Compumag 2011

12 - 15 July 2011, Sydney, Australia

18th International Conference on the Computation of Electromagnetic Fields

(www.compumag2011.com)

TECHNICAL PROGRAM

SPONSORS AND EXHIBITORS

University of Technology, Sydney (UTS)

International Compumag Society (ICS)

Griffith University

University of South Australia (UniSA)

HTS-110 Ltd., New Zealand

Computer Simulation Technology (CST)

LEAP Australia Pty Ltd

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MESSAGE FROM CONFERENCE CHAIRMEN

Since 1976, COMPUMAG has been an exciting and effective forum for researchers in the field of computational electromagnetics all over the world to present their research findings and exchange new ideas. Thanks to the enthusiasm and efforts of those researchers, the computational electromagnetics is playing a more and more important role in the design optimisation of novel electromagnetic devices and systems, and the software for numerical field analysis is becoming a booming industry.

The 18th International Conference on the Computation of Electromagnetic Fields (COMPUMAG2011) is to be held on 12-15 July 2011, in Sydney Convention and Exhibition Centre, Darling Harbour, Sydney, NSW, Australia. The aim of the Conference is to discuss recent developments and practical applications in the numerical computation of electromagnetic fields for engineers and physicists engaged in the design and analysis of electromagnetic devices. Reflecting the new trends and rapid progress in the field, authors from 35 countries or regions submitted 756 original and previously unpublished contributions, covering research topics including Static and Quasi-Static Fields, Wave Propagation, Electromagnetic Compatibility, Nano-Electromagnetic Computation and Applications, Bio-Electromagnetic Computation and Applications, Non-destructive Electromagnetic Inspection and Applications, Photonics, Material Modelling, Coupled Multi-physics Problems, Optimization and Design, Numerical Techniques, Software Methodology, Electric Machines and Drives, Devices and Applications, Education, and Benchmarking (TEAM). After a rigorous peer review process, the Editorial Board finally accepted 658 papers for oral and poster presentations to the conference.

On behalf of the organising committee and the editorial board, we sincerely welcome you to Sydney to attend the COMPUMAG2011 conference.

As one of the largest cities in the southern hemisphere, Sydney has a great deal to offer to its visitors. Besides the natural beauties and famous constructions, such as the Harbour Bridge and the Opera House, Sydney features a unique blend of multiple cultures. In Sydney, you can find people from almost anywhere in the world, and you can enjoy different cuisine styles, such as French, Italian, Japanese and Chinese.

The conference venue, the Sydney Convention and Exhibition Centre, is located in the beautiful and exciting Darling Harbour, in the heart of Sydney and the most popular destination for international visitors and locals alike. It is next to the central business district and has many exciting attractions and events every day.

Dear friends, let us work together to make COMPUMAG2011 a new success in the COMPUMAG history!

Thank you.

Prof. Jianguo Zhu
Chairman, COMPUMAG2011

Prof. Junwei Lu
Co-Chairman, COMPUMAG2011

Prof. Andrew Nafalski
Co-Chairman, COMPUMAG2011

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Trlep, Mladen
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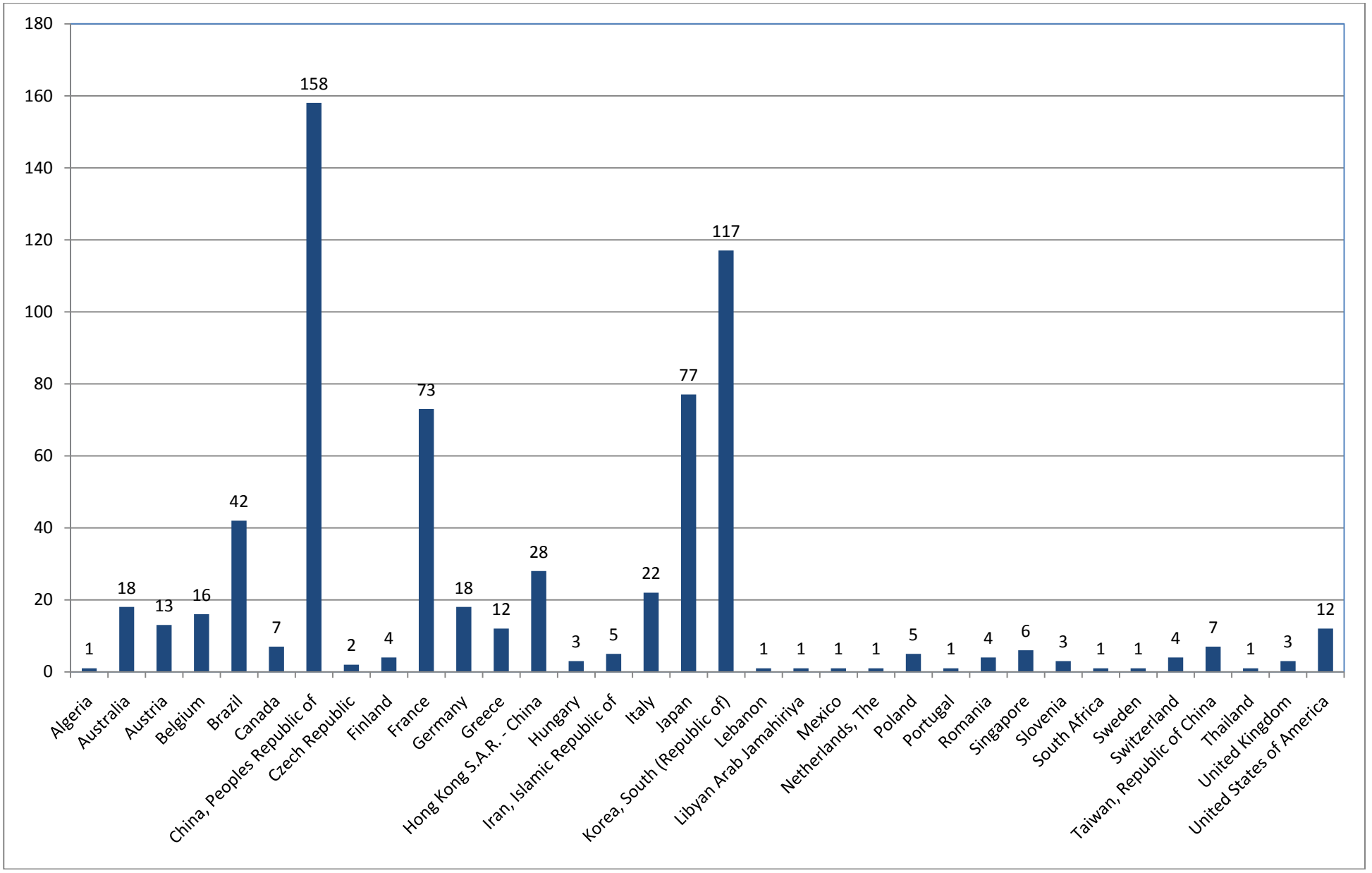
Tsuboi, Hajime
Tsukerman, Igor
Van Rienen, Ursula
Vandevelde, Lieven
Veszely, Gyula
Villone, Fabio
Vollaire, Christian
Wakao, Shinji
Wang, Shuhong
Wang, Yi
Wang, Youhua
Watanabe, Kota
Watterson, Peter
Webb, Jon
Wei, Xingchang
Wurtz, Frederic
Xie, Dexin
Xu, Guizhi
Yamazaki, Katsumi
Yan, Weili
Yang, Shiyou
Yatchev, Ivan
Yu, Haitao
Zhao, Weijiang
Zheng, Ping
Zhou, Ping
Zhu, Jianguo
Zou, Jibin

