**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Coupled Problems I
Christian Magele
(Symphony II & III)

- 10:30 AM-12:00 PM MP011-1 N. Rahman, E. Bostanci, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Thermal Analysis of Switched Reluctance Motor with Direct In-Winding Cooling System

10:30 AM-12:00 PM	MP011-2	J. Lee, J. Chang Dong-A University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Analysis of the Vibration Characteristics of Coaxial Magnetic Gear
10:30 AM-12:00 PM	MP011-3	W. Li, P. Wang, Y. Xue, Y. Li, D. Li, J. Zeng Beijing Jiaotong University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Influence of Rotor Structure on Field Current and Rotor Electromagnetic Field of Turbine Generator Under Out-of-Phase Synchronization
10:30 AM-12:00 PM	MP011-4	S. Barmada, A. Musolino, M. Raugi, R. Rizzo, E. Tripodi DESTEC University of Pisa, <i>ITALY</i> Electromechanical analysis of a new PMs Bearing
10:30 AM-12:00 PM	MP011-5	P. Du, H. Chen The Hong Kong Polytechnic University, <i>HONG KONG S.A.R. (CHINA)</i> Analysis of Transient Magnetic Shielding made by Conductive Plates with a PEEC method
10:30 AM-12:00 PM	MP011-6	H. Li, S. Wang, J. Zhu Xi'an Jiaotong University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Titanium Droplet Formation in Electromagnetic Levitation Melting Process
10:30 AM-12:00 PM	MP011-7	P. Zhang, Q. Yang, X. Zhang, Y. Li, Y. Li Hebei University of Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Comparative study of metal obstacles variations in disturbing wireless power transmission system
10:30 AM-12:00 PM	MP011-8	S. Bazhar, J. Fontchastagner, N. Takorabet, N. Labbe University de Lorraine - GREEN, <i>FRANCE</i> Hybrid Analytical Model Coupling Laplace's Equation and Reluctance Network for Electrical Machines
10:30 AM-12:00 PM	MP011-9	G. Caron, T. Henneron, F. Piriou, J. Mipo University Lille 1 - Laboratoire L2EP, <i>FRANCE</i> Numerical Modeling of Steady State of Magnetostatic Problems Coupled with nonlinear Electric Circuit
10:30 AM-12:00 PM	MP011-10	L. Codecasa, D. Desideri, A. Doria, A. Maschio, F. Moro Dipartimento di Ingegneria Industriale, University di Padova, <i>ITALY</i> A Novel Finite Integration Technique Model for Static and Dynamic Piezoelectric Coupled Problems

POSTER SESSION **MP012**
Monday, November 14, 2016
11:00 AM- 12:30 PM

NanoMagnetics & Bioelectric Fields
Costin Ifrim
(Symphony II & III)

10:30 AM-12:00 PM	MP012-1	F. Palandrani, T. Campi, S. Cruciani, V. De Santis, F. Maradei, M. Feliziani University of L'Aquila, <i>ITALY</i> Induced Effects in a Pacemaker equipped with Wireless Power Transfer Charging System
10:30 AM-12:00 PM	MP012-2	V. Cirimele, F. Freschi, L. Giaccone, L. Pichon, M. Repetto Politecnico di Torino, <i>ITALY</i> Human exposure assessment in dynamic inductive power transfer for automotive applications
10:30 AM-12:00 PM	MP012-3	C. Choi, S. Huang, Y. Lee National Chiao Tung University, Dept of Electrical and Computer Engineering, <i>TAIWAN, REPUBLIC OF CHINA</i> Channel Interaction in Cochlear Implant Acoustic Models
10:30 AM-12:00 PM	MP012-4	T. Damatopoulou, V. Lazaris, A. Kladas ICCS-National Technical University of Athens, <i>GREECE</i> Particular Electromagnetic Shielding Analysis of Cables for Electric Vehicle Applications

- 10:30 AM-12:00 PM MP012-5 W. Li, S. Zhang, H. Yang, W. Hou, G. Xu, W. Yan
Hebei University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
A Forward Solution of Acoustic Inhomogeneity in Magnetoacoustic Tomography with Magnetic Induction Base on GFEM
- 10:30 AM-12:00 PM MP012-6 S. Zhang, Y. Guo, G. Xu, W. Yan
Hebei University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Electrical Impedance Tomography Reconstruction using a Hybrid Variation Regularization Algorithm
- 10:30 AM-12:00 PM MP012-7 A. Arduino, O. Bottauscio, M. Chiampi, L. Zilberti
IST. NAZ. RICERCA METROLOGICA, *ITALY*
Douglas-Gunn Method Applied to Dosimetric Assessment in Magnetic Resonance Imaging
- 10:30 AM-12:00 PM MP012-8 W. Kaiser, M. Kiechle, G. Ziemys, D. Schmitt-Landsiedel, S. Breitkreutz-V. Gamm
Technical University of Munich, *GERMANY*
Engineering the switching behavior of nanomagnets for logic computation using 3-dimensional modeling and simulation
- 10:30 AM-12:00 PM MP012-9 T. Tanaka, A. Furuya, Y. Uehara, K. Shimizu, J. Fujisaki, T. Ataka, H. Oshima
Fujitsu Ltd., *JAPAN*
Speeding up Micromagnetic Simulation by Energy Minimization with Interpolation of Magnetostatic Field
- 10:30 AM-12:00 PM MP012-10 E. Smith, F. Freschi, M. Repetto, S. Crozier
Politecnico di Torino, *ITALY*
Synthesis of the cooling pathways optimal layout for MRI gradient coils

POSTER SESSION **MP021**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Devices & Applications
Yves Marechal
(Symphony II & III)

- 10:30 AM-12:00 PM MP021-1 K. Shin, H. Park, H. Cho, S. Lee, J. Choi
Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and Analysis of Magnetic-Geared Permanent Magnet Motor considering Flux Modulating Iron Structure
- 10:30 AM-12:00 PM MP021-2 N. Feng, H. Yu, M. Hu, Z. Shi, X. Liu
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
A Rotary-Linear Magnetic-Geared Permanent Magnet Machine
- 10:30 AM-12:00 PM MP021-3 V. Ghorbanian, D. Lowther
Electrical and Computer Engineering Department, McGill University, *CANADA*
Magnetic and Electrical Design Challenges of Inverter-fed Permanent Magnet Synchronous Motors
- 10:30 AM-12:00 PM MP021-4 H. Yang, H. Lin, Z. Zhu, K. Guo, S. Fang, Y. Huang
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Novel Design of a Variable Reluctance Permanent Magnet Machine with Bipolar Coil Flux-Linkage
- 10:30 AM-12:00 PM MP021-5 T. Hacib, Y. Le Bihan, M. Chelabi, B. Houssem, M. Mekideche
GeePs, *ALGERIA*
Eddy Current Characterization Using Robust Meta-Heuristic Algorithms for LS-SVM Hyper-Parameters Optimization
- 10:30 AM-12:00 PM MP021-6 K. Lu, Y. Xia
Aalborg University, *DENMARK*
Bounded-state Magnetic Particle Imaging for Localization of Helical Blood-Vessel Micro-robot by Using Pickup Coils

- 10:30 AM-12:00 PM MP021-7 Y. Zhong, Y. Fang, X. Huang, Q. Lu
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
Magnetic Field Analysis Using an Analytical Method in a Radial Magnetic Bearing
- 10:30 AM-12:00 PM MP021-8 X. Yin, P. Pfister, Y. Fang
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
Analytical Modeling of a Novel Vernier Pseudo-Direct- Drive Permanent-Magnet Machine
- 10:30 AM-12:00 PM MP021-9 G. Jang, J. Kim, J. Choi
Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Design and Torque Analysis Considering Eddy- Current Reduction of Axial-Flux Permanent Magnet Couplings with Halbach Array Based on 3D-FEM
- 10:30 AM-12:00 PM MP021-10 J. Song, J. Lee, Y. Kim, S. Jung
Sungkyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Analysis and Modeling of Variable Flux Memory Motor Using a Lumped Magnetic Circuit Method
- 10:30 AM-12:00 PM MP021-11 B. W. Kim, G. H. Kang, S. K. Lee, Y. U. Cho
Korea Marine Equipment Research Institute, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and Verification of 200kW Interior Permanent Magnet Synchronous Motor for Ship Propulsion

POSTER SESSION **MP022**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Material Modeling
Dennis Giannacopoulos
(Symphony II & III)

- 10:30 AM-12:00 PM MP022-1 H. Li, X. Li, X. Tian, X. Chen, F. Jia, L. Wang, Z. Zhao
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
An Improved Transformers Model Considering of Losses and Hysteresis of Core under Different Frequency Sinusoidal Voltage Waveform
- 10:30 AM-12:00 PM MP022-2 P. Diez
Infolytica Corp., *CANADA*
Symmetric Invertible B-H Curves Using Piecewise Linear Rationals
- 10:30 AM-12:00 PM MP022-3 S. Odawara, N. Kitsunezaki, K. Fujisaki, M. Nakagawa, N. Kitano, Y. Asano
Toyota Technological Institute, *JAPAN*
Numerical Calculation of Magnetic Hysteresis Property Taking into Account Magnetic Anisotropy of Electrical Steel Sheet
- 10:30 AM-12:00 PM MP022-4 K. Malleron, H. Talleb, A. Gensbittel, Z. Ren
L2E, UPMC University Pierre et Marie Curie, *FRANCE*
Finite element modeling of magnetolectric energy transducers with interdigitated electrodes
- 10:30 AM-12:00 PM MP022-5 S. Hussain, D. Lowther
McGill University, *CANADA*
The Modified Jiles-Atherton Model for the Accurate Prediction of Iron Losses
- 10:30 AM-12:00 PM MP022-6 S. Ito, T. Mifune, T. Matsuo, Y. Takahashi, K. Fujiwara, C. Kaido
Kyoto University, *JAPAN*
The domain structure model including pinning effect based on the statistical distribution function
- 10:30 AM-12:00 PM MP022-7 W. Li, Z. Cao, X. Zhang, J. Zeng
Beijing Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Research on Rotor Eddy Current Fields and Temperature Fields of High Voltage Solid Rotor PMSM with a Novel Stator Slot Wedge
- 10:30 AM-12:00 PM MP022-8 W. Xu, N. Duan, S. Wang, J. Zhu
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Modelling of Magnetic Properties in Soft Magnetic Composite Material under Rotational Magnetization

- 10:30 AM-12:00 PM MP022-9 P. Eckert, L. Righi, A. Flores Filho, J. Kanieski
Laboratory of Electrical Machines, Energy and Drives, Federal University of Rio Grande do Sul, *BRAZIL*
A Stochastic Method for Characterization of Soft Magnetic Material with a Damped LC Circuit
- 10:30 AM-12:00 PM MP022-10 F. Mendes, J. Leite, N. Batistela, N. Sadowski, F. Suárez
GRUCAD/EEL/ UFSC, *BRAZIL*
A Simplified Method for Acquisition of the Parameters of Jiles-Atherton Hysteresis Scalar Model Without Use of Derivatives

POSTER SESSION **MP031**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Static & Quasi Static Fields
Gerard Meunier
(Symphony II & III)

- 10:30 AM-12:00 PM MP031-1 G. Vinsard, S. Dufour
University de Lorraine, LEMTA, *FRANCE*
Eddy Currents in Cusp Shaped Thin Shell
- 10:30 AM-12:00 PM MP031-2 Z. Cheng, B. Forghani, J. Hou, T. Liu, Y. Fan, L. Liu, F. Che, F. Meng, X. Zhao,
Baoding Tianwei Baobian Electric Co., LTD, *CHINA, PEOPLE'S REPUBLIC OF*
Magnetic Loss Modeling inside GO Silicon Steel Laminations Excited by 3-D Harmonic Magnetic Field
- 10:30 AM-12:00 PM MP031-3 Y. Zhao, W. Fu
Ansys Inc, *HONG KONG S.A.R. (CHINA)*
A Novel Formulation with Coulomb Gauge for 3-D Magnetostatic Problems Using Edge Elements
- 10:30 AM-12:00 PM MP031-4 X. Xu, P. Lyu, S. Yan, Z. Ren
Institute of Microelectronics of Chinese Academy of Sciences, *CHINA, PEOPLE'S REPUBLIC OF*
Stationary Electro-Thermal Coupling Analysis Considering Dual Finite Element Formulations of Steady Current Field
- 10:30 AM-12:00 PM MP031-5 S. Ziani, T. Henneron, Y. Le Menach
University of Lille/L2EP, *FRANCE*
Nonlinear Lamination Stacks Studied with Harmonic Balance FEM Supplied by Magnetic Flux Arising from PWM
- 10:30 AM-12:00 PM MP031-6 W. Dong
Global Energy Interconnection Research Institute, *CHINA, PEOPLE'S REPUBLIC OF*
Rated Capacitance Design of a New 1000kV Equipotential Shielding Capacitor Voltage Transformer Under the Interference of Stray Capacitance
- 10:30 AM-12:00 PM MP031-7 M. Zang, M. Clemens
University of Wuppertal, Chair of Electromagnetic Theory, *GERMANY*
A Co-Simulation Scalar-Potential Finite Difference (SPFD) Approach for the Simulation of Human Exposure to Magneto-Quasistatic Fields
- 10:30 AM-12:00 PM MP031-8 D. Wang, T. Lu, Q. Li, B. Chen, X. Li
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
3-D Electric Field Computation with Charge Simulation Method around Buildings near HV Transmission Lines
- 10:30 AM-12:00 PM MP031-9 Z. Andjelic, K. Ishibashi
POLOPT Technologies, *CROATIA*
Double-Layer BEM for Generic Electrostatics
- 10:30 AM-12:00 PM MP031-10 K. Shin, H. Park, H. Cho, J. Choi
Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Armature Reaction Field and Inductance Calculations for a Permanent Magnet Linear Synchronous Machine Based on Subdomain Model

POSTER SESSION **MP032**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Wave Propagation
Jan Sykulski
(Symphony II & III)

- 10:30 AM-12:00 PM MP032-1 C. Antonopoulos, N. Kantartzis, I. Rekanos
Aristotle University of Thessaloniki, *GREECE*
FDTD Method for Wave Propagation in Havriliak-Negami Media based on Fractional Derivative Approximation
- 10:30 AM-12:00 PM MP032-2 S. Ma, G. Yang, F. Meng, X. Ding, K. Zhang, J. Fu, Q. Wu
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Electrically Tunable Array Antenna with Beam Steering from Backfire to Endfire Based on Liquid Crystal Miniaturized Phase Shifter
- 10:30 AM-12:00 PM MP032-3 B. Che, F. Meng, J. Fu, K. Zhang, G. Yang, Q. Wu
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
A Dual Band CRLH Leaky Wave Antenna with Electrically Steerable Beam Based on Liquid Crystals
- 10:30 AM-12:00 PM MP032-4 P. Lyu, X. Xu, S. Yan, Z. Ren
Institute of Microelectronics of Chinese Academy of Sciences, *CHINA, PEOPLE'S REPUBLIC OF*
Acceleration of Reflection in 2D Ray Tracing Based on Image by Binary Space Partitioning
- 10:30 AM-12:00 PM MP032-5 A. Papadimopoulos, S. Amanatiadis, N. Kantartzis, I. Rekanos, T. Zygidis, T. Tsiboukis
Aristotle University of Thessaloniki, *GREECE*
A Convolutional PML Scheme for the Efficient Modeling of Graphene Structures through the ADE-FDTD Technique
- 10:30 AM-12:00 PM MP032-6 F. Gonçalves, E. Silva, R. Mesquita
Federal University of Minas Gerais - UFMG, *BRAZIL*
Design of Non-Singular Two-Dimensional Layered Cloaks Mapped from Small Areas
- 10:30 AM-12:00 PM MP032-7 M. Cicuttin, L. Codecasa, B. Kapidani, R. Specogna, F. Trevisan
Ecole Nationale des Ponts et Chaussées, *ITALY*
A comparative performance analysis of time-domain formulations for wave propagation problems
- 10:30 AM-12:00 PM MP032-8 M. Cicuttin, L. Codecasa, R. Specogna, F. Trevisan
Ecole Nationale des Ponts et Chaussées, *FRANCE*
A geometric frequency-domain wave propagation formulation for fast convergence of iterative solvers
- 10:30 AM-12:00 PM MP032-9 L. Zhou, D. Wang, Z. Mu, Y. Pu, X. Xi
Xi'an University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Loran-C Ground-wave Propagation Prediction Based on the Calibrated Two-way NAPE Algorithm
- 10:30 AM-12:00 PM MP032-10 Y. Yuan, X. Ding, K. Zhang, Q. Wu
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Planar Efficient Metasurface for Vortex Beam Generating and Converging in Microwave Region

POSTER SESSION **MP041**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Numerical Techniques
Joao Pedro Bastos
(Symphony II & III)

- 10:30 AM-12:00 PM MP041-1 N. Lima, R. Mesquita
Universidade Federal de Minas Gerais, *BRAZIL*
Meshless Vector Radial Basis Functions with Weak Forms

10:30 AM-12:00 PM	MP041-2	T. Zygiridis, A. Papadopoulos, N. Kantartzis, C. Antonopoulos, E. Glytsis, T. Tsiboukis Aristotle University of Thessaloniki - ELKE, <i>GREECE</i> Polynomial-Chaos Time-Domain Method for Uncertainty Analysis of Axially-Symmetric Structures
10:30 AM-12:00 PM	MP041-3	V. Mukherjee, M. Farzamfar, A. Belahcen Aalto University, <i>FINLAND</i> Force Computation of a Synchronous Reluctance Motor by Model Order Reduction with Constraint Based Uneven Snapshot Matrix
10:30 AM-12:00 PM	MP041-4	M. Nitas, C. Antonopoulos, T. Yioultsis Aristotle University of Thessaloniki - ELKE, <i>GREECE</i> E-B Eigenmode Formulation for the Analysis of Lossy and Evanescent Modes in Periodic Structures and Metamaterials
10:30 AM-12:00 PM	MP041-5	A. Sommer, T. Bauer, R. Baltes, R. Dyczij-Edlinger Chair of Electromagnetic Theory, Saarland University, <i>GERMANY</i> A Hierarchical Greedy Strategy for Adaptive Model-Order Reduction
10:30 AM-12:00 PM	MP041-6	J. Keränen, P. Ponomarev, J. Pippuri, P. Råback, M. Lyly, J. Westerlund VTT, <i>FINLAND</i> Parallel Performance of Multi-Slice Method for Skewed Electrical Machines
10:30 AM-12:00 PM	MP041-7	Y. Sato, H. Igarashi Hokkaido University, <i>JAPAN</i> Homogenization Method Based on Model Order Reduction for FE Analysis of Multi-turn Coils
10:30 AM-12:00 PM	MP041-8	H. Ebrahimi, K. Muramatsu, Y. Gao Saga University, <i>JAPAN</i> Fast Non-Linear Magnetic Field Analysis of Inverter-Driven Machines by Applying POD on Linearized Coefficient Matrices
10:30 AM-12:00 PM	MP041-9	K. Cheshmi, G. Xu, S. Zonouz, M. Mehri Dehnavi Rutgers University, <i>UNITED STATES OF AMERICA</i> Axb: A Compiler for Sparse Direct Solvers
10:30 AM-12:00 PM	MP041-10	U. Resende, F. Moreira, M. Afonso, E. Coppoli CEFET-MG, <i>BRAZIL</i> Combined Formulation for Meshless-MoM Hybrid Method Applied to 2D Electromagnetic Scattering

POSTER SESSION **MP042**
Monday, November 14, 2016
11:00 AM- 12:30 PM

Optimization & Design
Karl Hollaus
(Symphony II & III)

10:30 AM-12:00 PM	MP042-1	F. Mach, M. Kurfürst, I. Doležal Faculty of Electrical Engineering, University of West Bohemia in Pilsen, <i>CZECH REPUBLIC</i> Robust Magnetic Flux-based Fault Detection of Electromagnetic Valve Operation under Uncertainty
10:30 AM-12:00 PM	MP042-2	R. Silva, M. Li, T. Rahman, D. Lowther Electrical and Computer Engineering Department, McGill University, <i>CANADA</i> Surrogate-based MOEA/D for Electric Motor Design with Scarce Function Evaluations
10:30 AM-12:00 PM	MP042-3	H. Zargarzadeh, M. Barzegaran, O. Mohammed Lamar University, <i>UNITED STATES OF AMERICA</i> Wireless Power Transfer for Electric Vehicle using an Adaptive Robot
10:30 AM-12:00 PM	MP042-4	J. Lee, J. Kim, Y. Kim, S. Jung SungKyunKwan University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Distance based Intelligent Particle Swarm Optimization for Optimal Design of Permanent Magnet Synchronous Machine

- 10:30 AM-12:00 PM MP042-5 B. Son, D. Kim, J. Kim, Y. Kim, S. Jung
Sungkyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Genetic Algorithm Adopting Building Block Identification
- 10:30 AM-12:00 PM MP042-6 Y. Hidaka, H. Igarashi
Advanced Technology R&D Center, Mitsubishi Electric Corporation, *JAPAN*
Topology Optimization of Rotating Machine Rotors Considering Localized Magnetic Degradation Caused in Manufacturing Process
- 10:30 AM-12:00 PM MP042-7 H. Hultmann Ayala, C. Klein, V. Mariani, L. Coelho
Pontifical Catholic University of Parana, *BRAZIL*
Multi-objective Symbiotic Search Algorithm Approaches for Electromagnetic Optimization
- 10:30 AM-12:00 PM MP042-8 M. Pham, C. Koh
Chungbuk National University, *VIETNAM*
Differential Evolution Using Adaptive Mutation Scaling Factor for Multi-Objective Electromagnetic Constrained Optimization Problems
- 10:30 AM-12:00 PM MP042-9 Y. Li, X. Huang
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
Design and Analysis of A Outer-Rotor Permanent-Magnet Flux-Modulated Motor for Electric Vehicles
- 10:30 AM-12:00 PM MP042-10 B. Xia, Z. Ren, C. Koh
Chungbuk National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Novel Reliability-Based Optimal Design of Electromagnetic Devices Based on Adaptive Dynamic Taylor Kriging

POSTER SESSION **MP051**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Devices & Applications
So Noguchi
(Symphony II & III)

- 1:30 PM- 3:00 PM MP051-1 Y. Oh, K. Joo, J. Lim, H. Lee, S. Jung, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Study on the Torque Control of IPMSM through Coupled- analysis Methods
- 1:30 PM- 3:00 PM MP051-2 N. Zhang, S. Wang, C. Zhang, S. Wang
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Mitosis Interference of K-Ras Driven Lung Cancer Cells by Magnetic Stimulation
- 1:30 PM- 3:00 PM MP051-3 D. Yuan, S. Wang, H. Li, H. Zhang
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Stress-based Variable Phase-shifting Reactor for the Multi- phase Rectifier System
- 1:30 PM- 3:00 PM MP051-4 W. Zhao, T. Lipo, B. Kwon
Shandong University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and Analysis of a Novel PM-Assisted Synchronous Reluctance Machine with Axially Integrated Magnets by Finite Element Method
- 1:30 PM- 3:00 PM MP051-5 V. Majchrzak, G. Parent, J. Brudny, V. Costan, P. Guuinic
University d'Artois, *FRANCE*
Coupling Transformer Operation of a Dynamic Voltage Restorer Under Electrical Grid Conditions
- 1:30 PM- 3:00 PM MP051-6 K. Joo, S. Cho, S. Jung, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Robust Speed Sensorless Control to Estimated Error for PMA-SynRM
- 1:30 PM- 3:00 PM MP051-7 F. Gonzalez Montanez, S. Maximov, J. Guzman, R. Escarela Perez, J. Olivares Galvan
UNAM, *MEXICO*
Modeling of Magnetic Levitation Systems Using Finite Elements and an Analytical Solution

1:30 PM- 3:00 PM	MP051-8	X. Yang, B. Zhu, C. Li Hebei University of Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Design and Realization of a Current Sensor for Impulse Current Waveform Measurement
1:30 PM- 3:00 PM	MP051-9	H. Kim, Y. Lee, J. Ryu, G. Park Pusan National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Effects of the Induced Magnetic Field on the Defect Signals in RFECT System for Pipeline Inspection
1:30 PM- 3:00 PM	MP051-10	J. Jeong, C. Ha, J. Lim, C. Kim, J. Choi KIMM, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Analysis and Control of Electromagnetic Coupling Effect of Levitation and Guidance Systems for Semi-High-Speed Maglev Train Considering Current Direction
POSTER SESSION MP052 Monday, November 14, 2016 1:30 PM- 3:30 PM		Static & Quasi Static Fields Lionel Pichon (Symphony II & III)
1:30 PM- 3:00 PM	MP052-1	J. Silva, M. Afonso, J. Faria, G. Pellegrino Departamento de Fisica e Matema;tica - CEFET/MG, <i>BRAZIL</i> Effect of local support configuration on the precision of numerical solutions of Poisson equation obtained with differential quadrature method
1:30 PM- 3:00 PM	MP052-2	A. Formisano, R. Martone Dept. of Industrial and Inform. Engin. Seconda University di Napoli, <i>ITALY</i> A Fast, Semi-Analytical Method for Field Computation in Presence of Magnetic and Conductive Materials
1:30 PM- 3:00 PM	MP052-3	Y. Takahashi, J. Kitao, K. Fujiwara, A. Ahagon, T. Matsuo, T. Iwashita, H. Nakashima Doshisha Univ., Mitsubishi Electric Corp. / Japan, <i>JAPAN</i> Steady-State Analysis of Hysteretic Magnetic Field Problems Using Parallel TP-EEC Method
1:30 PM- 3:00 PM	MP052-4	K. Sugahara Kindai University, <i>JAPAN</i> Improvised Asymptotic Boundary Conditions for Quasi-Static Magnetic-Field Problems in Ellipsoidal Domains
1:30 PM- 3:00 PM	MP052-5	L. Huang, G. Meunier, O. Chadebec, J. Guichon, Y. Li, Z. He CNRS, G2Elab, University de Grenoble, <i>FRANCE</i> General Integral Formulation of Magnetic Flux Computation and its Application in Inductive Power Transfer System
1:30 PM- 3:00 PM	MP052-6	G. Parent, S. Duschesne, P. Dular University d'Artois, <i>FRANCE</i> Determination of Flux Tube Portions by Adjunction of Electric or Magnetic Multivalued Equipotential Lines
1:30 PM- 3:00 PM	MP052-7	J. Padilha, P. Kuo-Peng, N. Sadowski, N. Batistela Universidade Federal de Santa Catarina, <i>BRAZIL</i> Vector Hysteresis Model Associated to FEM in a Hysteresis Motor Modeling
1:30 PM- 3:00 PM	MP052-8	D. Di Pietro, B. Kapidani, R. Specogna, F. Trevisan University of Udine, <i>ITALY</i> An arbitrary-order discontinuous skeletal method for solving electrostatics on general polyhedral meshes
1:30 PM- 3:00 PM	MP052-9	D. Wu, X. Yan, R. Tang, D. Xie, Z. Ren Shenyang University of Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> GPU Acceleration of 3D Eddy Current Losses Calculation in Large Power Transformer
1:30 PM- 3:00 PM	MP052-10	P. Bettini, R. Benato, S. Dambone Sessa, R. Specogna University di Padova - DII (Department of Industrial Engineering), <i>ITALY</i> T-Omega formulation for eddy current problems with periodic boundary conditions

POSTER SESSION **MP061**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Numerical Techniques
Markus Clemens
(Symphony II & III)

- 1:30 PM- 3:00 PM MP061-1 K. Fujisaki
Toyota Technological Institute, *JAPAN*
Magnetic Multi-Scale Problem of Equivalent Electromagnetic Material Constants for Local Eddy Current Flow
- 1:30 PM- 3:00 PM MP061-2 X. Gu, Y. Zhao, W. Fu
Ansys Inc, *HONG KONG S.A.R. (CHINA)*
A Novel Iterative Linear Solver for 3-D Magnetostatic Problems Using Edge Elements
- 1:30 PM- 3:00 PM MP061-3 M. Jüttner, J. Falk, W. Rucker
University of Stuttgart, Institute for Theory of Electrical Engineering, *GERMANY*
A Neural Network based Recommendation System for Solvers and Preconditioners for Systems of Linear Equations
- 1:30 PM- 3:00 PM MP061-4 Y. Sato, T. Shimotani, H. Igarashi
Hokkaido University, *JAPAN*
Synthesis of Cauer-Equivalent Circuit Based on Model Order Reduction Considering Nonlinear Magnetic Property
- 1:30 PM- 3:00 PM MP061-5 M. Al Eit, P. Dular, F. Bouillault, C. Marchand, G. Krebs
GeePs laboratory, *FRANCE*
2D Finite Element Model Reduction for Copper Losses Calculation in Switched Reluctance Machines
- 1:30 PM- 3:00 PM MP061-6 M. Eller, S. Reitzinger, S. Schöps, S. Zaglmayr
CST AG, *GERMANY*
A Reduced Basis Approach for Broadband Maxwell Simulations
- 1:30 PM- 3:00 PM MP061-7 L. Perkkiö
Aalto University, School of Electrical Engineering, *FINLAND*
Iron Loss Measurement as Inverse Heat Source Problem
- 1:30 PM- 3:00 PM MP061-8 R. Sabariego, J. Gyselinck
KU Leuven, *BELGIUM*
Eddy-current-effect Homogenization of Windings in Harmonic Balance Finite Element Models
- 1:30 PM- 3:00 PM MP061-9 F. De Souza, L. Ferreira, E. Da Silva, R. Mesquita
Federal University of Minas Gerais - UFMG, *BRAZIL*
An h-Adaptive Natural Element Method To Solve Static Electromagnetic Problems
- 1:30 PM- 3:00 PM MP061-10 V. Ghorbanian, D. Lowther
Electrical and Computer Engineering Department, McGill University, *CANADA*
A Computational-analytical Approach to Efficiently Locate Optimum Objective Spaces of Permanent Magnet Motors in Transient, Rated and Flux Weakening Operations

POSTER SESSION **MP062**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Optimization & Design
Noboru Niguchi
(Symphony II & III)

- 1:30 PM- 3:00 PM MP062-1 H. Liu, G. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Bubbles and Blisters Impact on Die-Casting Cage to the Designs and Operations of Line-Start Synchronous Reluctance Motors
- 1:30 PM- 3:00 PM MP062-2 Y. Li, S. Xiao, M. Rotaru, J. Sykulski
University of Southampton, *UNITED KINGDOM*
A kriging based optimization approach for large datasets

1:30 PM- 3:00 PM	MP062-3	D. Xu, H. Lu, J. Kwon, S. Hwang School of Mechanical Engineering, Pusan National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Analysis of Electro-Magnetic Circuit Variables' Effects on Total Harmonic Distortion in a Balanced Armature Driver
1:30 PM- 3:00 PM	MP062-4	S. Furui, H. Sasaki, H. Igarashi, H. Sakamoto, T. Abe, K. Ogura Graduate School of Information Science and Technology, Hokkaido University, <i>JAPAN</i> Regularized Topology Optimization of IPM Motors and Post-Processing for Interpretation of Optimal Solutions
1:30 PM- 3:00 PM	MP062-5	K. Guo, S. Fang, H. Lin, K. Wang, H. Yang Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> 3D Magnetic Field Analytical Calculation of Flux Reversal Linear-Rotary Permanent Magnet Actuator
1:30 PM- 3:00 PM	MP062-6	P. Alotto, L. Dos Santos Coelho, V. Cocco Mariani, T. Cardoso Bora University di Padova, Dip. Ing. Industriale, <i>ITALY</i> Multiobjective Cross Entropy for Electromagnetic Optimization
1:30 PM- 3:00 PM	MP062-7	W. Han, J. Kim, Y. Kim, S. Jung Sungkyunkwan University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Multi-Simplex Algorithm Applied to FEM based Optimal Design of Electric Machine
1:30 PM- 3:00 PM	MP062-8	J. Yuan, L. Liu, X. Luo, C. Tian, Z. Du, W. Guan, Y. Gao, K. Muramatsu, B. Chen Wuhan University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Optimal Gear Capacity Design of 380V/30kVar Superconducting Controllable Reactor Based on ANSYS- Immune Algorithm
1:30 PM- 3:00 PM	MP062-9	H. Liu, K. Joo, H. Lee, J. Lee Hanyang University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Design of Equivalent Magnetic Circuit and Parameter Analysis for Improving Performance of Fuel Injections
1:30 PM- 3:00 PM	MP062-10	A. Hariri, A. Elsayed, O. Mohammed Florida International University, <i>UNITED STATES OF AMERICA</i> An Integrated Characterization Model for the Magnetic Design of an EV Chargers Circular Wireless Power Transfer Pads

POSTER SESSION **MP071**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Devices & Applications
Mohammad Reza Barzegaran
(Symphony II & III)

1:30 PM- 3:00 PM	MP071-1	X. Zhu, W. Hua, M. Cheng School of Electrical Engineering, Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> An Improved Configuration for Cogging Torque Reduction in Flux-Reversal Permanent Magnet Machines
1:30 PM- 3:00 PM	MP071-2	E. Cardelli, A. Faba, S. Gaiotto, A. Laudani, F. Riganti Fulginei, A. Salvini, F. Tissi University of Perugia, <i>ITALY</i> Modeling of Inductive Blocking Devices for the Mitigation of Indirect Lightning Effects
1:30 PM- 3:00 PM	MP071-3	J. Zou, W. Xu, C. Ye Huazhong University of Science and Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Model Predictive Control for Linear Induction Machines With Less Computational Burden
1:30 PM- 3:00 PM	MP071-4	H. Yang, Z. Zhu, H. Lin, K. Guo, Y. Huang, S. Fang Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> On-Load Magnetization Characteristic Analysis of a Novel Partitioned Stator Hybrid Magnet Memory Machine
1:30 PM- 3:00 PM	MP071-5	H. Boughedda, T. Hacib, Y. Le Bihan, H. Acikgoz GeePs, <i>ALGERIA</i> Cracks Characterization of Non-Ferromagnetic Material Using EMAT Transducer and TLBO Algorithm

- 1:30 PM- 3:00 PM MP071-6 A. Limone, A. Shoory, S. Skibin, T. Franz, J. Smajic, J. Tepper
University of Applied Sciences Rapperswil HSR, *SWITZERLAND*
Computational and experimental investigation of distribution transformers under Differential and Common Mode transient conditions
- 1:30 PM- 3:00 PM MP071-7 F. Xing, W. Zhao, B. Kwon
HANYANG UNIVERSITY, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design of a Novel Rotor Structure for PM-Assisted Synchronous Reluctance Machines to Improve Torque Characteristics
- 1:30 PM- 3:00 PM MP071-8 K. Shin, J. Choi, H. Cho
Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Influence of Rotor Structure on End Effects of High-Speed Permanent Magnet Synchronous Generator Using 3-D Finite Element Analysis
- 1:30 PM- 3:00 PM MP071-9 B. Chen, L. Wei, Y. Lei, Y. Zhong, C. Tian, W. Guan, Y. Gao, K. Muramatsu, J. Yuan
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
Investigation on a Modified Hybrid Compact Saturated-core Fault Current Limiter Based on Permanent Magnets
- 1:30 PM- 3:00 PM MP071-10 W. Zhao, T. Lipo, B. Kwon
Shandong University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Design of a Spoke-type Permanent Magnet Motor with Phase-group Concentrated-coil Windings to Minimize Torque Pulsations

POSTER SESSION **MP072**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Coupled Problems
Renato Cardoso Mesquita
(Symphony II & III)

- 1:30 PM- 3:00 PM MP072-1 H. Zeng, Z. Liu, T. Hei, B. Zhou
Shandong University, School of Electrical Engineering, *CHINA, PEOPLE'S REPUBLIC OF*
Optimization of Magnetic Core Structure for Wireless Charging Coupler
- 1:30 PM- 3:00 PM MP072-2 J. Pacheco, M. Wu, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
2D Simulation of Magnetic Field Generation by Pulsating AC Voltage in Cold Plasma Chamber
- 1:30 PM- 3:00 PM MP072-3 H. Yeo, H. Park, J. Seo, J. Ro, H. Jung
Seoul National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Coupled Electromagnetic-Thermal Analysis of a Surface- Mounted Permanent-Magnet Motor with Overhang Structure
- 1:30 PM- 3:00 PM MP072-4 D. Yun, H. Park
Korea Institute of Machinery & Materials (KIMM), *KOREA, REPUBLIC OF (SOUTH KOREA)*
Analysis on Small Particles Heating Using Electromagnetic Excitation
- 1:30 PM- 3:00 PM MP072-5 J. Da Silva, J. Bastos
Univ. Fed. Santa Catarina, *BRAZIL*
On-line Evaluation of Power Transformer Temperatures Using Magnetic and Thermodynamics Numerical Modeling
- 1:30 PM- 3:00 PM MP072-6 D. Nair, A. Arkkio
Aalto University, *FINLAND*
Inverse Thermal Modelling to Determine Power Losses in Induction Motor
- 1:30 PM- 3:00 PM MP072-7 V. Jimenez, R. Escarela, E. Melgoza, M. Arjona, J. Olivares
Universidad Autanoma Metropolitana -- Azcapotzalco, *MEXICO*
Quasi-3D Finite Element Modeling of a Power Transformer
- 1:30 PM- 3:00 PM MP072-8 X. Zhang, Z. Yuan, Q. Yang, S. Jiang
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Cooperative Operating Mode Featuring Tight-Strong Coupling for Wireless Power Transmission

1:30 PM- 3:00 PM MP072-9 L. Zhu, Y. Yang, Q. Yang
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Electromagnetic Vibration of Saturable Reactor Considering Magnetostriction and Damping Effect

POSTER SESSION **MP081**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Optimization & Design
Yves Marechal
(Symphony II & III)

- 1:30 PM- 3:00 PM MP081-1 T. Ishikawa, S. Mizuno, N. Kurita
Gunma University, *JAPAN*
Topology Optimization Method for Unsymmetrical Rotor Using Cluster and Cleaning Procedure
- 1:30 PM- 3:00 PM MP081-2 S. Alfonzetti, N. Salerno
DIEEI - University of Catania, *ITALY*
Microwave imaging by means of Contrast Source Inversion Method and FEM-DBCI Method
- 1:30 PM- 3:00 PM MP081-3 P. Karban, D. Panek, F. Mach, I. Dolezel
Department of Theory of Electrical Engineering, *CZECH REPUBLIC*
Utilization of Advanced Optimization and Penalization Techniques for Calibration of Numerical Models
- 1:30 PM- 3:00 PM MP081-4 T. Nguyen, H. Mac, S. Clenet, E. Guillot
Laboratoire dâ Electrotechnique et dâ Electronique de Puissance, *FRANCE*
Global sensitivity analysis applied to an hydrogenerator
- 1:30 PM- 3:00 PM MP081-5 S. An, S. Yang, Z. Ren
China Jiliang University, *CHINA, PEOPLE'S REPUBLIC OF*
Incorporating Light Beam Search in a Vector Normal Boundary Intersection Method for Multiobjective Inverse Problem
- 1:30 PM- 3:00 PM MP081-6 X. Yang, C. Li, B. Zhu
Hebei University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Design and Development of a Current Sensor with Temperature Stability and High Resolution
- 1:30 PM- 3:00 PM MP081-7 O. Puigdelivol, Y. Le Menach, S. Harmand, D. Mèresse, J. Wecxsteen
L2EP, *FRANCE*
Multiphysics Topology Optimization for Laminated Busbars
- 1:30 PM- 3:00 PM MP081-8 M. Seo, T. Lee, J. Kim, Y. Kim, S. Jung
SungKyunKwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Principal Component Optimization with Mesh Adaptive Direct Search for Optimal Design of Permanent Magnet Synchronous Machine
- 1:30 PM- 3:00 PM MP081-9 H. Jung, G. Park, D. Kim, S. Jung
SungKyunKwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Design and Validation of IPMSM for Maximum Efficiency Distribution compatible to Energy Consumption Areas of HD-EV
- 1:30 PM- 3:00 PM MP081-10 Z. Hosseinidoust, D. Giannacopoulos, W. Gross
McGill University, *CANADA*
GPU Optimization and Implementation of Gaussian Belief Propagation Algorithm