NUMBER OF ACCEPTED PAPERS BY COUNTRIES OR REGIONS

Country / Region	Number of Papers
Algeria	1
Australia	18
Austria	13
Belgium	16
Brazil	42
Canada	7
China, Peoples Republic of	158
Czech Republic	2
Finland	4
France	73
Germany	18
Greece	12
Hong Kong S.A.R. - China	28
Hungary	3
Iran, Islamic Republic of	5
Italy	22
Japan	77
Korea, South (Republic of)	117
Lebanon	1
Libyan Arab Jamahiriya	1
Mexico	1
Netherlands, The	1
Poland	5
Portugal	1
Romania	4
Singapore	6
Slovenia	3
South Africa	1
Sweden	1
Switzerland	4
Taiwan, Republic of China	7
Thailand	1
United Kingdom	3
United States of America	12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Finland
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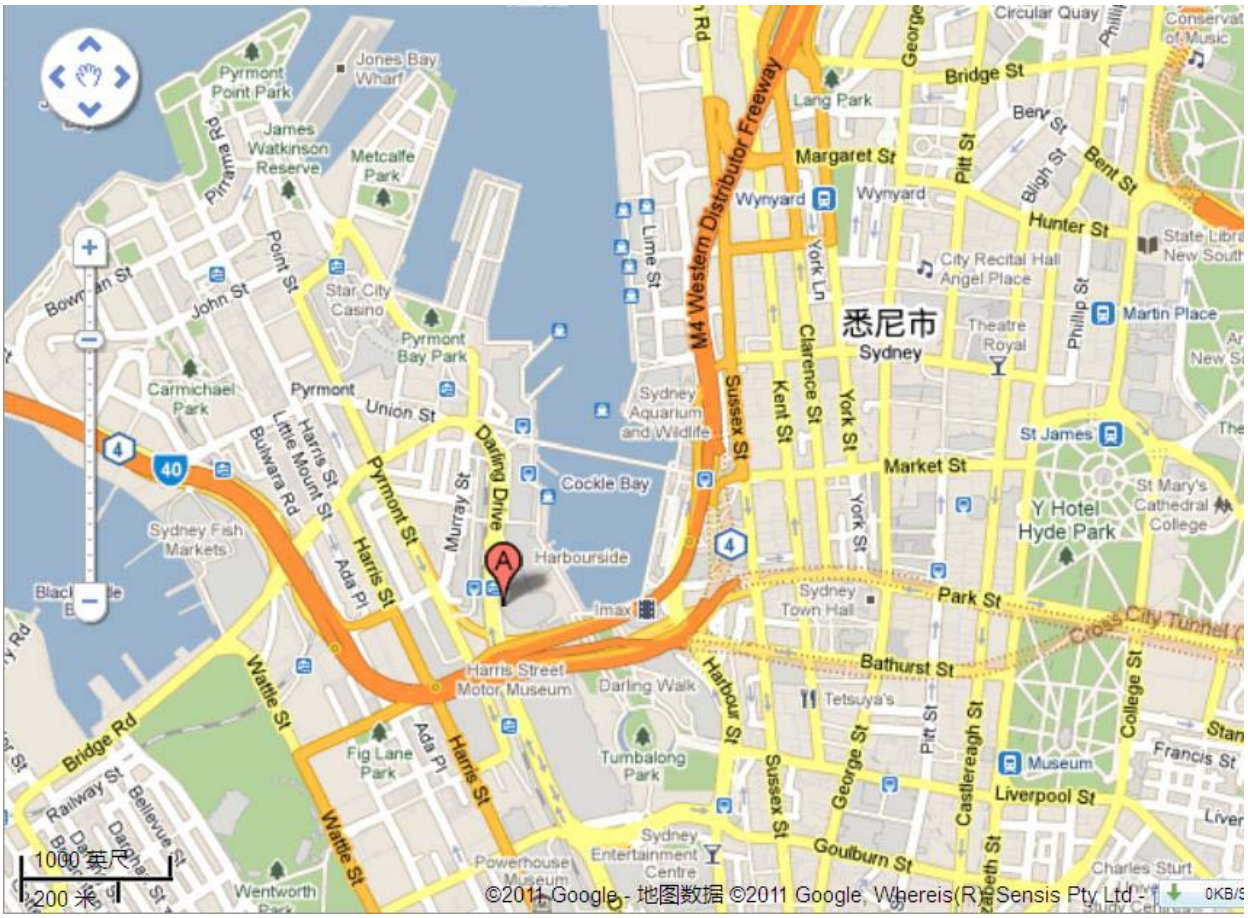
Greece
Hong Kong S.A.R. - China
Hungary
Iran, Islamic Republic of
Italy
Japan
Korea, South (Republic of)
Lebanon
Libyan Arab Jamahiriya
Mexico
Netherlands, The
Poland
Portugal
Romania
Singapore
Slovenia
South Africa
Sweden
Switzerland
Taiwan, Republic of China
Thailand
United Kingdom
United States of America