POSTER SESSION **MP082**
Monday, November 14, 2016
1:30 PM- 3:30 PM

Devices & Applications
Bai Baodong
(Symphony II & III)

- 1:30 PM- 3:00 PM MP082-1 Y. Gao, K. Muramatsu, N. Takeda, H. Dozono, W. Guan, J. Yuan, C. Tian, B. Chen, K. Konishi, K.
Kanazawa
Saga University, *JAPAN*
Simple L and T Shaped Butt Joints Composed of Anisotropic and Isotropic Block Cores in Three-Phase Reactor

1:30 PM- 3:00 PM	MP082-2	H. Park, H. Jung, D. Woo Seoul National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Field Reconstruction Method in Axial Flux Permanent Magnet Motor with Overhang Structure
1:30 PM- 3:00 PM	MP082-3	K. Lu, Y. Xia Aalborg University, <i>DENMARK</i> 3D Magnetic-Resonance-Coupling (MRC) Localization of Wireless Capsule Endoscopy
1:30 PM- 3:00 PM	MP082-4	Y. Le Bihan, F. Loete, J. Ferreira, D. Mencaraglia GeePs, <i>FRANCE</i> Model-Based Eddy Current Determination of the Electrical Conductivity of Semiconductors
1:30 PM- 3:00 PM	MP082-5	E. Ghosh, F. Ahmed, A. Mollaeian, N. Kar University of Windsor, <i>CANADA</i> Online Parameter Estimation and Loss Calculation using Duplex Neural - Lumped Parameter Thermal Network for Faulty Induction Motor
1:30 PM- 3:00 PM	MP082-6	X. Liu, X. Zhang, S. Huang Hunan University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Transient Analysis of a Coaxial Magnetic Gear Based on Analytical Model
1:30 PM- 3:00 PM	MP082-7	Q. Wang, S. Niu The Hong Kong Polytechnic University, <i>HONG KONG S.A.R. (CHINA)</i> Design Optimization and Comparative Study of Novel Magnetic- Geared Permanent Magnet Machines
1:30 PM- 3:00 PM	MP082-8	S. Seo, J. Choi, M. Koo, J. Kim Chungnam National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Comparison of Characteristic of a Double-sided Permanent Magnet Linear Synchronous Generator According to Magnetization Pattern
1:30 PM- 3:00 PM	MP082-9	D. Wang, H. Jung, S. Jung Shandong University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Design Characteristics and Analysis of High Power Density Tubular Linear Switch Reluctance Generator for Direct Drive WEC
1:30 PM- 3:00 PM	MP082-10	L. Huang, M. Hu, J. Yang, M. Chen Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Research on a direct-drive wave energy converter using Outer-PM linear tubular generator
1:30 PM- 3:00 PM	MP082-11	B. W. Kim, G. H. Kang, S. K. Lee, H. J. An KOMERI, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Rotor Design Optimization for Performance Improvement of IPM Motor

ORAL SESSION MO05
Monday, November 14, 2016
3:30 PM- 5:00 PM

Static & Quasi Static Fields
Erich Schmidt
(Concerto A)

3:15 PM- 3:35 PM	MO05-1	A. Desmoort, Z. De Grève, P. Dular, C. Geuzaine, O. Deblecker University of Mons, <i>BELGIUM</i> Surface Impedance Boundary Condition with Circuit Coupling for the 3D Finite Element Modeling of Wireless Power Transfer
3:35 PM- 3:55 PM	MO05-2	A. Khebir, P. Dlotko, B. Kapidani, A. Kouki, R. Specogna University of Udine, <i>ITALY</i> T-Ω formulation with higher order hierarchical basis functions for non simply connected conductors

- 3:55 PM- 4:15 PM MO05-3 J. Duti n , M. Clemens, S. Sch ops
University of Wuppertal, Chair of Electromagnetic Theory, *GERMANY*
Multiple Right-Hand Side Techniques in Semi-Explicit Time Integration Methods for Transient Eddy Current Problems
- 4:15 PM- 4:35 PM MO05-4 Y. Li, S. Yan, X. Xu, P. Lyu, Z. Ren
Institute of Microelectronics of Chinese Academy of Sciences, *CHINA, PEOPLE'S REPUBLIC OF*
3D IC Interconnect Parasitic Capacitance Extraction with a Reformulated PGD Algorithm
- 4:35 PM- 4:55 PM MO05-5 A. Nunes, O. Univ. Grenoble Alpes, P. Kuo-Peng, P. Dular, G. Meunier
CNRS - University Grenoble Alpes, *BRAZIL*
3D Magnetic Devices Analysis using Facet FEM Formulation Coupled with Reluctance Network Method

ORAL SESSION MO06

Monday, November 14, 2016

3:30 PM- 5:00 PM

Coupled Problems

Sami Barmada

(Concerto B)

- 3:15 PM- 3:35 PM MO06-1 S. Matsuzawa, K. Hirata, F. Miyasaka
Osaka University, *JAPAN*
3D Analysis of Magnetohydrodynamic Flow Employing Meshless Method Based on Weighted Least Square Method
- 3:35 PM- 3:55 PM MO06-2 Y. Paquay, O. Br uls, C. Geuzaine
University de Liage, *BELGIUM*
Nonlinear Reduced Order Model of a 3-Phase Transformer For Electric Network Simulator Coupling
- 3:55 PM- 4:15 PM MO06-3 I. Zaman, M. Barzegaran, O. Mohammed
Lamar University, *UNITED STATES OF AMERICA*
Condition Monitoring of electric components using 3-D printed multiple magnetic coil antennas
- 4:15 PM- 4:35 PM MO06-4 U. Aydin, P. Rasilo, F. Martin, D. Singh, L. Daniel, A. Belahcen, R. Kouhia, A. Arkkio
Aalto University, *FINLAND*
Modelling the Effect of Multiaxial Stress on Magnetic Hysteresis of Electrical Steel Sheets: A Comparison
- 4:35 PM- 4:55 PM MO06-5 M. Liu, Z. Tang, X. Mininger, F. Bouillault, O. Hubert, L. Bernard
Group of electrical engineering, Paris (GeePs), *FRANCE*
Modeling of Magnetostriction Induced Deformation Using Computer Code Chaining and Equivalent Stress Projection

ORAL SESSION MO07

Monday, November 14, 2016

3:30 PM- 5:00 PM

NanoMagnetics & Bioelectric Fields

Shiyou Yang

(Symphony I)

- 3:15 PM- 3:55 PM
Florida International University, *UNITED STATES OF AMERICA*
Technobiology Paradigm Shift in Nanomedicine
- 3:55 PM- 4:15 PM MO07-1 U. R mer, C. Schmidt, U. Van Rienen, S. Sch ops
Technische Universitaet Darmstadt, *GERMANY*
Low-Dimensional Stochastic Modeling of the Electrical Properties of Biological Tissues
- 4:15 PM- 4:35 PM MO07-2 C. Cimala, M. Clemens, J. Streckert, B. Schmuelling
University of Wuppertal, *GERMANY*
Simulation of Inductive Power Transfer Systems Exposing a Human Body with a Coupled Scaled-Frequency Approach
- 4:35 PM- 4:55 PM MO07-3 S. Rahmatinia, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Magneto-Thermal Modeling of Biological Tissues: A Step towards Breast Cancer Detection

ORAL SESSION MO08
Monday, November 14, 2016
3:30 PM- 5:00 PM

Devices & Applications
Dan Ionel
(Concerto C)

- 3:15 PM- 3:35 PM MO08-1 K. Zhang, Y. Fang, X. Huang, Q. Lu
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
Design of a Dual-Stator Superconducting Permanent Magnet Wind Power Generator with Different Rotor Configuration
- 3:35 PM- 3:55 PM MO08-2 H. Zhao, D. Zhang, Y. Wang, Y. Zhan, G. Xu
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
Separation of Slip- and High- Frequency Electromagnetic Quantity and its Application in Rotor Loss Fine Analysis of Induction Motor
- 3:55 PM- 4:15 PM MO08-3 A. Berzoy, A. Mohamed, O. Mohammed
Florida International University, *UNITED STATES OF AMERICA*
Impact of Inter-Turn Short-Circuit Location on Induction Machines Parameters through FE Computations
- 4:15 PM- 4:35 PM MO08-4 H. Zhang, X. Zhang, C. Gerada, M. Galea, D. Gerada, J. Li
Beijing Jiaotong University, *UNITED KINGDOM*
Armature Design of an Ultra-high Speed PM Generator
- 4:35 PM- 4:55 PM MO08-5 Y. Hidaka, H. Igarashi
Advanced Technology R&D Center, Mitsubishi Electric Corporation, *JAPAN*
Three-Dimensional Shape Optimization of Claw-Pole Motors

ORAL SESSION TO09
Tuesday, November 15, 2016
8:30 AM- 10:00 AM

Wave Propagation I
Ermanno Cardelli
(Symphony I)

- 8:30 AM- 8:50 AM TO09-1 L. Liu, W. Fu
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
Postprocessing of the Linear Sampling Method in Inverse Electromagnetic Scattering Problem for Obstacles
- 8:50 AM- 9:10 AM TO09-2 T. Ohtani, Y. Kanai, N. Kantartzis
Niigata Institute of Technology, *JAPAN*
Wide-Angle Elimination of TF/SF- Generated Spurious Waves in the Nonstandard-FDTD Technique
- 9:10 AM- 9:30 AM TO09-3 W. Renhart, T. Bauernfeind, K. Preis, C. Magele, C. Tuerk
Graz University of Technology/IGTE, *AUSTRIA*
Sparse Grid of Metal Strips Description Implemented into Finite Element Formulation
- 9:30 AM- 9:50 AM TO09-4 B. Horvath, Z. Badics, J. Pavo, P. Horvath
Tensor Research, LLC, *UNITED STATES OF AMERICA*
Validation of Numerical Models of Portable Wireless Devices for Near- Field Simulation
- 9:50 AM- 10:10 AM TO09-5 Y. Sakata, T. Mifune, T. Matsuo
Kyoto University, *JAPAN*
Optimal Subgrid Connection for Space- Time Finite Integration Technique

ORAL SESSION TO10
Tuesday, November 15, 2016
8:30 AM- 10:00 AM

Optimization & Design II
Raffaele Martone
(Concerto A)

- 8:30 AM- 8:50 AM TO10-1 Y. Okamoto, S. Wakao
Hosei University, *JAPAN*
Level-set-function-based Topology Optimization Supported by the Method of Moving Asymptotes in a Magnetic Field Problem

8:50 AM- 9:10 AM	TO10-2	F. Rahmani, M. Barzegaran Lamar University, <i>UNITED STATES OF AMERICA</i> Dynamic Wireless Power Charging of Electric Vehicles Using Optimal Placement of Transmitters
9:10 AM- 9:30 AM	TO10-3	S. Lee, C. Lee, I. Jang Korea Advanced Institute of Science and Technology, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Precise Determination of the Optimal Coil for Wireless Power Transfer Systems through Postprocessing in the Smooth Boundary Representation
9:30 AM- 9:50 AM	TO10-4	Y. Li, S. Yang Zhejiang University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> A Methodology for Topology Optimization Using Genetic Algorithm and its Application to Piezoelectric Energy Harvester Designs
9:50 AM- 10:10 AM	TO10-5	C. Krasopoulos, I. Armouti, A. Kladas ICCS - National Technical University of Athens, <i>GREECE</i> Hybrid Multi-Objective Optimization Algorithm for PM Motor Design

ORAL SESSION **TO11**

Tuesday, November 15, 2016

8:30 AM- 10:00 AM

Devices & Applications II

Feliziani Mauro

(Concerto B)

8:30 AM- 8:50 AM	TO11-1	A. Mollaeian, E. Ghosh, N. Kar University of Windsor, <i>CANADA</i> 3-D Sub-domain Analytical Model to Calculate Magnetic Flux Density in Induction Machines with Semi-closed Slots under No-Load Condition
8:50 AM- 9:10 AM	TO11-2	P. Di Barba, F. Dughiero, M. Forzan, E. Sieni University of Padova - Department of Industrial Engineering, <i>ITALY</i> Handling sensitivity in multiobjective design optimization of MFH inductors
9:10 AM- 9:30 AM	TO11-3	K. Shin, H. Park, H. Cho, J. Choi Department of Electrical Engineering, Chungnam National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Analytical Prediction for Electromagnetic Performance of Interior Permanent Magnet Synchronous Machines Based on Subdomain Model
9:30 AM- 9:50 AM	TO11-4	X. Liu, M. Serhir, A. Kameni, M. Lambert, L. Pichon GeePs Group of electrical engineering - Paris, UMR CNRS 8507, CentraleSupalec, Univ. Paris- Sud, University Paris-Saclay, Sorbonne Universit�s, UPMC Univ Paris 06, <i>FRANCE</i> Discontinuous Galerkin Time-Domain method for 3D modeling of ground penetrating radar scenarios
9:50 AM- 10:10 AM	TO11-5	M. Benhamida, H. Ennassiri, M. Dhifli, G. Barakat, Y. Amara GREAH / Le Havre university, <i>FRANCE</i> Slots & Poles combination influence on the vibro-acoustic behavior of axial type flux switching permanent magnet machines

ORAL SESSION **TO12**

Tuesday, November 15, 2016

8:30 AM- 10:00 AM

Static & Quasi Static Fields II

Anouar Belahcen

(Concerto C)

8:30 AM- 8:50 AM	TO12-1	G. Aiello, S. Alfonzetti, S. Rizzo, N. Salerno DIEEI - University of Catania, <i>ITALY</i> Solution of Open-Boundary Problems by means of the hybrid FEM-GDBCI Method
8:50 AM- 9:10 AM	TO12-2	F. Freschi, L. Giaccone, M. Repetto Politecnico di Torino, <i>ITALY</i> Nonlinear BEM-surface impedance boundary condition formulation for unstructured meshes

- 9:10 AM- 9:30 AM TO12-3 L. Codecasa, L. Di Rienzo
POLITECNICO DI MILANO - DEIB, *ITALY*
MOR-based Approach to Uncertainty Quantification in Electrokinetics with Correlated Random Material Parameters
- 9:30 AM- 9:50 AM TO12-4 C. Kruegtgen, S. Steentjes, G. Glehn, K. Hameyer
RWTH Aachen University, Institute of Electrical Machines, Aachen, Germany, *GERMANY*
Parametric Homogenized Model for Inclusion of Eddy Currents and Hysteresis in 2-D Finite Element Simulation of Electrical Machines
- 9:50 AM- 10:10 AM TO12-5 K. Li, J. Bird
UNC Charlotte/ Portland State, *UNITED STATES OF AMERICA*
Torque Density Comparison of Axial and Radial Halbach Couplings

POSTER SESSION **TP011**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Coupled Problems
Bai Baodong
(Symphony II & III)

- 10:30 AM-12:00 PM TP011-1 X. Xu, S. Yan, P. Lyu, Z. Gao, Z. Ren
Institute of Microelectronics of Chinese Academy of Sciences, *CHINA, PEOPLE'S REPUBLIC OF*
Transient Electro-Thermal Coupling Analysis in Through-Silicon-Via Using Proper Orthogonal Decomposition
- 10:30 AM-12:00 PM TP011-2 R. Gong, J. Ruan, C. Liao, C. Liu, S. Jin
Electrical engineering school of Wuhan university, *CHINA, PEOPLE'S REPUBLIC OF*
3-D coupled electromagnetic-fluid-thermal analysis of 220kV three-phase three-limb transformer under DC bias
- 10:30 AM-12:00 PM TP011-3 B. Guo, Y. Huang, Y. Guo, J. Zhu
School of Electrical Engineering, Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Analytical Modeling of Manufacturing Imperfections in Double Rotor Axial Flux PM Machines: Effects on Back EMF
- 10:30 AM-12:00 PM TP011-4 H. Liu, G. Jeong, S. Ham, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Rotor Structure Design of Claw-pole alternator for Performance Improving Using Static 3D FEM Coupled- Circuit Model
- 10:30 AM-12:00 PM TP011-5 T. Wellawatta, J. Park, S. Choi, J. Hur
School of Electrical Engineering, University of Ulsan, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Reduction Method Based on Looped Slot Wedges for End to End Shaft Voltage in Inverter Driven IPM Motor
- 10:30 AM-12:00 PM TP011-6 E. Bostanci, L. Gu, E. Cosoroaba, M. Moallem, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Performance Improvement and Comparison of Concentrated Winding Segmental Rotor and Double Stator Switched Reluctance Machines
- 10:30 AM-12:00 PM TP011-7 K. Mitsufuji, S. Matsuzawa, K. Hirata, F. Miyasaka
Osaka-University, *JAPAN*
A Ferrofluid Motion Analysis with Particle Method and Magnetic Moment Method
- 10:30 AM-12:00 PM TP011-8 G. Kim, H. Choi
Department of Electrical Engineering, Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Torque Computation of Nonmagnetic Rotor Submerged in Ferrofluid by Multi-physics Approach
- 10:30 AM-12:00 PM TP011-9 C. Ifrim
FMC Technologies Inc., *UNITED STATES OF AMERICA*
Multiphysics Model of Electromagnetically Induced Chemical Reactions in a Mono-Ethylene Glycol Filled Gap of a Permanent Magnet Motors

10:30 AM-12:00 PM TP011-10 B. Guo, Y. Huang, Y. Guo, J. Zhu
School of Electrical Engineering, Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Electromagnetic-Thermal Modeling of an Axial Flux PM machine by using Maxwells Equations and Lumped Models

POSTER SESSION **TP012**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Devices & Applications
Christian Magele
(Symphony II & III)