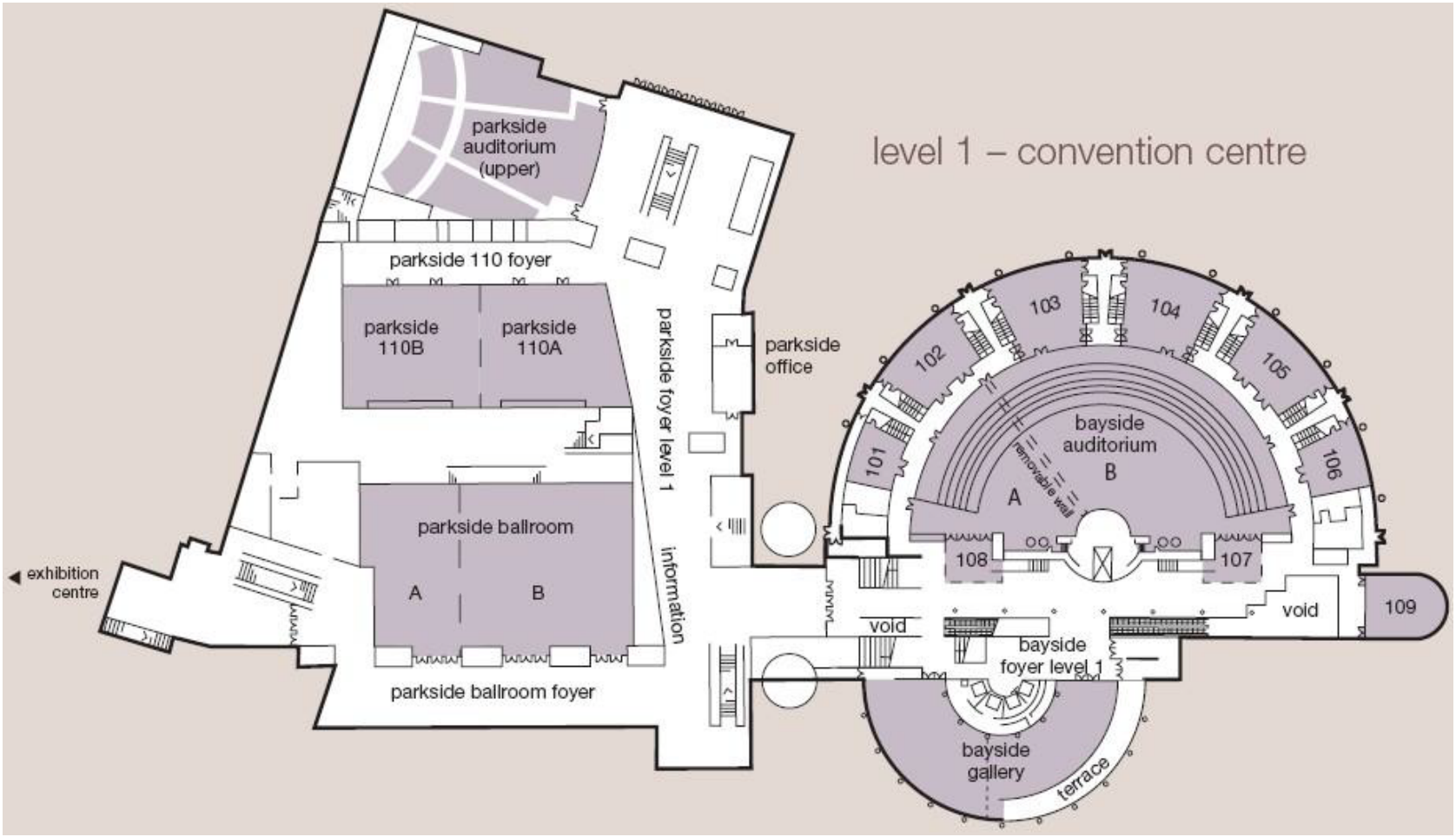
CONFERENCE VENUE AND FLOOR PLAN

Venue: Sydney Convention and Exhibition Centre
Darlingharbour, Sydney, NSW, Australia



Floor Plan:

- Welcome Reception – Bayside Terrace;
- Opening Ceremony, Plenary Oral Sessions, Sponsors' Workshops, and Closing Ceremony – Bayside Auditorium;
- Poster Sessions – Bayside Gallery
- Speaker Preparation Room – Room 108, Bayside



GENERAL INFORMATION

Registration Desk: Bayside Foyer Level 1
15:00 – 20:00, Monday 11 July 2011
8:00 – 17:00, Tuesday 12 – Thursday 14 July 2011
8:00 – 16:00, Friday 15 July 2011

Welcome Reception: Bayside Terrace
18:30 – 20:30, Monday 11 July 2011

Tea/Coffee and Lunch: Bayside Gallery
Tuesday 12 – Friday 15 July 2011

Conference Dinner: Sydney Showboat, King Street Wharf 5
(near Sydney Acquarium and Wild Life, Darling Harbour)
18:00 – 18:30 Boarding (finger food served during boarding)
18:30 Boat departing
18:30 – 18:50 Seating at tables
18:50 – 19:40 Three course dinner
19:40 – 20:10 Speeches
20:10 – 21:00 Performance

ICS Board Meeting: Bayside Room 107
18:00 – 21:00 Tuesday 12 July 2011
(ICS Board members only)

AUTHOR INFORMATION

Oral Presentation: Each oral presentation is allocated 30 minutes with 25 minutes for presentation and 5 minutes for questions. Presenters may use Bayside Room 108 for preparation of their presentations.

Poster Presentation: Each poster presentation will be allocated an area of 180 x 120 cm^2 (width x height). While the authors may use their own poster templates, we have placed two poster templates in portrait (90 x 120 cm^2) and landscape (120 x 90 cm^2) orientations on the conference website (www.compumag2011.com).
The duration of each poster session is one hour. Presenters are required to post their presentations five minutes before the session starts.

Attendance: The session chairs will check the presentations in each session, and the “no-show” papers will not be reviewed for possible journal publication in IEEE Transactions on Magnetics.

RITA TROWBRIDGE AWARD

– A prize to a young researcher in memory of Rita Trowbridge

Criteria and Conditions:

1. The prize will be presented to a young researcher, who is a participant of the conference and registered as a student.
2. The paper may be co-authored, but the young researcher must have contributed significantly, the evidence of this may be demonstrated for example by the fact that he/she is listed as the first author.
3. The paper must have been presented by the young researcher in either an oral or a poster session.

Procedure:

1. A small Awards Committee will be established before each COMPUMAG conference consisting of a chairman appointed by the ICS Board (must be a member of the ICS Board), the Chair (or one of the Co-chairs) of the COMPUMAG Editorial Board (or a person nominated by the Chair of the Editorial Board), a representative of the Local Organising Committee and two other members (could be, but do not have to be, ICS Board members) nominated by the ICS Board.
2. The Local Organising Committee of the COMPUMAG conference will prepare a list of eligible papers and will make this list available to the Awards Committee ahead of the conference. The scores of the referees will be shown on that list.
3. The chair of each conference session will be asked to nominate up to one (in exceptional circumstances two) authors for the award. A special form will be used for that purpose showing which papers are eligible. Such a form, showing all eligible papers in the session, will be prepared by the Conference Organisers. The session chair will be under no obligation to make a nomination.
4. The Awards Committee will meet briefly each day after the sessions to select the candidate papers from that particular day, taking account of the session chairs' nominations, reviewers' scores and their own observations during the day.
5. The Awards Committee will meet immediately after the final eligible paper has been presented on the last day and will make the decision. Up to 6 papers will be selected as to be 'commended' and authors will be issued certificates on behalf of the ICS Board. One of these authors (in exceptional circumstances two for a joint award) will be identified as the recipient(s) of the prize to a young researcher in memory of Rita Trowbridge.
6. The main prize(s) and the other commended papers will be announced at the closing session of COMPUMAG.

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COMPUMAG2011 PROGRAM OUTLINE

Time	Monday 11 July 2011	Tuesday 12 July 2011	Wednesday 13 July 2011	Thursday 14 July 2011	Friday 15 July 2011
9:00		Opening Ceremony	Oral Session (OB1) 2 orals	Oral Session (OC1) 2 orals	Oral Session (OD1) 2 orals
9:30		Oral Session (OA1) – 1 oral			
10:00		Poster Sessions (PA1-3)	Poster Sessions (PB1-3)	Poster Sessions (PC1-3)	Poster Sessions (PD1-3)
11:00		Morning Tea			
11:30		Poster Sessions (PA4-6)	Poster Session (PB4-6)	Poster Session (PC4-6)	Poster Session (PD4-6)
12:30		Lunch			
13:30		Oral Session (OA2) 2 orals	Oral Session (OB2) 2 orals	Oral Session (OC2) 2 orals	Oral Session (TEAM) (OD2) 2 orals
14:30		Poster Sessions (PA7-9)	Poster Sessions (PB7-9)	Poster Sessions (PC7-9)	Poster Sessions (PD7-9)
15:30		Afternoon Tea			Closing Ceremony
16:00 – 17:00		Poster Session (PA10-12)	Poster Session (PB10-12)	Poster Session (PC10-12)	
18:30 – 20:30	Welcome Reception			Conference Dinner	

SESSION CHAIRS

Session ID	Session Chair	Affiliation	Session Chair	Affiliation
OA1	**Mohammed, Osama**	Florida International University, USA	**Kost, Arnulf**	TU Berlin, Germany
OA2	**Bastos, João Pedro Assumpção**	GRUCAD/UFSC, Brazil	**Biro, O.**	Graz University of Technology, Austria
OB1	**Igarashi, H.**	Hokkaido University, Japan	**Pavo, Jozsef**	Budapest University of Technology and Economics, Hungary
OB2	**Xie, Dexin**	Shenyang University of Technology, China	**Koh, C.S.**	Chungbuk National University, Korea
OC1	**Lowther, David**	McGill University, Canada		
OC2	**Sykulski, Jan**	University of Southampton, UK		
OD1	**Hameyer, Kay**	RWTH Aachen University, Germany	**Russenschuck, Stephan**	CERN, Switzerland
OD2	**Alotto, Piergiorgio**	Università di Padova, Italy	**Dular, Patrick**	University of Liege, Belgium
PA1	**De Gersem, Herbert**	Katholieke Universiteit Leuven, Belgium	**Clemens, Markus**	Bergische Universitaet Wuppertal, Germany
PA2	**Perrussel, Ronan**	CNRS, France		
PA3	**Phyu, Hla Nu**	Data Storage Institute, Singapore		
PA4	**Fu, Weinong**	The Hong Kong Polytechnic University, China		
PA5	**Gyimothy, Szabolcs**	Budapest University of Technology and Economics, Hungary		
PA6	**Antonopoulos, Christos**	Aristotle University of Thessaloniki, Greece		
PA7	**Wang, Youhua**	Hebei University of Technology, China		
PA8	**Zheng, Ping**	Harbin Institute of Technology, China	**Ferreira da Luz, Mauricio Valencia**	Federal University of Santa Catarina, Brazil
PA9	**Takahashi, Yasuhito**	Doshisha University, Japan	**Meunier, Gerard**	G2Elab, France