- 10:30 AM-12:00 PM TP012-1 J. Du, P. Lu
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Optimal Force Ripple Design of Mutually Coupled Linear Switched Reluctance Machines with Transverse Flux by Taguchi Method
- 10:30 AM-12:00 PM TP012-2 H. Zhang, W. Hua
School of Electrical Engineering, Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Analysis and Optimization of Back-EMF Waveform of a Novel Outer-Rotor-Permanent-Magnet Flux-Switching Machine
- 10:30 AM-12:00 PM TP012-3 T. Jeong, D. Kang, G. Jeong, K. Joo, J. Lee
Keimyung University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Rotor Design of an 150kW-Class IPMSM Through the 3D Voltage-Inductance Map Analysis Method
- 10:30 AM-12:00 PM TP012-4 H. Hong, H. Liu, G. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design of High-end SynRM Based on 3D Printing Technology
- 10:30 AM-12:00 PM TP012-5 D. Park, K. Kim
Hanbat National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Characteristic Analysis due to Temperature Rise of the Interior Permanent Magnet Synchronous Motor
- 10:30 AM-12:00 PM TP012-6 J. Cha, R. Son, G. Yoo, M. Jeon
Hyundai Heavy Industries co., ltd, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Equivalent core length consideration of synchronous motor with radial air-ducts by using 3D electromagnetic finite element method
- 10:30 AM-12:00 PM TP012-7 J. Kim, J. Choi, J. Jeong, K. Lee, S. Lee
Chungnam Nat'l Univ., *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and Analysis of a Linear Oscillatory Single-phase Permanent Magnet Generator for Free-piston Stirling Engine Systems
- 10:30 AM-12:00 PM TP012-8 N. Rahman, L. Gu, E. Bostanci, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Temperature Estimation of Switched Reluctance Machines Using Thermal Impulse Response Technique
- 10:30 AM-12:00 PM TP012-9 G. Jeong, H. Liu, C. Park, T. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Study on an IPMSM Designed to Secure Rotor Reliability in View of Demagnetization
- 10:30 AM-12:00 PM TP012-10 B. Chen, L. Wei, C. Tian, Y. Gao, K. Muramatsu, J. Yuan
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
Optimization Study of a Novel Small-section Permanent- magnet-biased Fault Current Limiter with Leakage Flux Effect

POSTER SESSION **TP021**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Devices & Applications
Joao Pedro Bastos
(Symphony II & III)

- 10:30 AM-12:00 PM TP021-1 T. Zou, R. Qu, D. Li, D. Jiang
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Flux Barrier Effect of Spoke-Array Magnets in Flux- Modulation Machines
- 10:30 AM-12:00 PM TP021-2 E. Cosoroaba, B. Fahimi
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Magneto-hydrodynamics in Thermal to Electric Energy Conversion
- 10:30 AM-12:00 PM TP021-3 A. Desmoort, Z. De Grève, J. Siau, G. Meunier, J. Guichon, O. Chadebec, O. Deblecker
University of Mons, *BELGIUM*
Comparing Partial Element Equivalent Circuit and Finite Element Methods for the Resonant Wireless Power Transfer 3D Modeling
- 10:30 AM-12:00 PM TP021-4 Y. Gao, R. Qu, D. Li, J. Li
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Design and Comparison of Novel Flux Reversal Machines with Large Stator Slot Opening
- 10:30 AM-12:00 PM TP021-5 H. Lin, F. Zhao, T. Lipo, B. Kwon
Hanyang University, *CHINA, PEOPLE'S REPUBLIC OF*
A Study on Fault-Tolerant Operation of a Two-Phase Permanent Magnet Synchronous Motor Based on Structural Alteration
- 10:30 AM-12:00 PM TP021-6 S. Bauer, W. Renhart, O. Bíró
IGTE, TU GRAZ, *AUSTRIA*
FEM- based Computation of Circuit Parameters for Testing Fast Transients for EMC Problems
- 10:30 AM-12:00 PM TP021-7 D. Fu, Y. Xu
Shandong university, *CHINA, PEOPLE'S REPUBLIC OF*
Presentation of E-Core Transverse-Flux Permanent Magnet Linear Motor and Its No-Load Magnetic Field Analysis Based on Schwarz Christoffel Transformation
- 10:30 AM-12:00 PM TP021-8 J. Yun, S. Lee
Hyundai Heavy Industries Co., LTD., *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Simplified Approach for Predicting the Starting Performance of Induction Machines based on Rotor Design Modification
- 10:30 AM-12:00 PM TP021-9 X. Liu, Z. Gu, J. Zhao
Beijing Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
A Novel Cogging torque reduction method for the Modular Arc-Linear Flux Switching Permanent-Magnet Motor
- 10:30 AM-12:00 PM TP021-10 M. Bonotto, P. Bettini, A. Cenedese
University di Padova - DII (Department of Industrial Engineering), *ITALY*
Model order reduction of large-scale state-space models in fusion machines via Krylov methods

POSTER SESSION **TP022**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Static & Quasi Static Fields
Christian Kruettgen
(Symphony II & III)

- 10:30 AM-12:00 PM TP022-1 H. Igarashi, S. Hiruma
Graduate School of Information Science, Hokkaido University, *JAPAN*
Fast Three-Dimensional Analysis of Eddy Currents in Litz Wire Using Integral Equation
- 10:30 AM-12:00 PM TP022-2 M. Corona-Sánchez, E. Melgoza-Vázquez, S. Maximov
Universidad Autonoma Metropolitana -- Azcapotzalco, *MEXICO*
An improved time-harmonic 2D eddy current finite element H formulation

- 10:30 AM-12:00 PM TP022-3 C. Lashway, O. Mohammed
Florida International University, *UNITED STATES OF AMERICA*
A Coupled 3DFE/Electrochemical Model for the Analysis of Voltage Behavior in Batteries under Loading and Charging Conditions
- 10:30 AM-12:00 PM TP022-4 Y. Zhao, W. Fu
Ansys Inc, *HONG KONG S.A.R. (CHINA)*
A Novel Potential Formulation with Coulomb Gauge for 3-D Motional Eddy-current Problems Using Edge Elements
- 10:30 AM-12:00 PM TP022-5 Z. De Greve, P. Dular
University of Mons (Electrical Power Engineering Unit), *BELGIUM*
Full-Wave Correction of Quasi-Static Models Using Finite Element Subproblems: Application to High Frequency Wound Inductors
- 10:30 AM-12:00 PM TP022-6 M. Trlep, M. Jesenik, M. Beković, A. Hamler
University of Maribor, Faculty of Electrical Engineering and Computer Science, *SLOVENIA*
Transient Analysis of a Grounding System as Second Order Time-Dependent Nonlinear Problem
- 10:30 AM-12:00 PM TP022-7 C. Choi, I. Park
School of Electronic and Electrical Engineering, Sungkyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Capacitance Extraction of Current Carrying Conductor Using Surface Charge and Field Energy
- 10:30 AM-12:00 PM TP022-8 A. Canova, V. Cirimele, F. Freschi, L. Giaccone
Politecnico di Torino, *ITALY*
From the magnetic field measurement to the numerical evaluation of the human exposure
- 10:30 AM-12:00 PM TP022-9 H. Yamamoto, K. Sugahara
Kindai University, *JAPAN*
Strategic Dual Image Method for Three-dimensional Magnetic Field Problems
- 10:30 AM-12:00 PM TP022-10 C. De Falco, L. Di Rienzo, N. Ida, S. Yuferev
The university of akron, *ITALY*
Nonlinear Impedance Boundary Condition for Time-domain E-B BEM Formulation

POSTER SESSION **TP031**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Coupled Problems
Mohammad Reza Barzegaran
(Symphony II & III)

- 10:30 AM-12:00 PM TP031-1 S. H. Lee, J. H. Choi, S. H. Kim
Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Shape and Dynamic Behavior of Nonmagnetic Material Immersed in Magnetic Nanofluid Due to Magnetic Surface and Body Force Density
- 10:30 AM-12:00 PM TP031-2 W. Qi, L. Xiaoming, Y. Tian, H. Chongyang
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Study on the Insulation Performance Using the Response Surface-Geometric Feature Charge Simulation Method
- 10:30 AM-12:00 PM TP031-3 Z. Gao, X. Xu, S. Yan, P. Lyu, Z. Ren
Institute of Microelectronics of Chinese Academy of Sciences, *CHINA, PEOPLE'S REPUBLIC OF*
Multiphysics Coupling Analysis of TSV by Using Discrete Geometric Method Based on Tonti Diagram
- 10:30 AM-12:00 PM TP031-4 T. Yamamoto, S. Matsuzawa, T. Ota, K. Hirata
Osaka University, *JAPAN*
Numerical Analysis of Ion Behavior Considering Charging Effect of a Dielectric Body
- 10:30 AM-12:00 PM TP031-5 T. Ben, Q. Yang, R. Yan, L. Zhu
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Magnetically Controlled Saturable Reactor Core Vibration under Practical Working Conditions

- 10:30 AM-12:00 PM TP031-6 M. Toudji, G. Parent, S. Duchesne, P. Dular
University d'Artois, *FRANCE*
Determination of Winding Lumped Parameter Equivalent Circuit by Means of Finite Element Method
- 10:30 AM-12:00 PM TP031-7 X. Zhang, L. Li, Y. Geng, Q. Yang, C. Xie
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
The research of suppressing motor noise and vibration based on negative magnetostrictive effect
- 10:30 AM-12:00 PM TP031-8 C. Park, T. Song, T. Kim
Hyundai Heavy Industries, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Structural safety evaluation of the inner conductors in GIB(Gas Insulated Bus) using electromagnetic structural coupled analysis
- 10:30 AM-12:00 PM TP031-9 M. Ostrenko, B. Andriienko
SoftTeam Group, *UKRAINE*
Transformer Impulse Surges Calculation by FEM Coupled to Circuit
- 10:30 AM-12:00 PM TP031-10 X. Guan, N. Shu, X. Jin, Y. Wu, H. Peng
School of electrical engineering, Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
Temperature and Electromagnetic Force Analysis of GIB Plug-in Connector with Different Contact Status under Short Circuit Fault

POSTER SESSION **TP032**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Static & Quasi Static Fields
David Lowther
(Symphony II & III)

- 10:30 AM-12:00 PM TP032-1 F. Xiao, B. Zhang, J. Mo, J. He
Tsinghua University, *CHINA, PEOPLE'S REPUBLIC OF*
Calculation of Ion Flow Field at the Crossing of HVDC Transmission Lines by Method of Characteristics
- 10:30 AM-12:00 PM TP032-2 Y. Zhao, W. Fu
Ansys Inc, *HONG KONG S.A.R. (CHINA)*
A Novel Coulomb Gauged Magnetic Vector Potential Formulation for 3-D Eddy-current Field Analysis Using Edge Elements
- 10:30 AM-12:00 PM TP032-3 S. Shah, P. Rasilo, A. Arkkio
Aalto University, *FINLAND*
Eddy Current Loss Calculation in Burred Laminated Cores
- 10:30 AM-12:00 PM TP032-4 H. Y. Lee, S. H. Lee, S. H. Kim
Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Validation of Numerical Analysis for Negative Corona Discharges with Calculation of Trichel Pulse Current
- 10:30 AM-12:00 PM TP032-5 J. Siau, O. Chadebec, G. Meunier, J. Guichon, R. Perrin-Bit
CNRS, G2Elab, University de Grenoble, *FRANCE*
Preconditioning of a Low-Frequency Electric Field Integral Equation Formulation with Circuit Coupling using H- matrices
- 10:30 AM-12:00 PM TP032-6 G. Vinsard, S. Dufour
University de Lorraine, LEMTA, *FRANCE*
The breakup of a spherical magnetic beads chain suspended along the magnetic axis of a magnet
- 10:30 AM-12:00 PM TP032-7 Q. Debray, G. Meunier, O. Chadebec, J. Coulomb, A. Carpentier
CNRS, G2Elab, University de Grenoble, *FRANCE*
2D Integral Formulations for Nonlinear Magneto-static Field Computation and Rotating Machines Pre-Design
- 10:30 AM-12:00 PM TP032-8 E. Rodrigues, R. Pontes, T. Fernandes Neto
Federal University of Ceara, *BRAZIL*
Lightning Incidence Model Based on the Electric Field Gradient: 3D Electrostatic Analyses

- 10:30 AM-12:00 PM TP032-9 M. Abdelqader, J. Morelli, R. Palka, K. Woronowicz
Queen's University, *CANADA*
2-D Quasi-Static Fourier Series Solution for a Single Coil of a Linear Induction Motor
- 10:30 AM-12:00 PM TP032-10 R. Gong, S. Wang, W. Xie
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Simulation Analysis and Design of the Electromagnetic Repulsion Mechanism Based on Finite Element Method

POSTER SESSION **TP041**
Tuesday, November 15, 2016
10:30 AM-12:00 PM

Numerical Techniques
Christos Antonopoulos
(Symphony II & III)

- 10:30 AM-12:00 PM TP041-1 C. Richter, M. Clemens, S. Schoeps
University of Wuppertal, *GERMANY*
GPU Accelerated Explicit Time Integration Methods for Electro-Quasistatic Fields
- 10:30 AM-12:00 PM TP041-2 I. Niyonzima, M. Clemens, S. Schöps
TU Darmstadt, *GERMANY*
Investigation of the Time Integration Methods on the Parareal Method for Field Computation of Eddy Currents Problems
- 10:30 AM-12:00 PM TP041-3 L. Montier, A. Pierquin, T. Henneron, S. Clénet
university Lille1 - L2EP, *FRANCE*
Structure Preserving Model Reduction of Low Frequency Electromagnetic Problem based on POD and DEIM
- 10:30 AM-12:00 PM TP041-4 R. Baltes, O. Farle, R. Dyczij-Edlinger
Chair of Electromagnetic Theory, Saarland University, *GERMANY*
Compact Time-Domain Models Including Lorentz Materials Based on Reduced-Order Models in the Frequency-Domain
- 10:30 AM-12:00 PM TP041-5 S. Noguchi, T. Naoe, H. Igarashi, S. Matsutomo, V. Cingoski
Hokkaido University, *JAPAN*
A New Adaptive Meshing Method Using Non-conforming Finite Element Method
- 10:30 AM-12:00 PM TP041-6 Y. Xie, L. Li, S. Wang
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
Model Order Reduction for Non-Linear Quasi-Electrostatic Problems
- 10:30 AM-12:00 PM TP041-7 J. Choi, H. Lee, K. Jang, M. Hikita, S. Lee
Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Finite Element Analysis of Partial Discharge Initiation Voltage Employing Surface Charge Density at the Liquid- Solid Interface
- 10:30 AM-12:00 PM TP041-8 A. Chiariello, A. Formisano, F. Ledda, R. Martone, F. Pizzo
Department of Industrial and Information Engineering, Seconda Università di Napoli,, *ITALY*
Impact of field approximations on magnetic field line tracing
- 10:30 AM-12:00 PM TP041-9 P. Ferrouillat, C. Guérin, G. Meunier, B. Ramdane, P. Labie, D. Dupuy
Univ. Grenoble Alpes, G2Elab, *FRANCE*
3D Modeling of the Movement of Machine using Mortar Method for Edge Finite Elements of Magnetic Vector Potential Formulation
- 10:30 AM-12:00 PM TP041-10 M. Hasan, J. Gyselinck, R. Sabariego
KU Leuven - Dept. ESAT, *BELGIUM*
POD- versus a physics-based parameterized model-order- reduction technique accounting for movement

- 10:30 AM-12:00 PM TP042-1 D. Jung, G. Jeong, K. Joo, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Study on the optimal design of PMA-SynRM loading ratio for achievement of ultra-premium efficiency
- 10:30 AM-12:00 PM TP042-2 G. Cho, W. Lee, I. Kang, J. Ha, H. Kim, W. Son, D. Song, M. Song, G. Kim,
Changwon National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
The stabilization of cogging torque variation by manufacturing tolerances
- 10:30 AM-12:00 PM TP042-3 C. Lai, G. Feng, N. Kar
University of Windsor, *CANADA*
**Torque Ripple Minimization for Interior PMSM with Consideration of Magnetic Saturation
Incorporating On-line Parameter Identification**
- 10:30 AM-12:00 PM TP042-4 S. Ham, S. Cho, G. Jeong, H. Liu, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and performance analysis of outer rotor Fan-type PMSM for power density improvement
- 10:30 AM-12:00 PM TP042-5 H. Lee, H. Ahn, K. Joo
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Quasi-realtime Parameter Tracking Method of the Precise Parameters for IPMSM
- 10:30 AM-12:00 PM TP042-6 S. Lee, J. Lee, W. Kim
Busan University of Foreign Studies, *KOREA, REPUBLIC OF (SOUTH KOREA)*
**A Study on Correcting the Nonlinearity between Stack Length and Back Electromotive Force in Spoke
Type Ferrite Magnet Motors**
- 10:30 AM-12:00 PM TP042-7 G. Zhang, W. Hua, M. Tong, M. Cheng
School of Electrical Engineering, Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
**Coupled Magnetic-Thermal Fields Analysis of Water Cooling Flux-Switching Permanent Magnet
Motors by an Axially Segmented Model**
- 10:30 AM-12:00 PM TP042-8 O. Kwon, H. Choi
Department of Electrical Engineering, Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH
KOREA)*
**Improvements of Magnetic Binding Forces Between Permanent Magnet Rack and Back Yoke in
Large-scale Motors**
- 10:30 AM-12:00 PM TP042-9 D. Kim, H. Hwang, T. Kim, G. Jeong, C. Lee
Pusan National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
**An Optimal Design Method of Double-Stator Flux- Switching Permanent Magnet Machine Based on
Magnetic Equivalent Circuit**
- 10:30 AM-12:00 PM TP042-10 D. Yun, B. Kim, S. Oh, G. Kim, H. Jeon, M. Shon
Korea Institute of Machinery & Materials (KIMM), *KOREA, REPUBLIC OF (SOUTH KOREA)*
Induction Heating of Adhesive for Shoe Manufacturing

- 1:30 PM- 3:00 PM TP051-1 S. Lim, S. Min, K. Izui, S. Nishiwaki
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
**Design Optimization of a Magnetic Actuator Incorporating the Concept of the Hybrid Analysis
Method**

1:30 PM- 3:00 PM	TP051-2	A. Wang, Y. Wen North China Electric Power University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Application of a Hybrid Genetic Algorithm for Optimal Design of Interior Permanent Magnet Synchronous Machines
1:30 PM- 3:00 PM	TP051-3	A. Pierquin, S. Brisset, T. Henneron, S. Clenet university Lille1 - L2EP, <i>FRANCE</i> Optimization of the TEAM workshop problem 22 using POD-EIM reduced model
1:30 PM- 3:00 PM	TP051-4	F. Mach University of West Bohemia, <i>CZECH REPUBLIC</i> Bayesian Approach to Design Optimization of Electromagnetic Systems under Uncertainty
1:30 PM- 3:00 PM	TP051-5	S. Ho, S. Yang, Y. Bai Zhejiang University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> A Fast Methodology for Topology Optimizations of Electromagnetic Devices
1:30 PM- 3:00 PM	TP051-6	J. Gong, F. Gillon, J. Truong Canh Shandong university, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Kriging Manifold Mapping Technique for Electromagnetic Design Optimization
1:30 PM- 3:00 PM	TP051-7	G. Sirewal, Q. Ali, B. Kwon Hanyang University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Optimal Design of Brushless Wound Rotor Synchronous Machine for Torque Ripple Reduction
1:30 PM- 3:00 PM	TP051-8	S. Shin, J. Lee, Y. Kim University of Hanbat National, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Computation on Ratio of Rotor Core and Flux Barrier for Torque Ripple Reduction of 240W ALA-SynRM
1:30 PM- 3:00 PM	TP051-9	M. Mohammadi, D. Lowther Electrical and Computer Engineering Department, McGill University, <i>CANADA</i> Finding Optimal Performance Indices of Synchronous AC Motors
1:30 PM- 3:00 PM	TP051-10	B. Xia, M. Pham, J. Yeon, C. Koh Chungbuk National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Utilizing Adaptive Dynamic Taylor Kriging Assisted Multi- Objective DE Algorithm for Optimization Design of Electromagnetic Device

POSTER SESSION 4 - TP052

Tuesday, November 15, 2016
1:30 PM-3:00 PM

Numerical Techniques
Dennis Giannacopoulos
(Symphony II & III)

1:30 PM- 3:00 PM	TP052-1	H. Ueda, S. Noguchi, A. Ishiyama, H. Miyazaki, S. Iwai, T. Tosaka, S. Nomura, T. Kurusu, S. Urayama, H. Fukuyama Okayama University, <i>JAPAN</i> Electromagnetic Analysis on Magnetic Field and Current Distribution in High Temperature Superconducting Thin Tape in Coil Winding
1:30 PM- 3:00 PM	TP052-2	W. Lee, H. Kim, D. Kim Inha University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Axial Green Function Method for Axisymmetric Electromagnetic Field Computation
1:30 PM- 3:00 PM	TP052-3	D. Kim, B. Kang, D. Kim, H. Cho, K. Choi Kyungpook National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Hybrid Reliability Analysis Method for Electromagnetic Design Problems with Non-Gaussian Probabilistic Parameters
1:30 PM- 3:00 PM	TP052-4	S. Bilicz, Z. Badics, S. Gyimothy, B. Balint, J. Pavo Tensor Research, LLC, <i>HUNGARY</i> Modeling of Dense Windings for Resonant Wireless Power Transfer by an Integral Equation Formulation

1:30 PM- 3:00 PM	TP052-5	M. Sakashita, K. Nishi, S. Ito, T. Mifune, T. Matsuo Kyoto University, <i>JAPAN</i> Method for Current/Voltage Post-Correction for Efficient Hysteretic Magnetic Field Analysis
1:30 PM- 3:00 PM	TP052-6	N. Mahdibejadgargari, H. De Oliveira Mota, E. Da Silva, R. Da Silva Adriano, Federal University of Minas Gerais, <i>BRAZIL</i> Improvement of System Quality in a Generalized Finite Element Method Using Discrete Curvelet Transform
1:30 PM- 3:00 PM	TP052-7	P. Dlotko, B. Kapidani, R. Specogna, University of Udine, <i>ITALY</i> Topoprocessor: an efficient computational topology toolbox for h-oriented eddy current formulations
1:30 PM- 3:00 PM	TP052-8	N. Duan, W. Xu, S. Wang, J. Zhu Xi'an Jiaotong University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Current Distribution Calculation of Superconducting Layer in HTS Cable Considering Magnetic Hysteresis by Using XFEM
1:30 PM- 3:00 PM	TP052-9	M. Jüttner, S. Grabmaier, D. Vögeli, W. Rucker, P. Göhner University of Stuttgart, Institute for Theory of Electrical Engineering, <i>GERMANY</i> Coupled Multiphysics Problems as Market Place for Competing Autonomous Software Agents
1:30 PM- 3:00 PM	TP052-10	T. Iwashita, A. Ida, T. Mifune, Y. Takahashi Kyoto University, <i>JAPAN</i> Software Framework for Parallel BEM Analyses with H- matrices

POSTER SESSION 4 - TP061

Tuesday, November 15, 2016

1:30 PM-3:00 PM

Optimization & Design
Gerard Meunier
(Symphony II & III)

1:30 PM- 3:00 PM	TP061-1	H. Liu, G. Jeong, S. Jung, J. Lee Hanyang University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> PM Arrangement Design of PM-Assisted Synchronous Reluctance Motors for maximize back-EMF and Cogging Torque Reduction
1:30 PM- 3:00 PM	TP061-2	M. Chelabi, T. Hacib, Y. Le Bihan, H. Boughedda GeePs, <i>ALGERIA</i> Electromagnetism-like Mechanism Algorithm and Least Square Support Vector Machine for Estimation the Defect in Nondestructive Evaluation
1:30 PM- 3:00 PM	TP061-3	A. S, D. Lowther Electrical and Computer Engineering Department, McGill University, <i>CANADA</i> Feature Selection for Facilitation of Evolutionary Multi- Objective Design Optimization: Application to IPM motor Design Problems
1:30 PM- 3:00 PM	TP061-4	J. Lee, H. Jung, D. Woo Seoul National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> A new Robust Optimization Approach Applied to Permanent Magnet Synchronous Motor
1:30 PM- 3:00 PM	TP061-5	O. Rehman, S. Yang, S. Khan Zhejiang University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> An Improved Quantum Particle Swarm Optimization Applied to Inverse Problem in Electromagnetics
1:30 PM- 3:00 PM	TP061-6	C. Krasopoulos, M. Beniakar, A. Kladas ICCS - National Technical University of Athens, <i>GREECE</i> Robust Optimization of High Speed PM Motor Design
1:30 PM- 3:00 PM	TP061-7	J. Vedral, R. Musselman US Air Force Academy, <i>UNITED STATES OF AMERICA</i> Analysis of Slits in a Perfect-Absorber Element to Reduce Size

- 1:30 PM- 3:00 PM TP061-8 B. Ko, D. Lee, S. Jung
SungKyunKwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
MADS using Cost Patterns Analysis For the Optimal Design of Electric Machine
- 1:30 PM- 3:00 PM TP061-9 K. Guo, S. Fang, H. Lin, Y. Guo, H. Yang, Y. Li
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
A Nonlinear Dynamic Magnetic Network Model for Flux- Reversal Linear-Rotary Permanent Magnet Actuator Considering Local Saturation
- 1:30 PM- 3:00 PM TP061-10 B. Mohamodhosen, F. Gillon, A. Tounzi, L. Chevallier, J. Korecki
Ecole Centrale de Lille, *FRANCE*
Topology Optimisation of a 3D Electromagnetic Device using the SIMP Density-Based Method

POSTER SESSION 4 - TP062

Tuesday, November 15, 2016

1:30 PM-3:00 PM

Static & Quasi Static Fields

Jan Sykulski

(Symphony II & III)

- 1:30 PM- 3:00 PM TP062-1 M. Zhu, X. Huang
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
Dynamic reluctance mesh modeling and losses evaluation of permanent magnet traction motor
- 1:30 PM- 3:00 PM TP062-2 P. Lyu, X. Xu, S. Yan, Z. Ren
Institute of Microelectronics of Chinese Academy of Sciences, *CHINA, PEOPLE'S REPUBLIC OF*
3D Capacitance Computation Using Polygonal Prism Elements through Piecewise Interpolation
- 1:30 PM- 3:00 PM TP062-3 C. Zhang, Y. Li, Q. Yang
Hebei University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
An Electromagnetic Simulation Method Considering Micro- Eddy-Current Effect
- 1:30 PM- 3:00 PM TP062-4 W. Li, Y. Su, P. Wang, D. Li
Beijing Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Stator Temperature Field of Large-Scale Air-cooled Turbine Generator Considering Main Insulation Shelling
- 1:30 PM- 3:00 PM TP062-5 K. Shin, H. Park, H. Cho, K. Jung, J. Choi
Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Armature Reaction Magnetic Field and Inductance of Tubular Linear Synchronous Machines with Axially Magnetized Permanent Magnets Accounting for Flux- Passing Iron Pole Effect
- 1:30 PM- 3:00 PM TP062-6 J. Sim, J. Jeong, S. Kim, J. Hong
Automotive Engineering, Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Analytical Modeling and Experimental Verification of Vehicle Horn Considering Skin Effect Using Coupled Electric and Magnetic Circuits
- 1:30 PM- 3:00 PM TP062-7 C. Ni, Z. Zhao
North China Electric power university, *CHINA, PEOPLE'S REPUBLIC OF*
Inductance calculation method based on induced voltage
- 1:30 PM- 3:00 PM TP062-8 C. Tian, Y. Zhong, Y. Lei, J. Yuan, B. Chen, K. Muramatsu
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
A Coupled Method for Evaluating Eddy Current Loss of NdFeB Permanent Magnets in a Saturated Core Fault Current Limiter
- 1:30 PM- 3:00 PM TP062-9 Y. Zhang, C. Zhuang, R. Zeng
Tsinghua University, *CHINA, PEOPLE'S REPUBLIC OF*
Electrical Field Evaluation around Slender Conductors by Collocation Boundary Element Method
- 1:30 PM- 3:00 PM TP062-10 L. Xu, M. Lin, X. Fu, K. Liu
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Analysis of the End Effects in Double Stator Linear-Rotary Permanent Magnet Motor with Long Mover

POSTER SESSION 4 - TP071

Tuesday, November 15, 2016

1:30 PM-3:00 PM

Devices & Applications**Markus Clemens**

(Symphony II & III)

- 1:30 PM- 3:00 PM TP071-1 J. Liu, H. Ma, P. Ju, L. Huang
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Design and Analysis of a Superconducting Induction Magnetic Levitation Device for Hydraulic Turbo-Generator
- 1:30 PM- 3:00 PM TP071-2 J. Jeong, J. Lim, C. Ha, C. Kim, J. Choi
KIMM, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Thrust and Efficiency Analysis of Linear Induction Motors for Semi-High-Speed Maglev Trains Using 2D Finite Element Models
- 1:30 PM- 3:00 PM TP071-3 P. Ponomarev, J. Keränen, M. Lyly, J. Westerlund, P. Råback
VTI, *FINLAND*
Multi-Slice 2.5D Modelling and Validation of Skewed Electrical Machines Using Open-Source Tools
- 1:30 PM- 3:00 PM TP071-4 N. Li, M. Lin, G. Yang, L. Hao
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Design and Analysis of a Hybrid Permanent Magnet Axial Field Flux-Switching Memory Machine
- 1:30 PM- 3:00 PM TP071-5 J. Liu, H. Ma
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Researching Magnetic Suspension for 1000MW Hydraulic Generator Set
- 1:30 PM- 3:00 PM TP071-6 A. Heya, K. Hirata, S. Ezaki, T. Ota
Osaka university, *JAPAN*
Dynamic Analysis of a New Three-Degree-of-Freedom Actuator for Image Stabilization
- 1:30 PM- 3:00 PM TP071-7 V. Cezar, P. Lombard, A. Charnacé, O. Chadebec, L. Rouve, J. Coulomb, F. Zgainski, B. Caillault
CNRS - University Grenoble Alpes, *FRANCE*
Numerical simulation of inrush currents in single-phase transformers using the Jiles-Atherton model and the finite element method
- 1:30 PM- 3:00 PM TP071-8 X. Liu, S. Huang
Hunan University, *CHINA, PEOPLE'S REPUBLIC OF*
Magnetic field and thrust analysis of the U-channel air-core permanent magnet linear synchronous motor
- 1:30 PM- 3:00 PM TP071-9 H. Park, J. Kwon, S. Ahn
The University of Suwon, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Simple Equivalent Circuit Model for Shielding Analysis of Magnetic Sheets
- 1:30 PM- 3:00 PM TP071-10 T. Sheng, S. Niu, W. Fu
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
A Novel Design Method for the Electrical Machines with Biased DC Excitation Flux Linkage

POSTER SESSION 4 - TP072

Tuesday, November 15, 2016

1:30 PM-3:00 PM

Devices & Application**Christian Kruettgen**

(Symphony II & III)

- 1:30 PM- 3:00 PM TP072-1 T. Zou, R. Qu, D. Li, D. Jiang
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
A Novel Doubly Magnetic Geared Permanent Magnet Machine
- 1:30 PM- 3:00 PM TP072-2 S. Yoshioka, T. Tsujigoi, Y. Gotoh
Oita University, *JAPAN*
Proposal of Electromagnetic Inspection of Opposite Side Defect in Steel using 3-D Nonlinear FEM Taking Account of Minor loop and Residual Magnetization

1:30 PM- 3:00 PM	TP072-3	X. Wang, W. Xu Huazhong University of Science and Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Fast Global Terminal Sliding Mode Control Method for Torque Regulation on Disc Coreless Permanent Magnet Synchronous Motor
1:30 PM- 3:00 PM	TP072-4	X. Zhao, S. Niu The Hong Kong Polytechnic University, <i>HONG KONG S.A.R. (CHINA)</i> A Novel Coreless Contra-Rotating Axial-Flux Machine for Wind Power Applications
1:30 PM- 3:00 PM	TP072-5	F. Tavernier, Z. Li, A. Bréard, D. Voyer, C. Sartori, L. Krähenbühl Ecole Centrale de Lyon, <i>FRANCE</i> Comparison of the near field coupling using spherical and spheroidal harmonics
1:30 PM- 3:00 PM	TP072-6	L. Campana, F. Dughiero, M. Forzan, R. Rizzo, E. Sieni University of Padova - Department of Industrial Engineering, <i>ITALY</i> Analysis of the effect of not-parallel needles in electroporation
1:30 PM- 3:00 PM	TP072-7	J. Kim, J. Lee, Y. Kim, S. Jung SungKyunKwan University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Characteristics Analysis Method of Axial Flux Permanent Magnet Motor based on 2-D Finite Element Analysis
1:30 PM- 3:00 PM	TP072-8	S. Yoshioka, Y. Gotoh Oita University, <i>JAPAN</i> 3D Analysis of Inspection Method of Opposite Side Defect in Steel using AC Square Wave Magnetic Field with DC Bias Taking Account of Minor Loop
1:30 PM- 3:00 PM	TP072-9	G. Zhao, W. Hua, P. Su School of Electrical Engineering, Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> The Influence of Opening Slots on Stator Surface-Mounted Permanent Magnet Machines
1:30 PM- 3:00 PM	TP072-10	V. Rallabandi, N. Taran, D. Ionel, J. Eastham University of Kentucky, <i>UNITED STATES OF AMERICA</i> Coreless Multidisc Axial Flux PM Machine with Carbon Nanotube Windings

POSTER SESSION 4 - TP081

Tuesday, November 15, 2016

1:30 PM-3:00 PM

Devices & Application

Karl Hollaus

(Symphony II & III)

1:30 PM- 3:00 PM	TP081-1	R. Musselman, J. Vedral US Air Force Academy, <i>UNITED STATES OF AMERICA</i> Circular Patch Antenna Size-Reduction Technique
1:30 PM- 3:00 PM	TP081-2	D. Woo Yeungnam University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Overhang effect in the Axial Flux Permanent Magnet Motor
1:30 PM- 3:00 PM	TP081-3	N. Sadowski, A. Pires, J. Bastos, W. Carpes Jr. Universidade Federal de Santa Catarina, <i>BRAZIL</i> A Computational System Based on FEM and PSO techniques for Magnetic Field Optimization
1:30 PM- 3:00 PM	TP081-4	D. Yu, J. Zhang, X. Huang, Y. Fang, Q. Lu Zhejiang University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Design and Optimization of Interior Permanent Magnet Traction Motor for High Speed Train Considering the Short Circuit Current
1:30 PM- 3:00 PM	TP081-5	J. Yeon, B. Xia, L. Zhu, C. Koh Chungbuk National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Multi-Objective Optimization of IPMSM with Consideration of Torque Characteristics and Iron Loss

1:30 PM- 3:00 PM	TP081-6	S. Lee, J. Lee, Y. Kim University of Hanbat National, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Optimum Design and Calculation of d-q Axis Currents for 50kW EV Traction Motor based on Flux-Torque Controller
1:30 PM- 3:00 PM	TP081-7	D. Kim, J. Kim, Y. Kim, S. Jung, Sungkyunkwan University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Hybridization Algorithm of Fireworks Optimization and Generating Set Search for Optimal Design of IPMSM
1:30 PM- 3:00 PM	TP081-8	B. Xia, Z. Ren, K. Choi, C. Koh Kangwon National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> A Novel Subregion-Based Multi-dimensional Optimization of Electromagnetic Devices Assisted by Kriging Surrogate Model
1:30 PM- 3:00 PM	TP081-9	Y. Asai, T. Ota, T. Yamamoto, K. Hirata Osaka University, <i>JAPAN</i> Proposed of Novel Linear Oscillating Actuator's Structure using Topology Optimization
1:30 PM- 3:00 PM	TP081-10	C. Kim, K. Joo, J. Lee Hanyang University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Multi-objective Robust Controller Design for Electromagnetic Suspensions via LMI

POSTER SESSION 4 - TP082

Tuesday, November 15, 2016

1:30 PM-3:00 PM

Devices & Application

Lionel Pichon

(Symphony II & III)

1:30 PM- 3:00 PM	TP082-1	K. Hirono, R. Hoshino, S. Wakao, Y. Okamoto, W. Jeon c/o Prof. S. Wakao, Department of Electrical Engineering and BioScience, Waseda University, <i>JAPAN</i> Multi-Objective Design Optimization of Primary Core in Induction Heating Roll by Level-set Method
1:30 PM- 3:00 PM	TP082-2	S. Jia, R. Qu, D. Li, J. Li, W. Kong Huazhong University of Science & Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Improved Torque and Flux Weakening Capability for Flux Modulated Machines by Injecting DC Currents into the Armature Windings
1:30 PM- 3:00 PM	TP082-3	K. Darques, A. Tounzi, Y. Le Menach, K. Beddek, M. Biet-Evrard University Lille 1, <i>FRANCE</i> An approach to model shaft voltage of wound rotor synchronous machines
1:30 PM- 3:00 PM	TP082-4	A. Balamurali, C. Lai, V. Loukanov, N. Kar University of Windsor, <i>CANADA</i> Modeling and Analysis of Carrier Harmonic based Eddy Current Losses in Interior Permanent Magnet Motors
1:30 PM- 3:00 PM	TP082-5	W. Lee, E. Jo, G. Kim Changwon National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Heat Capacity increasing design of rare earth IPMSM for Temperature Rising Suppression
1:30 PM- 3:00 PM	TP082-6	H. Sadou, T. Hacib, Y. Le Bihan, H. Acikgoz GeePs, <i>ALGERIA</i> Microwave Characterization Using Partial Least Square Regression
1:30 PM- 3:00 PM	TP082-7	D. Jang, J. Chang Donga University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Analysis and Design of Armature Magnetic Field Distribution in Permanent-Magnet Vernier Machines
1:30 PM- 3:00 PM	TP082-8	S. Kim, E. Park, S. Jung, Y. Kim The Department of Electrical Engineering, Chosun University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Transfer Torque Performance Comparison in Coaxial Magnetic Gears with Different Flux-Modulator Shapes

- 1:30 PM- 3:00 PM TP082-9 Y. Zheng, G. Valerio, Z. Ren
Sorbonne University UPMC Univ Paris 06, *FRANCE*
Effect of Deformations on Carbon-Based Transistors in Ballistic and Partially Ballistic Regimes
- 1:30 PM- 3:00 PM TP082-10 A. Sarigiannidis, M. Beniakar, A. Kladas
ICCS-National Technical University of Athens, *GREECE*
Hybrid Analytical-FEM Methodology for Loss evaluation in Traction Motors for Electric Vehicle Applications
- 1:30 PM- 3:00 PM TP082-11 B. Wang, T. Rahman, K. Chang, M. Mohammadi, D. Lowther
Electrical and Computer Engineering Department, McGill University, *CANADA*
A Neural Network Based Surrogate Model for Predicting Noise in Synchronous Reluctance Motors

ORAL SESSION TO13

Tuesday, November 15, 2016
3:30 PM- 5:00 PM

Optimization & Design III
Charles T. M. Choi
(Symphony I)

- 3:15 PM- 3:35 PM TO13-1 S. Noguchi
Hokkaido University, *JAPAN*
Optimal Configuration Design of MRI REBCO Magnet Taking into Account Superconducting Layer
- 3:35 PM- 3:55 PM TO13-2 X. Zhang, X. Zhang, W. Fu
Tianjin Normal University, *CHINA, PEOPLE'S REPUBLIC OF*
History Based Learning Artificial Bee Colony Algorithm for Electromagnetic Inverse Problems
- 3:55 PM- 4:15 PM TO13-3 A. Moschoudis, G. Tsekouras, A. Kladas,
ICCS-National Technical University of Athens, *GREECE*
Optimal Design of Marine Electric Propulsion Salient Pole Synchronous Motor
- 4:15 PM- 4:35 PM TO13-4 E. Kuci, F. Henrotte, C. Geuzaine, P. Duysinx
University of Liege, *BELGIUM*
Shape and Topology Optimization of Electrical Machines using Lie Derivative-Based Analytical Sensitivity Analysis
- 4:35 PM- 4:55 PM TO13-5 A. Hackl, M. Alb, C. Magele, W. Renhart
Graz University of Technology / IGTE, *AUSTRIA*
Enhanced Firefly Algorithm for Optimal Design of a Disk Type Magneto-Rheologic Fluid Clutch