PA10	**Mazauric, Vincent**	Schneider Electric, France		
PA11	**Gyselinck, Johan**	Université Libre de Bruxelles (ULB), Belgium		
PA12	**Nafalski, Andrew**	University of South Australia, Australia		
PB1	**Chen, Zhenmao**	Xi'an Jiaotong University, People Republic of China	**Dughiero, Fabrizio**	University of Padova, Italy
PB2	**Jung, H.K.**	Seoul National University, Korea		
PB3	**Ioan, Daniel**	Politehnica University of Bucharest, Romania	**Byun, Jin-Kyu**	Soongsil University, Korea
PB4	**Wang, Shuhong**	Xi'an Jiaotong University, China		
PB5	**Freschi, Fabio**	Politecnico di Torino, Italy		
PB6	**Mohammed, Osama**	Florida International University, USA	**Li, Lin**	North China Electric Power University, China
PB7	**Kim, Hyeong-Seok**	Chung-Ang University, Korea		
PB8	**Salon, Sheppard**	RPI, USA	**Lu, Junwei**	Griffith University, Australia
PB9	**Yang, Shiyou**	Zhejiang University, China	**Trevisan, Francesco**	Universita' di Udine, Italy
PB10	**Lebensztajn, Luiz**	Escola Politécnica da Universidade de São Paulo, Brazil		
PB11	**Geuzaine, Christophe**	Université de Liège, Belgium	**Feliziani, Mauro**	University of L'Aquila, Italy
PB12	**Rekanos, Ioannis T.**	Aristotle University of Thessaloniki, Greece		
PC1	**Watanabe, Kota**	Hokkaido University, Japan		
PC2	**Gotoh, Yuji**	Oita University, Japan		
PC3	**Noguchi, So**	Hokkaido University, Japan		
PC4	**Zhou, Ping**	ANSYS, USA		
PC5	**Sheng, Xin-Qing**	Beijing Institue of Technology, China		

PC6	**Muramatsu, Kazuhiro**	Saga University, Japan		
PC7	**Martone, Raffaele**	Seconda Università di Napoli, Italy		
PC8	**Trlep, Mladen**	University of Maribor, Slovenia	**Schlensok, Christoph**	Bosch Rexroth Industrial Applications, Germany
PC9	**Ren, Zhuoxiang**	University of Pierre & Marie Curie, France	**Nicolas, Laurent**	Ampere lab, France
PC10	**Xia, Dong**	Chinese Academy of Sciences, China	**Schmidt, Erich**	Vienna University of Technology, Austria
PC11	**Ho, Siu Lau**	Hong Kong Polytechnic University, China		
PC12	**Wakao, Shinji**	Waseda University, Japan	**Choi, Charles T. M.**	National Chiao Tung University, ROC
PD1	**Cheng, Zhiguang**	Baoding Tianwei Group Co., Ltd, China	**Sabariego, Ruth V.**	University of Liège, Belgium
PD2	**Piriou, Francis**	University Lille 1, France		
PD3	**Ni, Guangzheng**	Zhejiang University, China	**Yatchev, Ivan**	Technical University of Sofia, Bulgaria
PD4	**Todaka, Takashi**	Oita University, Japan	**Mastuo, Tetsuji**	Kyoto University, Japan
PD5	**Nabeta, Silvio**	Escola Politécnica USP, Brazil		
PD6	**Arjona Lopez, Marco A**	Instituto Tecnologico de la Laguna, Mexico		
PD7	**Sadowski, Nelson**	GRUCAD/UFSC, Brazil	**Kawase, Yoshihiro**	Gifu University, Japan
PD8	**Sartori, Carlos**	Escola Politécnica da Universidade de São Paulo, Brazil		
PD9	**Delinchant,** B**enoit**	CNRS, France	**Martone, Raffaele**	Seconda Università di Napoli, Italy

SESSIONS

TECHNICAL PROGRAM

Tuesday 12 July 2011

Opening Ceremony

09:00-09:25 Bayside Auditorium A
Welcome from Prof. Jianguo Zhu,
Prof. Arnulf Kost

Session OA1: Education

09:30-10:00 Bayside Auditorium A

OA1.1 (ID 596)
Establishing a Web Based Archive of Papers in Computational Electromagnetics
Trowbridge, Charles William (1); Sykulski, Jan K (2)
1: ICS, United Kingdom; 2: University of Southampton, United Kingdom

Session PA1: Numerical Techniques (I) and Education

10:00-11:00 – Bayside Gallery

PA1.1 (ID 127)
A Preconditioner Construction for Large Scale 3D Magnetostatic Problems
Kanayama, Hiroshi (1); Ogino, Masao (1); Sugimoto, Shin-ichiro (2); Enami, Kakeru (1); Komalasari, Endah (1)
1: Kyushu University, Japan; 2: The University of Tokyo, Japan

PA1.2 (ID 129)
Domain Decomposition and Its Applications in Time-Stepped Nonlinear Finite Element Analysis
Lin, Dingsheng; Zhou, Ping; He, Bo; Lambert, Nancy
Ansys Inc., United States of America

PA1.3 (ID 136)
Application of Non-Overlapping Mortar Finite Element Method in Eddy Current Problem Involving Movement
Shoubao, Liu
Wuhan University, China, Peoples Republic of

PA1.4 (ID 151)
Comparison of Multiscale Methods for the Analysis of Fine Periodic Electromagnetic Structures
Bottauscio, Oriano; Manzin, Alessandra
Istituto Nazionale di Ricerca Metrologica, Italy

PA1.5 (ID 167)
An Integrated Scheme for Machine Hysteresis Loss Evaluations based on Iterative Magnetic Equivalent Circuits and Emulated Epstein Frame Tests
Liu, Cheng-Tsung (1); Lin, Hsiu-Ying (1); Hwang, Chang-Chou (2)

1: National Sun Yat-Sen University, Taiwan, Republic of China; 2: Feng Chia University, Taiwan, Republic of China