ORAL SESSION TO14

Tuesday, November 15, 2016
3:30 PM- 5:00 PM

Devices & Applications IV
Nathan Ida
(Concerto A)

- 3:15 PM- 3:35 PM TO14-1 Y. Gao, R. Qu, D. Li, J. Li
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Force Ripple Minimization of a Linear Vernier Permanent Magnet Machine for Direct-Drive Servo Applications
- 3:35 PM- 3:55 PM TO14-2 A. Mohamed, A. Berzoy, O. Mohammed
Florida International University, *UNITED STATES OF AMERICA*
Magnetic Design Considerations of Bidirectional Inductive Wireless Power Transfer System for EV Applications
- 3:55 PM- 4:15 PM TO14-3 K. Han, M. Swaminathan
Ulsan National Institute of Science and Technology, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Combined Integral Equation Based Circuit Modeling of Interconnections in Electronic Packaging
- 4:15 PM- 4:35 PM TO14-4 T. Campi, S. Cruciani, G. Rodríguez, M. Feliziani
University of L'Aquila, *ITALY*
Coil Design of a Wireless Power Transfer Charging System for a Drone

4:35 PM- 4:55 PM TO14-5 V. Climente-Alarcon, R. Sundaria, J. Panchal, A. Arkkio
Aalto University, *FINLAND*
Simulation of an Induction Motors Rotor after Connection

ORAL SESSION TO15
Tuesday, November 15, 2016
3:30 PM- 5:00 PM

Numerical Techniques II
Jasmin Smajic
(Concerto B)

3:15 PM- 3:35 PM TO15-1 D. Pereira Botelho, Y. Marechal, B. Ramdane
G2Elab, *FRANCE*
Vector Interpolation on Natural Element Method: Mesh Sensitivity Analysis

3:35 PM- 3:55 PM TO15-2 P. Alotto, P. Bettini, O. Bottauscio, M. Chiampi, L. Zilberti
IST. NAZ. RICERCA METROLOGICA, *ITALY*
H-matrix Sparsification Applied to Bioelectromagnetic Analysis of Large Scale Human Models

3:55 PM- 4:15 PM TO15-3 N. Lima, R. Mesquita
Universidade Federal de Minas Gerais, *BRAZIL*
Edge Meshless Method applied to Vector Electromagnetic Problems

4:15 PM- 4:35 PM TO15-4 M. Ogino, A. Takei, S. Sugimoto
Nagoya University, *JAPAN*
A Domain Decomposition Method Based on an Algorithm of the MINRES method for High-Frequency Electromagnetic Field Analysis

4:35 PM- 4:55 PM TO15-5 S. Noguchi, T. Naoe, H. Igarashi, S. Matsutomo, V. Cingoski, A. Ahagon, A. Kameari
Hokkaido University, *JAPAN*
A New Adaptive Mesh Refinement Method in FEA Based on Conservation of Magnetic Field at Interface Between Two Elements

ORAL SESSION TO16
Tuesday, November 15, 2016
3:30 PM- 5:00 PM

Static & Quasi Static Field III
Ruth Sabariego
(Concerto C)

3:15 PM- 3:35 PM TO16-1 P. Bettini, M. Passarotto, R. Specogna
University di Padova - DII (Department of Industrial Engineering), *ITALY*
A volume integral formulation for solving eddy current problems on polyhedral meshes

3:35 PM- 3:55 PM TO16-2 F. Moro, L. Codecasa
Dipartimento di Ingegneria Industriale, University di Padova, *ITALY*
A 3D Hybrid Cell Method for Induction Heating Problems

3:55 PM- 4:15 PM TO16-3 D. Fernández, A. Akbarzadeh-Sharbat, W. Gross, D. Giannacopoulos,
McGill University, *CANADA*
Solving Finite-Element Time-Domain Problems with GaBP

4:15 PM- 4:35 PM TO16-4 Y. Wakayama, Y. Hosobuchi, R. Shimoyama, S. Wakao, T. Tokumasu, Y. Takahashi, K. Fujiwara
c/o Prof. S. Wakao, Department of Electrical Engineering and BioScience, *JAPAN*
Development of Local Expansion Edge Element for Magnetic Field Analysis

4:35 PM- 4:55 PM TO16-5 M. Grinfeld, P. Grinfeld
The U.S. Army Research Laboratory, *UNITED STATES OF AMERICA*
Second Energy Variation in Heterogeneous Systems with Electrostatic and Magnetostatic Interaction

ORAL SESSION **WO17**
Wednesday, November 16, 2016
8:30 AM- 10:30 AM

Numerical Techniques II
Hajime Igarashi
(Symphony I)

- 8:30 AM- 8:50 AM WO17-1 S. Ikuno, G. Chen, T. Itoh, S. Nakata, K. Abe
Tokyo University of Technology, *JAPAN*
Variable Preconditioned Krylov Subspace Method with Communication Avoiding Technique for Electromagnetic Analysis
- 8:50 AM- 9:10 AM WO17-2 S. Sathyan, A. Belahcen, J. Kataja, F. Henrotte, A. Benabou, Y. Menach
Aalto University, Finland, *FINLAND*
Computation of Magnetic Forces Using Degenerated Airgap Element
- 9:10 AM- 9:30 AM WO17-3 M. Afonso, J. Vasconcelos, R. Mesquita, B. Ramdane, Y. Marechal, C. Vollaire, L. Krahenbuhl
CEFET-MG, *BRAZIL*
Hybrid Natural Element Boundary Element Method Applied to Solve Electromagnetic Scattering Problem
- 9:30 AM- 9:50 AM WO17-4 R. Plasser, G. Koczka, O. Biro
IGTE, TU-Graz, *AUSTRIA*
Convergence Investigation of Finite Element Fixed-Point Techniques Applied to 3D Nonlinear Periodic Eddy Current Problems Involving Voltage- Driven Coils
- 9:50 AM- 10:10 AM WO17-5 R. Tittarelli, Y. Le Menach, F. Piriou, E. Creusé, S. Nicaise, J. Ducreux
University of Lille/L2EP, *FRANCE*
A Guaranteed Equilibrated Error Estimator for the Harmonic A-phi formulation in Eddy Current Problems

ORAL SESSION **WO18**
Wednesday, November 16, 2016
8:30 AM- 10:30 AM

Material & Modeling II
Jonathan Bird
(Concerto A)

- 8:30 AM- 8:50 AM WO18-1 G. Escamez, B. Ramdane, G. Meunier, G. Vega, C. Bruzek, P. Tixador
Univ. Grenoble Alpes, G2Elab, *FRANCE*
Numerical model for quench calculations in a 10 kA MgB2 superconducting cable
- 8:50 AM- 9:10 AM WO18-2 K. Jacques, P. Dular, C. Geuzaine, J. Gyselinck
University of Liege, *BELGIUM*
Dual Magnetodynamic Finite Element Formulations with Inclusion of an Energy-Based Hysteresis Model
- 9:10 AM- 9:30 AM WO18-3 F. Martin, U. Aydin, D. Singh, L. Daniel, P. Rasilo, A. Belahcen
Aalto University, *FINLAND*
Demagnetization field in a uniformly magnetized ellipsoid embedded in an infinite anisotropic media
- 9:30 AM- 9:50 AM WO18-4 J. Vedral, R. Musselman
US Air Force Academy, *UNITED STATES OF AMERICA*
Simple Resolution to Parameter- Extraction Ambiguities of Inhomogeneous Materials

ORAL SESSION **WO19**
Wednesday, November 16, 2016
8:30 AM- 10:30 AM

Coupled Problems II
Fabio Freschi
(Concerto B)

- 8:30 AM- 8:50 AM WO19-1 S. Wang, L. Li, X. Zhao, Y. Xie
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
Behavior of the Laminated Core Considering the Special Hysteresis Characteristics under AC-DC Hybrid Magnetization
- 8:50 AM- 9:10 AM WO19-2 G. Devornique, J. Fontchastagner, N. Takorabet
University de Lorraine - GREEN, *FRANCE*
Hybrid Model : Permeance Network + 3D Finite Element for Modeling Claw- Pole Synchronous Machines

- 9:10 AM- 9:30 AM WO19-3 S. Steentjes, P. Rasilo, A. Belahcen, R. Kouhia, K. Hameyer
Aalto University, *GERMANY*
Anisotropic Model for Villari Effect in Non-Oriented Electrical Steel Sheets
- 9:30 AM- 9:50 AM WO19-4 A. Halbach, C. Geuzaine
University of Liege, *BELGIUM*
Multiharmonic Resolution of Nonlinearly Coupled Electrovibromechanical Systems using Domain Decomposition
- 9:50 AM- 10:10 AM WO19-5 V. Kotlan, I. Dolezel, R. Hamar, D. Panek
University of West Bohemia, *CZECH REPUBLIC*
Modeling of Selected 3D Electroheat Coupled Problems with Time-Varying Geometries

ORAL SESSION WO20

Wednesday, November 16, 2016

8:30 AM- 10:30 AM

Devices & Applications V

Alessandro Formisano

(Concerto C)

- 8:30 AM- 8:50 AM WO20-1 K. Shin, H. Park, H. Cho, J. Choi
Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and Analysis of Magnetic Geared Permanent Magnet Machine considering Loss Reduction
- 8:50 AM- 9:10 AM WO20-2 X. Zhao, S. Niu
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
A Novel Double-Rotor Parallel Hybrid- Excitation Machine for Electric Vehicle Propulsion
- 9:10 AM- 9:30 AM WO20-3 W. Zhao, B. Kwon
Shandong University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Design of a Cost-Effective SPM Motor to Suppress Torque Pulsations Using Multi-Grade Permanent Magnets
- 9:30 AM- 9:50 AM WO20-4 J. Rao, R. Qu, D. Li, Y. Gao
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
A Novel Surface Permanent Magnet Vernier Machine with Halbach Array Permanent Magnet in Stator Slot Opening
- 9:50 AM- 10:10 AM WO20-5 A. Fatemi, D. Ionel, N. Demerdash
University of Kentucky, *UNITED STATES OF AMERICA*
Distinguishing the Efficiency Requirements in Motoring and Generating Operations of PM Machines

POSTER SESSION - WP011

Wednesday, November 16, 2016

11:00 AM- 12:00 PM

Devices & Applications

Kazuhiro Muramatsu

(Symphony II & III)

- 10:30 AM-12:00 PM WP011-1 Z. Li, F. Tavernier, L. Krähenbühl, D. Voyer, C. Sartori, A. Bréard
University de Lyon, Ampere (CNRS AMR5005), *FRANCE*
Error analysis for near-field EMC problems based on multipolar expansion approach
- 10:30 AM-12:00 PM WP011-2 F. Guo, L. Jin, Q. Yang, Y. Qiu
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Characteristic Analysis of Acoustic Emission Signals Induced by EMAT
- 10:30 AM-12:00 PM WP011-3 T. Sheng, S. Niu, W. Fu
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
A Novel Disc Machine with Axial Biased Flux and Complementary Salient Rotors

- 10:30 AM-12:00 PM WP011-4 S. Won, S. Cho, J. Bak, G. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
PMSG design for usage of VTOL UAV in consideration of occurrence of heat according to the change of input current
- 10:30 AM-12:00 PM WP011-5 T. Xia, H. Yu, L. Huang, X. Liu
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Design and optimization of a field-modulating permanent magnet tubular linear generator for direct-drive wave energy conversion
- 10:30 AM-12:00 PM WP011-6 S. Jia, R. Qu, J. Li, D. Li, H. Lu
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Comparison of Stator DC Current Excited Vernier Reluctance Machines with Different Field Winding Configurations
- 10:30 AM-12:00 PM WP011-7 K. Lu, Y. Xia, H. Pan
Aalborg University, *DENMARK*
A New Type of Axial-flux Magnetic Lead Screw with Inherent Spring Characteristic
- 10:30 AM-12:00 PM WP011-8 J. Park, H. Kim, J. Hur
University of Ulsan, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Characteristics of Irreversible Demagnetization in accordance with Phase Advance Angle in IPM-type BLDC Motor
- 10:30 AM-12:00 PM WP011-9 K. Seo, I. Park
Sungkyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Characteristics of Medium-Frequency Power Apparatus with Thread-Type Magnetic Core
- 10:30 AM-12:00 PM WP011-10 E. Park, S. Kim, S. Jung, Y. Kim
The Department of Electrical Engineering, Chosun University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Study on Power Transmission Method of Dual-Stage Type Magnetic Gear for High Gear Ratio

POSTER SESSION - **WP012**
Wednesday, November 16, 2016
11:00 AM- 12:00 PM

Optimization & Design
Lionel Pichon
(Symphony II & III)

- 10:30 AM-12:00 PM WP012-1 J. Mun, G. Park, S. Seo, Y. Kim, S. Jung
Sungkyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design Characteristics of IPMSM with Wide Constant Power Speed Range for EV Traction
- 10:30 AM-12:00 PM WP012-2 J. Park, K. Lee, S. Lee, S. Jung
SungKyunKwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Design of Permanent Magnet Synchronous Motor Considering Magnetic Core Characteristic for High Efficiency
- 10:30 AM-12:00 PM WP012-3 B. Xia, S. Hong, K. Choi, C. Koh
Chungbuk National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Optimal Design of Winding Transposition of Power Transformer using Adaptive Co-Kriging Surrogate Model
- 10:30 AM-12:00 PM WP012-4 D. Wang, L. Jin, Q. Yang, Y. Qiu
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Research on Optimization Algorithm of BP neural network for permanent magnet synchronous motor based on Cloud Computing
- 10:30 AM-12:00 PM WP012-5 N. Ryu, S. Lim, S. Min, K. Izui, S. Nishiwaki
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Multi-objective Optimization of Magnetic Actuator Design Using Adaptive Weight Determination Scheme
- 10:30 AM-12:00 PM WP012-6 Z. Zaharis, I. Gravas, T. Yioultis, P. Lazaridis, I. Glover, C. Skeberis, T. Xenos
University of Huddersfield, *GREECE*
Exponential Log-Periodic Antenna Design Using Improved Particle Swarm Optimization with Velocity Mutation

- 10:30 AM-12:00 PM WP012-7 S. Khan, S. Yang, O. Obaid U. Rehman, L. Wang
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
A Particle Swarm Optimization Method Applied to Global Optimization of Inverse Problem
- 10:30 AM-12:00 PM WP012-8 J. Yuan, J. Zhou, Y. Gao, K. Muramatsu, W. Guan, B. Chen
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
Effect of Magnetic-valve Distribution on Reactance of Magnetic Controlled Reactor
- 10:30 AM-12:00 PM WP012-9 S. Yang, K. Hirata, T. Ota, Y. Kawase
Osaka University, *JAPAN*
Impedance Linearity of Contactless Magnetic Type Position Sensor
- 10:30 AM-12:00 PM WP012-10 K. Babanezhad, J. Bignon
INPG SA, *FRANCE*
HBA-1: A Hybrid Bi-Objective Optimizer for Black-Box Problems

POSTER SESSION - **WP021**
Wednesday, November 16, 2016
11:00 AM- 12:00 PM

Material Modeling
Mohammad Reza Barzegaran
(Symphony II & III)

- 10:30 AM-12:00 PM WP021-1 M. Tousignant, F. Sirois, A. Kedous-Lebouc
Polytechnique Montreal, *CANADA*
Identification of the Preisach Model Parameters Using Only The Major Hysteresis Loop and The Initial Magnetization Curve
- 10:30 AM-12:00 PM WP021-2 G. Eriksson
ABB AB, Corporate Research, *SWEDEN*
Performance of a Nonlinear Surface Impedance Boundary Condition for Conducting Magnetic Materials Exposed to Inhomogeneous and Nonharmonic External Fields
- 10:30 AM-12:00 PM WP021-3 Y. Mine, Y. Gao, K. Muramatsu, W. Guan, C. Tian, J. Yuan, B. Chen
Saga University, *JAPAN*
Comparison of Hysteresis Modeling Methods Using Play Model and Free Energy Model
- 10:30 AM-12:00 PM WP021-4 K. Terashima, N. Sakamoto, K. Yamaguchi, T. Uchimoto, T. Takagi
Fukushima university, *JAPAN*
Application of Monte Carlo method for magnetic clusters introduced thermal distributions
- 10:30 AM-12:00 PM WP021-5 W. Xu, N. Duan, S. Wang, J. Zhu
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
A Temperature-dependent Hysteresis Model for Soft Ferrites Based on a Vectorial Elemental Operator
- 10:30 AM-12:00 PM WP021-6 L. Santandrea, Y. Le Bihan, R. Corcolle, L. Daniel
GeePs-CentraleSupélec, *FRANCE*
Eddy Current Inspection of a ferromagnetic Material, Effect of a biaxial Stress State
- 10:30 AM-12:00 PM WP021-7 F. Mendes, J. Leite, N. Batistela, N. Sadowski, F. Suárez
GRUCAD/EEL/ UFSC, *BRAZIL*
A New Method for Parameters Obtaining of Jiles-Atherton Hysteresis Scalar Model
- 10:30 AM-12:00 PM WP021-8 J. Li, Q. Yang, Y. Li, C. Zhang, B. Qu
Hebei University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Measurement and Modeling of 3-D Rotating Anomalous Loss Considering Harmonics and Skin Effect of Soft Magnetic Materials
- 10:30 AM-12:00 PM WP021-9 S. Willerich, H. Herzog
Technical University of Munich, *GERMANY*
Interpretation of an Energy Based Hysteresis Model as a Scalar Preisach Operator

10:30 AM-12:00 PM WP021-10 L. Gu, E. Bostanci, D. He, M. Wu
University of Texas at Dallas, *UNITED STATES OF AMERICA*
Evaluation of the Influence of Different Cutting Methods on Permeability and Core Losses in Magnetic Steel

POSTER SESSION - **WP022**
Wednesday, November 16, 2016
11:00 AM- 12:00 PM

Wave Propagation
Noboru Niguchi
(Symphony II & III)

10:30 AM-12:00 PM WP022-1 T. Bauernfeind, W. Renhart, P. Alotto, O. Biro
Institute of Fundamentals and Theory in Electrical Engineering / Graz University of Technology, *AUSTRIA*
UHF RFID Antenna Impedance Characterization: Numerical Simulation of Interconnection Effects on the Antenna Impedance

10:30 AM-12:00 PM WP022-2 G. Yang, W. Kong, M. Chang, X. Liu, Q. Wu
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Wideband Tuning Range Frequency Selective Surface Based on Liquid Crystal and Tunable Ability Analysis

10:30 AM-12:00 PM WP022-3 D. Gazzana, A. Bretas, D. Thomas, C. Christopoulos
University of Florida, *BRAZIL*
A Hybrid Method to Represent the Soil Ionization Phenomenon in Impulsive Grounding Systems

10:30 AM-12:00 PM WP022-4 Í. Soares, Ú. Resende
CEFET-MG, *BRAZIL*
Sierpinski Carpet Fractal Microstrip Arrays for Energy Harvesting Applications

10:30 AM-12:00 PM WP022-5 T. Vold
Continuum Technology, Inc., *UNITED STATES OF AMERICA*
CEM using Hamilton's Principle with variation of the space-time vector potential

10:30 AM-12:00 PM WP022-6 P. Wang, Y. Lyu, G. Yang, F. Meng, X. Ding, K. Zhang, J. Fu, Q. Wu
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
A Cascaded Feed Network for Beam Switching Antenna with Improved Radiation Efficiency