PA1.6 (ID 169)
Optimal Design of a Permanent Magnet Linear Synchronous Motor with Low Cogging Force
Hwang, Chang-Chou (1); Li, Ping-Lun (2); Liu, Cheng-Tsung (3)
1: Department of Electrical Engineering, Feng Chia University, Taiwan, Republic of China; 2: Ph.D. Program in Electrical and Communications Engineering, Feng Chia University, Taiwan, Republic of China; 3: Department of Electrical Engineering, National Sun Yat-sen University, Taiwan, Republic of China

PA1.8 (ID 195)
Application of Local Point Interpolation Method to Electromagnetic Problems with Material Discontinuities using a New Visibility Criterion
Lima, Naísses Zoia (1); Fonseca, Alexandre Ramos (2); Mesquita, Renato Cardoso (1)
1: Universidade Federal de Minas Gerais, Brazil; 2: Universidade Federal dos Vales do Jequitinhonha e Mucuri

PA1.9 (ID 205)
Non-Conforming Sliding Interfaces in 3D Finite Element Analysis of Electrical Machines with Motion
Lange, Enno; Henrotte, François; Hameyer, Kay
Institute of Electrical Machines, RWTH Aachen University

PA1.10 (ID 214)
Fundamental Characteristics of 2D Equivalent B-H Method
Fujisaki, Keisuke (1,2)
1: Nippon Steel Corporation, Japan; 2: Toyota Technological Institute, Japan

PA1.11 (ID 225)
Efficient Stochastic FDTD Method for EM Simulation
Shen, Jianxiang; Gao, Cong; Chen, Ji
University of Houston, United States of America

PA1.12 (ID 235)
Numerical Evaluation of Field Profile in an Undulator with Bulk HTS
Tsuchimoto, Masanori
Hokkaido Institute of Technology, Japan

PA1.13 (ID 258)
A Local Discontinuous Galerkin Method for Numerical Computation of Waveguide Eigenvalue Problems in Polar Coordinates
Ho, S. L.; Zhao, Yanpu; Fu, W. N.
The Hong Kong Polytechnic University, China, Peoples Republic of

PA1.14 (ID 261)
Parallel Computing of 3-D Eddy Current Analysis with A-phi Method for Rotating Machines
Nakano, Tomohito (1); Kawase, Yoshihiro (1); Yamaguchi, Tadashi (1); Nakamura, Masanori (2)
1: Gifu University, Japan; 2: Toyo Denki Seizo K.K., Japan

PA1.15 (ID 266)
A Circuit Parameter Extraction Algorithm of Eddy-Current Magnetic Field Based on Circuit-Field Coupling Method
Niu, Shuangxia (1); Ho, S. L. (1); Li, H. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: The Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

PA1.16 (ID 272)
High Performance Computation and Interactive Visualization of Electromagnetics for Engineering Education Program
Lu, Junwei
Griffith University, Australia

PA1.17 (ID 532)
Real-time Visualization System of Magnetic Field Utilizing Augmented Reality Technology for Education
Matsutomo, Shinya (1); Miyauchi, Takenori (1); Noguchi, So (2); Yamashita, Hideo (3)
1: Niihama National College of Technology, Japan; 2: Graduate School of Information Science and Technology, Hokkaido Univ., Japan; 3: Graduate School of Engineering, Hiroshima Institute of Technology, Japan

Session PA2: Static Fields and Quasi-Static Fields (I)

10:00-11:00 – Bayside Gallery

PA2.1 (ID 111)
Solving Transient Eddy Current Problems with Radial Basis Function Method in Frequency Domain
Zhang, Huaiqing; Fu, Zhihong; Wang, Quandi
Chongqing University, China, Peoples Republic of

PA2.2 (ID 117)
A Gauge Transformation of Electromagnetic Potentials for Decomposition of Harmonic Fields
Yamazaki, Katsumi; Kuramochi, Satoshi
Chiba Institute of Technology, Japan

PA2.3 (ID 124)
Finite Element Processing Methods to Peripheral Flux Leakage in Axial Field Flux-Switching PM Machines
Lin, Mingyao (1); Zhang, Lei (2); Zhao, Xuming (1); Li, Xin (1); Zhu, Z.Q. (3)
1: Southeast University, Nanjing, People's Republic of China; 2: State grid electric power research institute, Nanjing, P.R. China; 3: University of Sheffield, Sheffield S1 3JD, U.K.

PA2.4 (ID 139)
Behaviour of Gradient Coils for MRI Designed with Minimised Maximum Current Density
Poole, Michael Stephen (1); Sanchez Lopez, Hector (1); Crozier, Stuart (1); While, Peter (2); Forbes, Larry (2)
1: University of Queensland, Australia; 2: University of Tasmania, Australia

PA2.5 (ID 140)
Fast Eddy Current Simulation in Thick Split Cylinders of Finite Length Induced by Coils of Arbitrary Geometry

Sanchez-Lopez, Hector; Poole, Michael; Crozier, Stuart
The University of Queensland, Australia

PA2.6 (ID 142)
Dispersive FDTD Modeling of In-Situ Electric Fields in Adults and Children Due to Conductor Contact of Charged Human
Hirata, Akimasa; Koyama, Teruyoshi; Fujiwara, Osamu
Nagoya Institute of Technology, Japan

PA2.7 (ID 146)
Comparison of Analytical Models for the Analysis and Design of Series Double Excitation Synchronous Machines
Tiegna, Huguette; Amara, Yacine; Barakat, Georges
GREAH (University of Le Havre), France

PA2.8 (ID 150)
Magnetic Field of Helical Conductors with Finite Length
Machczynski, Wojciech (1); Budnik, Krzysztof (1); Haubrich, Hans-Jurgen (2)
1: Poznan University of Technology, Poland; 2: RWTH Aachen, Germany

PA2.9 (ID 155)
Fast Computation Method for Solving the Power Frequency Electric Field in Substation
Zhang, Zhanlong (1); Zhu, Zhenhai (2); Xiao, Dongping (3)
1: Chongqing University, China, Peoples Republic of; 2: Chongqing University, China, Peoples Republic of; 3: Chongqing University, China, Peoples Republic of