10:30 AM-12:00 PM WP022-7 J. Choo, H. Kim, D. Kim, H. Park, Y. Cho
Korea Institute of Nuclear Safety, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Shielding Effectiveness of Cabinet Used in Nuclear Power Plants

10:30 AM-12:00 PM WP022-8 M. Grinfeld, P. Grinfeld
The U.S. Army Research Laboratory, *UNITED STATES OF AMERICA*
Calculus of Moving Surfaces and Singular Wave-Fronts in Ideal Magneto hydrodynamics

10:30 AM-12:00 PM WP022-9 R. Obrist, J. Smajic, G. Behrmann
University of Applied Sciences Rapperswil HSR, *SWITZERLAND*
Simulation Based Design of GIS Sensors for PD Measurements

10:30 AM-12:00 PM WP022-10 F. Afshar, A. Akbarzadeh-Sharbat, D. Giannacopoulos
McGill University, *CANADA*
Wideband Finite-Difference Time-domain Modeling of Graphene via Recursive Fast Fourier Transform

POSTER SESSION - **WP031**
Wednesday, November 16, 2016
11:00 AM- 12:00 PM

Numerical Techniques
Renato Cardoso Mesquita
(Symphony II & III)

10:30 AM-12:00 PM WP031-1 A. Saitoh, T. Takayama, A. Kamitani
Yamagata University, *JAPAN*
Combination Approach of Domain-Type and Boundary-Type Meshless Methods for Solving Hybrid Boundary- Value Problem of Homogeneous and Inhomogeneous Elliptic PDEs

- 10:30 AM-12:00 PM WP031-2 A. Tronchoni, D. Gazzana, A. Bretas, R. Leborgne
University of Florida, *BRAZIL*
Extended TLM-2D Numerical Technique: An Algorithm Considering Non-Homogenous Media and Ionization
- 10:30 AM-12:00 PM WP031-3 T. Tsuburaya, Y. Okamoto, Z. Meng
Fukuoka University, *JAPAN*
Parallelization Performance of Robust Incomplete Factorization Preconditioner for Real Symmetric Linear Systems Arising in Magnetic Field Analyses
- 10:30 AM-12:00 PM WP031-4 D. Pereira Botelho, Y. Marechal, B. Ramdane
G2Elab, *FRANCE*
Numerical Integration on Natural Element Method: Comparative Analyses of Different Approaches
- 10:30 AM-12:00 PM WP031-5 K. Watanabe, Y. Sakai
Muroran Institute of Technology, *JAPAN*
Fast Variable Preconditioned Conjugate Gradient Method Using Deflation technique
- 10:30 AM-12:00 PM WP031-6 X. Yan, X. Han, D. Wu, D. Xie, B. Bai
Shenyang University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Research on Preconditioned Conjugate Gradient Method Based on EBE-FEM and the Application in Electromagnetic Field Analysis
- 10:30 AM-12:00 PM WP031-7 D. Wang, X. Xi, Y. Pu, Y. Fang, Z. Li
Xi'an University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Improved Parabolic Equation Method for Narrow-Band Loran-C ASF Prediction over Irregular Terrain
- 10:30 AM-12:00 PM WP031-8 D. Abraham, D. Giannacopoulos
McGill University, *CANADA*
A Parallel Implementation of the Correction Function Method for Poisson's Equation with Immersed Surface Charges
- 10:30 AM-12:00 PM WP031-9 B. Gonçalves, M. Afonso, E. Coppoli, B. Ramdane, Y. Marechal
CEFET-MG, *BRAZIL*
The Natural Element Method Applied to Solve an Electrical Machine Problem
- 10:30 AM-12:00 PM WP031-10 S. Martin, C. Choi
National Chiao Tung University, Dept of Electrical and Computer Engineering, *TAIWAN, REPUBLIC OF CHINA*
A Mesh-Refinement Method Based on Artificial Neural Networks for Electrical Impedance Tomography

POSTER SESSION - **WP032**
Wednesday, November 16, 2016
11:00 AM- 12:00 PM

Devices & Applications
So Noguchi
(Symphony II & III)

- 10:30 AM-12:00 PM WP032-1 R. Torchio, P. Bettini
Università di Padova - DII (Department of Industrial Engineering), *ITALY*
PEEC-based analysis of complex fusion magnets during fast voltage transients with H-matrix compression
- 10:30 AM-12:00 PM WP032-2 Y. Li, H. Lin, H. Yang, K. Guo
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
A Novel Brushless Hybrid Excited Adjustable-Speed Eddy- Current Coupling
- 10:30 AM-12:00 PM WP032-3 L. Wu
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Low Rotor Eddy Current Losses SPM Servo Motors with Fractional Slot Concentrated Windings and Novel Retaining Cage
- 10:30 AM-12:00 PM WP032-4 G. Jeong, H. Hwang, D. Kim, T. Kim, C. Lee
PUSAN NATIONAL UNIVERSITY, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Acoustic Noise and Vibration Reduction of Flux-Switching Permanent Magnet Machine for Elevator Door Application

- 10:30 AM-12:00 PM WP032-5 J. Cheaytani, A. Benabou, A. Tounzi, M. Dessoude
University of Lille/EDF, *FRANCE*
Stray load losses analysis of cage induction motor using 3- D finite element method with external circuit coupling
- 10:30 AM-12:00 PM WP032-6 S. Seo, G. Park, B. Son, Y. Kim, S. Jung
SungKyunKwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Novel Design Method to Reduce Input Current for Multi- Operating Point IPMSM
- 10:30 AM-12:00 PM WP032-7 G. Yang, L. Li, X. Zhang
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
Magnetic Characteristics Analysis of CSR of Transformer Type
- 10:30 AM-12:00 PM WP032-8 M. Kim, J. Jeong, C. Ha, J. Lim, M. Won
KIMM, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Experimental Verification and Electromagnetic Analysis for Force Performance of Levitation and Guidance Electromagnet in Semi-high-speed Maglev Train
- 10:30 AM-12:00 PM WP032-9 H. Kim, Y. Lee, K. Kim, G. Park
Pusan National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Analysis of RFECT System Based on the Eddy Current Distributions in Pipeline Inspection
- 10:30 AM-12:00 PM WP032-10 H. Kim, H. Lee, G. Park
Pusan National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
New Algorithm for Improvement of Sizing Accuracy of Defect Depth in MFL type Nondestructive Testing

POSTER SESSION - **WP041**
Wednesday, November 16, 2016
11:00 AM- 12:00 PM

Devices & Applications
Christos Antonopoulos
(Symphony II & III)

- 10:30 AM-12:00 PM WP041-1 H. Lee, H. Liu, G. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design of High-Speed IPM-BLDC Motor with High Efficiency
- 10:30 AM-12:00 PM WP041-2 H. Kuwahara, Y. Maruyama, S. Wakao, M. Takahashi, M. Yagi, T. Okutani, Y. Okamoto
c/o Prof. S. Wakao, Department of Electrical Engineering and BioScience, *JAPAN*
Multi-objective Optimization of Magnetic Sensor with Conductor Plate for Rail Wheel Detection
- 10:30 AM-12:00 PM WP041-3 T. Ishikawa, S. Amada, K. Segawa, N. Kurita
Gunma University, *JAPAN*
Proposal of a Radial- and Axial-Flux Permanent Magnet Synchronous Generator
- 10:30 AM-12:00 PM WP041-4 X. Liu, Z. Chen, S. Huang
Hunan University, *CHINA, PEOPLE'S REPUBLIC OF*
Performance Evaluation of the Excitation Assistance Switched Reluctance Wind Power Generator under Open Circuit Fault
- 10:30 AM-12:00 PM WP041-5 Y. Yao, Q. Lu, X. Huang, Y. Ye
Zhejiang University, *CHINA, PEOPLE'S REPUBLIC OF*
Fast Calculation of Detent Force in PM Linear Synchronous Machines with Considering Magnetic Saturation
- 10:30 AM-12:00 PM WP041-6 G. Zhang, W. Hua, M. Cheng
School of Electrical Engineering, Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Parameter Sensitivity Analysis and Robust Design Approach for Flux-Switching Permanent Magnet Machines
- 10:30 AM-12:00 PM WP041-7 G. Ruiz-Ponce, M. Arjona, C. Hernandez
Instituto Tecnológico de La Laguna, *MEXICO*
Modeling of an Axial-Type Magnetic Gear using a Reluctance-Based Magnetic Equivalent Circuit

- 10:30 AM-12:00 PM WP041-8 D. Lim, D. Woo, H. Yeo, S. Jung, H. Jung
Seoul National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A New Robust Surrogate-Assisted Multi-Objective Optimization Algorithm for an IPMSM Design
- 10:30 AM-12:00 PM WP041-9 M. Siddiqi, W. Zhao, B. Kwon, T. Lipo
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Performance Comparison of Dual Airgap and Single Airgap Spoketype Vernier Permanent Magnet Machines
- 10:30 AM-12:00 PM WP041-10 H. Hong, H. Liu, G. Jeong, S. Jung, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design of 2-Phase Outer Rotor Coreless Torque Actuator in Hybrid Multi-D.O.F System for Gimbal Tilting

POSTER SESSION - **WP042**
Wednesday, November 16, 2016
10:30 AM- 12:00 PM

Devices & Applications
Markus Clemens
(Symphony II & III)

- 10:30 AM-12:00 PM WP042-1 J. De Bisschop, P. Sergeant, L. Dupré
Ghent University, *BELGIUM*
Demagnetization Fault Detection in Axial Flux PM Machines by using Sensing Coils and an Analytical Model
- 10:30 AM-12:00 PM WP042-2 Y. Jiang, W. Xu, C. Ye
Huazhong University of Science and Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Composite Field-oriented Control for Linear Induction Motor Based Super-twisting Sliding Mode Observers
- 10:30 AM-12:00 PM WP042-3 X. Ding, S. Ren, Y. Xiong
BeiHang University, *CHINA, PEOPLE'S REPUBLIC OF*
Iron Loss of Electrical Steel Considering Rotational Magnetization and Laminated Direction Mechanical Stress
- 10:30 AM-12:00 PM WP042-4 H. Shin, J. Chang
Dong-A University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Comparison of the Characteristics of Coaxial Magnetic Gears with PM and AC Excitation
- 10:30 AM-12:00 PM WP042-5 R. Li, L. Li
State Key Laboratory of Alternate Electrical Power System with Renewable Energy Sources, North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
Wide-band Modeling for Dual-band Coil of Wireless Power Transfer System
- 10:30 AM-12:00 PM WP042-6 V. Aguiar, R. Pontes, T. Fernandes Neto, R. Sousa
Federal University of Ceara, *BRAZIL*
Determination of the Relative Permeability to Estimate the Efficiency in Energy-Efficient Motors
- 10:30 AM-12:00 PM WP042-7 Y. Xiao, L. Zhou, J. Wang, R. Yang
Huazhong University of Science and Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Transient Parameters Calculation of Salient-Pole Synchronous Machine by Finite Element Analysis
- 10:30 AM-12:00 PM WP042-8 D. Hu, W. Xu, R. Dian, C. Ye
Huazhong University of Science and Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Optimal Flux Trajectory Analysis of Linear Induction Machine Considering Thrust Transient
- 10:30 AM-12:00 PM WP042-9 I. Kim, K. Joo, J. Lim, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Study on Sensorless Control that considers the Response of BLDC Motor inside the Oil Hydraulic Actuator for AWD Clutch Control
- 10:30 AM-12:00 PM WP042-10 B. Zhang, M. Cheng
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
A Modular and Fault-tolerant Linear Flux-switching Permanent Magnet Machine with Thin Yoke

POSTER SESSION **WP051**
Wednesday, November 16, 2016
1:30 PM- 3:30 PM

Devices & Applications
Christian Kruegtgen
(Symphony II & III)

- 1:30 PM- 3:00 PM WP051-1 J. Yuan, Y. Zhong, Y. Lei, C. Tian, W. Guan, Y. Gao, K. Muramatsu, B. Chen
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
A Novel Topology of Hybrid Saturated Core Fault Current Limiter Considering Permanent Magnets Stability Performance
- 1:30 PM- 3:00 PM WP051-2 Z. Wang, W. Xu, C. Ye
Huazhong University of Science and Technology, *CHINA, PEOPLE'S REPUBLIC OF*
In-Wheel Outer Rotor Flux Switching Permanent Magnet Machine with Fractional-Slot Concentrated Windings for Electrical Vehicles
- 1:30 PM- 3:00 PM WP051-3 J. Park, K. Lee, S. Lee, S. Jung
SungKyunkwan University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Design and Analysis of High Speed Permanent Magnet Motor considering Thermal Influence from Impeller Load Characteristic of Turbo Blower System
- 1:30 PM- 3:00 PM WP051-4 H. Jun, G. Jeong, J. Lim, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
A Study on the Eddy Current Formation by Leakage Magnetic Flux on the PMSM Rotor Retaining Plate and Reduction Method
- 1:30 PM- 3:00 PM WP051-5 D. Kim, K. Hwang, J. Park, H. Park, S. Ahn
KAIST, *KOREA, REPUBLIC OF (SOUTH KOREA)*
High Efficiency Wireless Power and Force Transfer for Micro-robot using 3-Axis AC/DC Magnetic Coil
- 1:30 PM- 3:00 PM WP051-6 Y. Gao, K. Muramatsu, W. Guan, J. Yuan, C. Tian, B. Chen
Saga University, *JAPAN*
Loss and Noise Reduction of Saturable Magnetically Controlled Reactor by Improving Structure of Magnetic Valves
- 1:30 PM- 3:00 PM WP051-7 H. Lee, H. Liu, G. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Newly Proposed Hybrid Type Multi-DOF Operation Motor for Multi-Copter UAV Systems
- 1:30 PM- 3:00 PM WP051-8 Y. Wang, W. Fu, S. Niu
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
Design and Analysis of a Novel Dual PM Machine with Wide Speed Range
- 1:30 PM- 3:00 PM WP051-9 J. Yoo, T. Jung
, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Permanent Magnet Structure Design for Cogging Torque Reduction of Outer Rotor Type Radial Flux Permanent Magnet Generator
- 1:30 PM- 3:00 PM WP051-10 M. He, W. Xu, C. Ye
Huazhong University of Science and Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Novel Single Phase Doubly Salient Permanent Magnet Machine with Asymmetric Stator Poles

POSTER SESSION **WP052**
Wednesday, November 16, 2016
1:30 PM- 3:30 PM

Devices & Applications
Bai Baodong
(Symphony II & III)

- 1:30 PM- 3:00 PM WP052-1 S. Cho, H. Liu, G. Jeong, J. Lee
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Analysis of inductance according to the applied current in Spoke type PMSM and suggestion of driving mode

1:30 PM- 3:00 PM	WP052-2	V. Rallabandi, N. Taran, D. Ionel, J. Eastham University of Kentucky, <i>UNITED STATES OF AMERICA</i> Multilayer Concentrated Windings for Axial Flux PM Machines
1:30 PM- 3:00 PM	WP052-3	S. Kim, E. Park, S. Lee, Y. Kim The Department of Electrical Engineering, Chosun University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> A Gear Efficiency Improvement in Magnetic Gear by Eddy- Current Loss Reduction
1:30 PM- 3:00 PM	WP052-4	K. Kim, W. Kim, S. Park, S. Lee, H. Liu, G. Jeong Hanyang University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> A Study on the Relation between Electromagnetic Noise and Stator Tooth Tapering in Spoke Type Ferrite Magnet Motors
1:30 PM- 3:00 PM	WP052-5	L. Coelho, C. Richter, V. Mariani, A. Askarzadeh Pontifical Catholic University of Parana, <i>BRAZIL</i> Modified Crow Search Approach Applied to Electromagnetic Optimization
1:30 PM- 3:00 PM	WP052-6	A. Barasinski, H. Tertrais, C. Ghnatios, F. Chinesta Gem - ECOLE CENTRALE NANTES, <i>FRANCE</i> Processing of a CFRP laminate part by microwaves
1:30 PM- 3:00 PM	WP052-7	C. Gu, X. Zhang Tianjin Normal University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> A Novel Structure of Metamaterial with High Bandwidth for Wireless Power Transfer Systems
1:30 PM- 3:00 PM	WP052-8	L. Sun, M. Cheng, H. Wen, L. Song School of Electrical Engineering, Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Split Ratio Design Technique of the Magnetic-Gear Dual- Rotor Motor
1:30 PM- 3:00 PM	WP052-9	P. Baumgartner, T. Bauernfeind, K. Preis, O. Bíró IGTE, TU Graz, <i>AUSTRIA</i> Interactive Toolbox for the Visualization of Typical Antenna Attributes

POSTER SESSION **WP061**
Wednesday, November 16, 2016
1:30 PM- 3:30 PM

Devices & Applications
Olivier Chadebec
(Symphony II & III)

1:30 PM- 3:00 PM	WP061-1	M. Kato, K. Hirata Osaka University, <i>JAPAN</i> Dynamic Characteristics of Linear Resonant Actuator Using Electrical Resonance
1:30 PM- 3:00 PM	WP061-2	S. Jia, R. Qu, J. Li, D. Li, W. Kong, D. Ye Huazhong University of Science & Technology, <i>CHINA, PEOPLE'S REPUBLIC OF</i> A Stator-PM Consequent-Pole Vernier Machine with Hybrid Excitation and DC-Biased Sinusoidal Current
1:30 PM- 3:00 PM	WP061-3	K. Rönnerberg, M. Beniakar ABB AB, Corporate Research, <i>SWEDEN</i> A Study on Thermal Modelling of Interior Permanent Magnet Machines towards Intrinsic Fault Tolerance
1:30 PM- 3:00 PM	WP061-4	T. Hijazi, B. El-Masri, A. Arkadan Colorado School of Mines, <i>UNITED STATES OF AMERICA</i> Design Evaluation of Conventional and Toothless Stator Wind Power Axial-Flux PM Generator
1:30 PM- 3:00 PM	WP061-5	Y. Lee, J. Park, C. Ha, J. Lim, C. Kim KIMM, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> Design and Control Characteristics of Guidance System for Passive Maglev Transport System
1:30 PM- 3:00 PM	WP061-6	X. Liu, H. Yu, Z. Shi, L. Huang, N. Feng, T. Xia Southeast University, <i>CHINA, PEOPLE'S REPUBLIC OF</i>

Electromagnetic-fluid-thermal field Calculation and analysis of a permanent magnet linear motor