PA2.10 (ID 164)
FDTD Derivation of Effective Resistance for Grounded Humans
Yanase, Kazuya; Hirata, Akimasa
Nagoya Institute of Technology, Japan

PA2.12 (ID 171)
Thickness and Conductivity Analysis of Molybdenum Thin Film in CIGS Solar Cells Using a Resonant Electromagnetic Testing Method
Pan, Yen-Lin; Tai, Cheng-Chi
National Cheng Kung University, Taiwan, Republic of China

PA2.13 (ID 179)
Multi-Weight-Function Indirect Boundary Element Method for Designing Shielding Cover for HVDC Converter System
Liu, Shili
North China Electric Power University, China, Peoples Republic of

PA2.14 (ID 183)
Appearance of Spotted Design by Magnetic Anisotropy Numerical Calculation
Fujisaki, Keisuke (1,2)
1: Nippon Steel Corporation, Japan; 2: Toyota Technological institute, Japan

PA2.15 (ID 184)
Modelling a Superconducting Current Limiter using a Modified Broyden's Method
Oleksiejuk, Boguslaw (1); Nafalski, Andrew (2)
1: Lublin University of Technology, Poland; 2: University of South Australia, Australia

Session PA3: Electric Machines and Drives (I)

10:00-11:00 – Baysie Gallery

PA3.1 (ID 108)
Examination of Non-contacting Measurement Method of Generation Current inside Polymer Electrolyte Fuel Cell using Heuristic Search
Gotoh, Yuji (1); Tanaka, Takayuki (1); Takahashi, Norio (2)
1: Oita University, Japan; 2: Okayama University

PA3.2 (ID 113)
Evaluation of a Simple Lamination Stacking Method for the Teeth of an Axial Flux Permanent-Magnet Synchronous Machine with Concentrated Stator Windings
Vansompel, Hendrik (1); Sergeant, Peter (1,2); Dupré, Luc (1); Van den Bossche, Alex (1)
1: Department of Electrical Energy, Systems & Automation, Ghent University; 2: Department of Electrotechnology, Faculty of Applied Engineering Sciences, University College Ghent

PA3.3 (ID 115)
Characteristics Analysis of Large High Speed Induction Motors Using 3-D Finite Element Method
Yamazaki, Katsumi (1); Kuramochi, Satoshi (1); Fukushima, Noriaki (2); Yamada, Shinichiro (2); Tada, Shin (2)
1: Chiba Institute of Technology, Japan; 2: Toshiba Mitsubishi-Electric Industrial Systems Corporation

PA3.4 (ID 125)
Analysis of VR Stepper Motor Dynamics Considering 3D FE Model with Core Lamination and Effect of Minimum Energy Control on Steel Loss
Stępień, Slawomir Jan; Bernat, Jakub
Poznan University of Technology, Poland

PA3.5 (ID 130)
Analytical Prediction of Cogging Torque for Spoke Type Permanent Magnet Machines
Lin, Dingsheng; Zhou, Ping
Ansys Inc., United States of America

PA3.6 (ID 134)
Performances Computation for a Dual-Channel Switched Reluctance Generator Operation under Single- and Dual-Channel Modes
Ding, Wen
Xi'an jiaotong University, China, Peoples Republic of

PA3.7 (ID 137)
Induction Coil Gun Field-Circuit Analysis Based on Current Filament Method and Non-Overlapping Mortar Finite Element Method
Shoubao, Liu
Wuhan University, China, Peoples Republic of

PA3.8 (ID 143)
Eddy-Current Loss Modeling for Induction Motor with a Form-Wound Stator Winding
Huynh, Van Khang; Arkkio, Antero
Aalto University, Finland

PA3.9 (ID 144)
Magnetic Equivalent Circuit for Saturation Modeling of a Deep-bar Induction Motor
Huynh, Van Khang; Hellman, Hannu-Pekka; Arkkio, Antero
Aalto University, Finland

PA3.10 (ID 149)
Core Loss Modeling for Permanent Magnet Motor Based on Flux Variation Locus and Finite Element Method
Huang, Yunkai (1); Dong, Jianning (1); Lin, Heyun (1); Guo, Youguang (2); Zhu, Jianguo (2)
1: School of Electrical Engineering, Southeast University, Nanjing, China; 2: School of Electrical, Mechanical and Mechatronic Systems, University of Technology Sydney, Australia

PA3.11 (ID 156)
Magnetic Field in a Transverse- and Axial-flux Permanent-Magnet Synchronous Generator from 3-D FEA
Chan, Tze-Fun (1); Wang, Weimin (1); Lai, Loi Lei (2)
1: The Hong Kong Polytechnic University, China, Peoples Republic of; 2: City University London, UK

PA3.12 (ID 158)
Mechanical Stress Reduction of Rotor Core of Interior Permanent Magnet Synchronous Motor
Jung, Jae-Woo (1); Hong, Jung-Pyo (1); Jeon, Seong-Min (2)
1: Hanyang University, Korea, South (Republic of); 2: S&T Daewoo, Korea, South (Republic of)

PA3.13 (ID 159)
Modeling of Switched Reluctance Motor for Inter-Turn Winding Short-Circuit Fault
Chen, Hao (1); Lu, Shengli (1); Chen, Zhe (2)
1: China University of Mining & Technology, China, Peoples Republic of; 2: Institute of Energy Technology, Aalborg University, Aalborg 9220, Denmark

PA3.14 (ID 165)
A Dynamic Cosimulation Approach for a Switched Reluctance Starter/Generator Using Maxwell SPICE and Simplorer
Ding, Wen
Xi'an jiaotong University, China, Peoples Republic of

PA3.15 (ID 173)
The Analysis of a Novel Transverse-flux Linear Oscillating Actuator
Lu, Qinfen; Yu, Minghu; Ye, Yunyue; Fang, Youtong
Zhejiang University, China, Peoples Republic of