- 1:30 PM- 3:00 PM WP061-7 K. Shin, J. Choi, H. Cho
Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Experimental Verification and Analytical Calculation of Local Force in Permanent Magnet Synchronous Machine
- 1:30 PM- 3:00 PM WP061-8 A. De Sao José, U. Resende, J. Ferreira, L. De Oliveira, M. Menezes, J. Mologni, J. Ribas
CEFET-MG, *BRAZIL*
Conformity Evaluation of Radiated Immunity Standards to Modern Telecommunication Services Using Statistical Techniques
- 1:30 PM- 3:00 PM WP061-9 Y. Shin, Z. Wang, K. Kim
Hanbat National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Novel Analysis Method on the Vibration Reduction for Interior Permanent Magnet Synchronous Motor
- 1:30 PM- 3:00 PM WP061-10 N. Niguchi, K. Hirata, S. Nobuhara, K. Morita
Osaka University, *JAPAN*
Power Generation Performance Analysis of a Hub Dynamo Considering a Magnetic Hysteresis
- POSTER SESSION **WP062** **Devices & Applications**
Wednesday, November 16, 2016 **Gerard Meunier**
1:30 PM- 3:30 PM (Symphony II & III)
- 1:30 PM- 3:00 PM WP062-1 B. Chen, X. Li, C. Tian, Z. Du, W. Guan, Y. Gao, K. Muramatsu, J. Yuan
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
Transient characteristics analysis of a 380V/30kVar Superconducting Controlled Reactor
- 1:30 PM- 3:00 PM WP062-2 H. Park, H. Jung, D. Woo
Seoul National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Improved Quasi-3D Finite Element Method for an Axial Flux Permanent Magnet Motor
- 1:30 PM- 3:00 PM WP062-3 O. Kwon
Department of Electrical Engineering, Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
New Magnetic Vibrator of Three Degrees of Freedom in A Body
- 1:30 PM- 3:00 PM WP062-4 Q. Wang, S. Niu
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
Design Optimization and Comparative Analysis of Dual- Stator Flux- Modulated Machines
- 1:30 PM- 3:00 PM WP062-5 H. Ennassiri, M. Benhamida, M. Dhifli, G. Barakat, Y. Amara
GREAH/ Le Havre university, *FRANCE*
Vibro-acoustic response of a discoal switching flux permanent magnet machine due to electromagnetic origin
- 1:30 PM- 3:00 PM WP062-6 D. Park, S. Yu, K. Kim
Hanbat National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Heat Source Analysis of Induction Heater for Electric Vehicle
- 1:30 PM- 3:00 PM WP062-7 M. Mohammadi, D. Lowther
Electrical and Computer Engineering Department, McGill University, *CANADA*
A Computational Study of Efficiency Map Calculation for Synchronous AC Motor Drives including Cross Coupling and Saturation Effects
- 1:30 PM- 3:00 PM WP062-8 D. Jang, J. Chang
Donga University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Effects of Flux Modulation Poles on the Radial Magnetic Forces in Permanent Magnet Vernier Machines

- 1:30 PM- 3:00 PM WP062-9 D. Ahn, M. Yoon, S. Kim, J. Hong
Hanyang university, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Welding Loss Modeling and Evaluation of Electric Motors Using Laminated Cores
- 1:30 PM- 3:00 PM WP062-10 P. Alotto, M. Filippini
University di Padova, Dip. Ing. Industriale, *ITALY*
Coaxial magnetic gear design

POSTER SESSION **WP071**
Wednesday, November 16, 2016
1:30 PM- 3:30 PM

Wave Propagation
Karl Hollaus
(Symphony II & III)

- 1:30 PM- 3:00 PM WP071-1 H. Mahmud, W. Elmahmoud, M. Barzegaran, N. Brake
Lamar University, *UNITED STATES OF AMERICA*
Efficient Wireless Power Charging of Electric Vehicle by Modifying the Magnetic Characteristics of the Transmitting Medium
- 1:30 PM- 3:00 PM WP071-2 N. Hussain, J. Webb
McGill University, *CANADA*
Preconditioners for the nonconforming voxel edge element method
- 1:30 PM- 3:00 PM WP071-3 M. Cicuttin, R. Specogna, F. Trevisan
Ecole Nationale des Ponts et Chaussées, *FRANCE*
Adaptivity based on the constitutive error for the Maxwell's eigenvalue problem on polyhedral meshes
- 1:30 PM- 3:00 PM WP071-4 T. Itoh, S. Ikuno
Nihon University, *JAPAN*
Efficient Simulation of Electromagnetic Wave Propagation in Complex Shaped Domain by Hybrid Method of FDTD and MTDM Based on Interpolating Moving Least-Squares Method
- 1:30 PM- 3:00 PM WP071-5 S. Grubisic, A. Linhares, X. Travassos Jr., W. Carpes Jr.
Universidade Federal de Santa Catarina, *BRAZIL*
EMF Exposure Assessment in Proximity to Metallic Parapets
- 1:30 PM- 3:00 PM WP071-6 Y. Pu, L. Zhou, X. Xi, Y. Gu
Xi'an University of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Loran-C Ground-wave Propagation Prediction Based on the Hybrid FDTD Algorithm
- 1:30 PM- 3:00 PM WP071-7 Y. Du, B. Li
The Hong Kong Polytechnic University, *HONG KONG S.A.R. (CHINA)*
Hybrid MoM/FDTD Method for Thin Wire Structures with Rectangular
- 1:30 PM- 3:00 PM WP071-8 A. Takei, S. Sugimoto, M. Ogino
University of Miyazaki, *JAPAN*
High-frequency electromagnetic field analysis using anatomical human body models
- 1:30 PM- 3:00 PM WP071-9 Y. Huangfu, S. Wang
Xi'an Jiaotong University, *CHINA, PEOPLE'S REPUBLIC OF*
Radiated EMI Simulation for High-Power Ultra-Precision PMSM System Driven by PWM Converter
- 1:30 PM- 3:00 PM WP071-10 H. Yu, X. Ding, K. Zhuang, Q. Wu
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
Beam Reconfigurable Antenna based on Holography Metasurfaces

- 1:30 PM- 3:00 PM WP072-1 F. Chinesta, J. Aguado, E. Abisset-Chavanne, A. Barasinski
ECN, *FRANCE*
Model Reduction & Manifold Learning - based Parametric Computational Electromagnetism: Fundamentals & Applications
- 1:30 PM- 3:00 PM WP072-2 Y. Zhao, W. Fu
Ansys Inc, *HONG KONG S.A.R. (CHINA)*
A New Stable Full-wave Maxwell Solver for All Frequencies
- 1:30 PM- 3:00 PM WP072-3 S. Noguchi, R. Miyao, H. Igarashi, A. Ishiyama
Hokkaido University, *JAPAN*
An Accelerated Computation Method of Legendre Polynomial Coefficients for MRI REBCO Magnet Design
- 1:30 PM- 3:00 PM WP072-4 L. Sun
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
A New Sub-Gridding Technique for Helmholtz Equation
- 1:30 PM- 3:00 PM WP072-5 X. Zhang, W. Fu
Tianjin Normal University, *CHINA, PEOPLE'S REPUBLIC OF*
Fast Numerical Method for Computing Resonant Characteristics of Electromagnetic Devices based on Finite Element Method
- 1:30 PM- 3:00 PM WP072-6 J. Smajic
University of Applied Sciences Rapperswil HSR, *SWITZERLAND*
DG-FEM for Time Domain Eddy-Current Analysis
- 1:30 PM- 3:00 PM WP072-7 D. Tagami
Kyushu University, *JAPAN*
A Multigrid-Balancing Preconditioner of Domain Decomposition Methods for Magnetic Field Problems
- 1:30 PM- 3:00 PM WP072-8 A. Shukla, Y. Wue, S. Zonouz, M. Mehri Dehnavi
Rutgers University, *UNITED STATES OF AMERICA*
Fault-tolerant Iterative Solvers with Adaptive Reliability
- 1:30 PM- 3:00 PM WP072-9 Y. Qiu, L. Jin, Q. Ayng, X. Zhang, Y. Li
Tianjin Polytechnic University, *CHINA, PEOPLE'S REPUBLIC OF*
Study on parallel computing method of electromagnetic field finite element based on the cloud computing
- 1:30 PM- 3:00 PM WP072-10 T. Henneron, L. Montier, A. Pierquin, S. Clénet
university Lille1 - L2EP, *FRANCE*
Comparison of DEIM and BPIM to Speed up a POD-based Nonlinear Magnetostatic Model
- 1:30 PM- 3:00 PM WP072-11 S. Kawaguchi, T. Mifune, T. Iwashita, T. Matsuo
Kyoto University, *JAPAN*
Fast Transient Eddy-Current Analysis Using Error Correction Method for Series of Linear Systems

- 1:30 PM- 3:00 PM WP081-1 N. Feng, H. Yu, M. Hu, L. Huang, Z. Shi
Southeast University, *CHINA, PEOPLE'S REPUBLIC OF*
Design and Analysis of a Linear Continuous Magnetic Gear Generator for Direct-Drive Wave Energy Conversion

- 1:30 PM- 3:00 PM WP081-2 J. Rao, R. Qu, D. Li, Y. Gao
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
An Improved Dq-Axis Coordinate System Model for Interior Permanent Magnet Machines
- 1:30 PM- 3:00 PM WP081-3 J. Kwon, W. Zhao, B. Kwon
Hanyang University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Development of Flux Switching PM Machines with Phase- Group Concentrated-coil Windings for Robot Applications
- 1:30 PM- 3:00 PM WP081-4 D. Zhang, Q. Wu, K. Zhang, X. Ding, X. Sha
Harbin Institute of Technology, *CHINA, PEOPLE'S REPUBLIC OF*
High Selective Metamaterial Resonator Based on Complementary Split Ring Resonator
- 1:30 PM- 3:00 PM WP081-5 Q. Wu, Y. Xu
Shandong university, *CHINA, PEOPLE'S REPUBLIC OF*
Equivalent Magnetic Network of Novel Disk Transverse- flux Permanent Magnet Brushless Machine Based on Soft Magnetic Composite Material
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Department of Electrical Engineering, Chungnam National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Experiment and Analytical Prediction of Detent Force in Permanent Magnet Linear Synchronous Machines Considering End Effects
- 1:30 PM- 3:00 PM WP081-7 T. Kim, H. Hwang, D. Kim, G. Jeong, C. Lee
PUSAN NATIONAL UNIVERSITY, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Method of Parameters Calculation of Single-Phase Flux-Switching Permanent Magnet Machine
- 1:30 PM- 3:00 PM WP081-8 X. Ren, R. Qu, D. Li
Huazhong University of Science & Technology, *CHINA, PEOPLE'S REPUBLIC OF*
A Novel Stator-Permanent Magnet Brushless Machine with Wound Rotor
- 1:30 PM- 3:00 PM WP081-9 D. Wang, H. Jung, S. Jung
Shandong University, *CHINA, PEOPLE'S REPUBLIC OF*
Performance Evaluation and Design of Low cost and High Power Density Single Phase Flux Switching Reluctance Machine for Ventilation Based on 3D Inductance Function
- 1:30 PM- 3:00 PM WP081-10 D. Wang, H. Jung, X. Wang
Shandong University, *CHINA, PEOPLE'S REPUBLIC OF*
Investigation and Performance Evaluation of a SMC Rotor Hybrid Magnetic Circuit Dual Stator IPMSM with Flux Weakening Capability
- 1:30 PM- 3:00 PM WP081-11 P. Paplicki, M. Wardach, M. Bonisławski, R. Palka
West Pomeranian University of Technology Szczecin, *POLAND*
Impact of Rotor Design on Flux Control Capability of Hybrid Excited Synchronous Machine
- 1:30 PM- 3:00 PM WP081-12 H. Zhao, Y. Wang, Y. Zhan, G. Xu, X. Liu
North China Electric Power University, *CHINA, PEOPLE'S REPUBLIC OF*
Loss and Air-gap Force Analysis of Cage Induction Motors with Non-Skewed Asymmetrical Rotor Bars Based on FEM

POSTER SESSION **WP082**
Wednesday, November 16, 2016
1:30 PM- 3:30 PM

Material Modeling
Jan Sykulski
(Symphony II & III)

- 1:30 PM- 3:00 PM WP082-1 S. Tejjima, S. Ito, T. Mifune, T. Matsuo
Kyoto University, *JAPAN*
Semi-implicit Method for Fast Magnetization Analysis Using Assembled Domain Structure Model

1:30 PM- 3:00 PM	WP082-2	L. Zhu, C. Koh Chungbuk National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> A novel iron loss calculation algorithm using vector stop model taking account of the rotating magnetic fields
1:30 PM- 3:00 PM	WP082-3	J. Leite, K. Hoffmann, F. Mendes, N. Sadowski, J. Bastos, N. Batistela Univ. Federal de Santa Catarina, <i>BRAZIL</i> Performance Comparison between Jiles-Atherton and Play Vector Hysteresis Models on Field Calculation
1:30 PM- 3:00 PM	WP082-4	Y. Xue, W. Li, P. Wang, X. Zhang Beijing Jiaotong University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Influence of Magnetic Slot Wedge on Electromagnetic Parameters and Magnetic Field Distribution of Turbo-generator
1:30 PM- 3:00 PM	WP082-5	F. Senghor, G. Wasselyneck, H. Bui, S. Branchu, D. Trichet, G. Berthiau Institut de Recherche en Energie Electrique de Nantes Atlantique (IREENA), <i>FRANCE</i> Electrical Conductivity Tensor Modelling of Stratified Woven-Fabric Carbon Fiber Reinforced Polymer Composite Materials
1:30 PM- 3:00 PM	WP082-6	Y. Gao, W. Guan, C. Tian, J. Yuan, B. Chen, K. Muramatsu Saga University, <i>JAPAN</i> Investigation on Numerical Modeling of Excess Loss in SiFe Sheet Considering Pinning Effect
1:30 PM- 3:00 PM	WP082-7	F. Mendes, J. Leite, N. Batistela, N. Sadowski, F. Suárez GRUCAD/EEL/ UFSC, <i>BRAZIL</i> Insertion of a Sixth Parameter in Jiles-Atherton Hysteresis Scalar Model and the Method for Parameters Identification
1:30 PM- 3:00 PM	WP082-8	Y. Wang, Z. Liu Shandong University, School of Electrical Engineering, <i>CHINA, PEOPLE'S REPUBLIC OF</i> Research on Residual Flux Prediction of the Transformer
1:30 PM- 3:00 PM	WP082-9	L. Zhu, J. Lim, J. Park, C. Koh Chungbuk National University, <i>KOREA, REPUBLIC OF (SOUTH KOREA)</i> On the construction of vector Preisach model based on magnetic measurements for iron loss calculation in laminated core

ORAL SESSION **WO21**
Wednesday, November 16, 2016
3:30 PM- 5:00 PM

Coupled Problems III
Ahmed Mohamed
(Symphony I)

3:15 PM- 3:35 PM	WO21-1	A. Roskopf, S. Schuster, A. Endruschat, E. Bär Fraunhofer IISB, <i>GERMANY</i> Influence of Varying Bundle Structures on Power Electronic Systems Simulated by a Coupled Approach of FEM and PEEC
3:35 PM- 3:55 PM	WO21-2	M. Estopier Castillo, E. Clavel, N. Galopin, F. Wurtz, S. Le Garrec CNRS - University Grenoble Alpes, <i>FRANCE</i> Multiphysics modeling for a new de- icing technology in aeronautics
3:55 PM- 4:15 PM	WO21-3	J. Chen, S. Yang Zhejiang University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> A Coupled Circuit-Ambipolar Diffusion Equation Model and its Solution Methodology for Insulated Gate Bipolar Transistors
4:15 PM- 4:35 PM	WO21-4	K. Muramatsu, Y. Gao, Y. Moriyamao, H. Dozono, T. Nishino, K. Miura Saga University, <i>JAPAN</i> Modeling of Leakage Magnetic Field of Electric Machines Using Blocks with Magnetizations for Design of Magnetically Shielded Room
4:35 PM- 4:55 PM	WO21-5	B. Silwal, P. Rasilo, A. Arkkio Aalto University, <i>FINLAND</i> Power Balance Approach to Study Electromagnetic Damping in Rotor Dynamics

ORAL SESSION **WO22**
Wednesday, November 16, 2016
3:30 PM- 5:00 PM

Static & Quasi Static Field IV
Antonios Kladas
(Concerto A)

- 3:15 PM- 3:35 PM WO22-1 A. Kamitani, T. Takayama, A. Saitoh, S. Ikuno
Yamagata University, *JAPAN*
Convergence-Property Improvement of GMRES in Shielding Current Analysis of Cracked Superconducting Film
- 3:35 PM- 3:55 PM WO22-2 F. Martin, A. Belahcen, P. Rasilo, A. Arkkio
Aalto University, *FINLAND*
Comparison of Two 2D Finite Element Magneto-Static Formulations for Modeling an Axially Laminated Synchronous Reluctance Machine
- 3:55 PM- 4:15 PM WO22-3 A. Ahagon, A. Kameari
Science Solutions International Laboratory, Inc., *JAPAN*
Proposal on A New Type of Second Order Edge Elements in Magnetostatic Field Analysis
- 4:15 PM- 4:35 PM WO22-4 A. Cosmai, L. Di Rienzo, S. Russenschuck
POLITECNICO DI MILANO - DEIB, *ITALY*
Post-Processing Magnetic Measurement Data of Accelerator Magnets by the Boundary Element Method
- 4:35 PM- 4:55 PM WO22-5 B. Ramdane, G. Meunier, G. Escamez, O. Chadebec, A. Badel, P. Tixador
Univ. Grenoble Alpes, G2Elab, *FRANCE*
3D Volume Integral Formulation Based on Facet Elements for the Computation of AC Losses in Superconductors

ORAL SESSION **WO23**
Wednesday, November 16, 2016
3:30 PM- 5:00 PM

Numerical Techniques IV
Piergiorgio Alotto
(Concerto B)

- 3:15 PM- 3:35 PM WO23-1 G. Wallinger, O. Biró
Graz University of Technology, *AUSTRIA*
Comparison of Two Formulations Taking Account of 3D Motion Induced Eddy Currents
- 3:35 PM- 3:55 PM WO23-2 A. Chiariello, F. Ledda, R. Martone, F. Pizzo
SUN - Second University of Naples, *ITALY*
Fast Identification Problems in 3D Iron Core Fusion Devices
- 3:55 PM- 4:15 PM WO23-3 Wu Jimin, Wang Xinyue, Xie Yuwei, Liu Jiangfan
Wuhan University, *CHINA, PEOPLE'S REPUBLIC OF*
Ionospheric Time-Delay of Satellite Signal Propagation Calculation Based on FDTD Method
- 4:15 PM- 4:35 PM WO23-4 A. Pels, R. Sabariego, S. Schöps
KU Leuven, *GERMANY*
Solving Multirate Partial Differential Equations using hat Finite Element basis functions
- 4:35 PM- 4:55 PM WO23-5 B. He, P. Zhou, C. Lu, N. Chen, D. Lin, B. Bork
Ansys, *UNITED STATES OF AMERICA*
Time Decomposition Method for the Transient Simulation of Low- Frequency Electromagnetics

POSTER SESSION **WO24**
Wednesday, November 16, 2016
3:30 PM- 5:00 PM

Optimization & Design IV
Zsolt Badics
(Concerto C)

- 3:15 PM- 3:35 PM WO24-1 D. Kim, B. Kang¹, D. Kim, K. Choi
Kyungpook National University, *KOREA, REPUBLIC OF (SOUTH KOREA)*
Enriched Performance Measure Approach for Efficient Reliability- Based Electromagnetic Designs

3:35 PM- 3:55 PM	WO24-2	G. Pyrialakos, N. Kantartzis, T. Ohtani, Y. Kanai, T. Tsiboukis Niiigata Institute of Technology, <i>GREECE</i> Waveguide Optimization for Dielectric Media Variation Based on the FDTD Method and the Monge-Kantorovich Mass Transfer Problem
3:55 PM- 4:15 PM	WO24-3	C. Da Costa Neves, Á. Ferreira Flores Filho, D. Dorrell Laboratory of Electrical Machines, Energy and Drives, Federal University of Rio Grande do Sul, <i>BRAZIL</i> Design, Modelling and Optimization of a Pseudo Direct Drive
4:15 PM- 4:35 PM	WO24-4	S. Ho, S. Yang, Y. Bai Zhejiang University, <i>CHINA, PEOPLE'S REPUBLIC OF</i> A Wind Driven Optimization Based Methodology for Robust Optimizations of Electromagnetic Devices under Interval Uncertainty
4:35 PM- 4:55 PM	WO24-5	J. Nshimiyimana, P. Dular, J. Gyselink, C. Geuzaine University of Liege, <i>BELGIUM</i> Relaxation Methods for Co-simulation of Finite Element and Circuit Solvers

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