PA3.16 (ID 222)
Conductive EMI Noise Analysis for Switched Reluctance Motor Drive
Chen, Hao; Zhao, Y; Qiu, X
China University of Mining & Technology, China, Peoples Republic of

PA3.17 (ID 175)
Analytical Calculation of Flux-Linkage Characteristics of Switched Reluctance Linear Generator
Chen, Hao; Lu, S; Zhou, X; Sun, C
China University of Mining & Technology, China, Peoples Republic o

Session PA4: Devices and Applications (I)

11:30-12:30 – Bayside Gallery

PA4.1 (ID 110)
The Torque and Damping Characteristics Analysis of the Non-contact Permanent Magnet Driving Device for Artificial Heart
Xia, Dong
Chinese Academy of Sciences, China, Peoples Republic of

PA4.2 (ID 119)
An internal Quad-band Printed Monopole Antenna for Oval-Shaped Mobile Phones
Zhao, Anping
Nokia Research Center, China, Peoples Republic of

PA4.3 (ID 123)
Transmission Torque Analysis of a Novel Magnetic Planetary Gear Employing 3-D FEM
Niguchi, Noboru; Hirata, Katsuhiro
Osaka University, Japan

PA4.4 (ID 188)
Modeling and Design of Permanent Magnet Vibration-to-Electrical Power Generator's Induction Coil
Wang, Zhihua; Wang, Bowen; Zhang, Na; Wang, Li; Yan, Weili; Wang, Youhua
Hebei University of Technology, China, Peoples Republic of

PA4.5 (ID 203)
First Approach for the Modelling of the Electrical Field surrounding a Piezoelectric Transformer in view of Plasma Generation
Nadal, Clement; Pigache, Francois; Lefevre, Yvan
Université de Toulouse, CNRS, France

PA4.6 (ID 212)
A New Inductor for Transverse Flux Induction Heating
Wang, Youhua; Yang, Xiaoguang; Pang, Lingling
Hebei University of Technology, China, Peoples Republic of

PA4.7 (ID 218)
Design and Analysis of Multi-Coils Induction Cooker for Thermal Performance Improvement
Meng, Lichan; Cheng, Ka Wai Eric; Ho, Siu Lau; Fu, Wei Nong
The Hong Kong Polytechnic University, China, Peoples Republic of

PA4.8 (ID 223)
Core Tester Iron Losses Segregation by Finite Element Modeling
Sadowski, Nelson (1); Schlegel, Jean Paul (1); Batistela, Nelson Jhoe (1); Iamamura, Bruno (1); Bastos, João Pedro (1); Espindola, Aleandro Amauri (2)
1: GRUCAD/UFSC, Brazil; 2: EMBRACO-WHIRPOOL, Brazil

PA4.9 (ID 229)
Investigation of a Novel Integrated Magnetic System using Finite Element Method in Comparison to Conventional Integrated Magnetic Devices
Stegen, Sascha; Lu, Junwei

Griffith University, Australia

PA4.10 (ID 232)
Analysis of Temperature Distribution in Power Converter for Switched Reluctance Motor Drive
Chen, Hao; Xu, Y; Huang, F
China University of Mining & Technology, China, Peoples Republic of

PA4.11 (ID 262)
A Parameters Optimization Method of High Frequency Transformers Used in the On-Board Charging System of Electric Vehicle
Water, Wayne; Lu, Junwei
Griffith University, Australia

PA4.12 (ID 271)
Examination of Eddy Current in Laminated Core without Insulation
Takahashi, Norio (1); Akagi, Akira (1); Miyagi, Daisuke (1); Nakano, Masanori (1); Doi, Yuhito (2)
1: Okayama University, Japan; 2: Shin-Etsu Chemical Co.,Ltd,

PA4.13 (ID 278)
Research on Simulation and Experiment of the Electromagnetically Induced Acoustic Emission Based on High-Current Loading
Zhang, Chuang; Liu, Suzhen; Yang, Qingxin; Jin, Liang; Wang, Youhua; Xu, Guizhi
Hebei University of Technology, China, Peoples Republic of

PA4.14 (ID 309)
An In-wheel Axial-flux-modulated Machine for Hybrid Electric Vehicles
Ho, S. L. (1); *Niu, Shuangxia* (1); *Fu, W. N.* (1); *Zhu, Jianguo* (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA4.15 (ID 330)
Power Frequency Electromagnetic Environment for Studying Bio-effects
Geng, Duyan (1); Yang, Xuewen (2); Xu, Guizhi (1); Wang, Youhua (1); Yan, Weili (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong

Session PA5: Numerical Techniques (II)

11:30-12:30 – Bayside Gallery

PA5.1 (ID 267)
Calculation of Single Conductor Capacitance by Solving the Electrostatic Field
Chen, Yong; Xiang, Hongjun; Yuan, Jiansheng
Tsinghua University, China, Peoples Republic of

PA5.2 (ID 276)
Precise Magnetic Field Modeling Techniques of Rotation Problems Using Transient Finite-Element Method
Ho, S. L. (1); Li, H. L. (1); Niu, Shuangxia (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: The Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA5.3 (ID 277)
A Mesh-insensitive Methodology for Magnetic Force Computation in Finite-element Analysis
Ho, S. L. (1); Niu, Shuangxia (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA5.4 (ID 319)
A Concave FE-BI-MLFMA for Scattering by a Large Body with Nonuniform Deep Cavities
Sheng, Xin-Qing; Yang, Ming-Lin; Pan, Xiao-Min; Pi, Wei-Chao
Beijing Institue of Technology, China, Peoples Republic of

PA5.5 (ID 320)
Hybrid h- and p-Type Multiplicative Schwarz (h-p-MUS) Preconditioned Algorithm of Higher-Order FE-BI-MLFMA for 3D Scattering
Sheng, Xin-Qing; Yang, Ming-Lin
Beijing Institue of Technology, China, Peoples Republic of

PA5.6 (ID 341)
Efficient Iterative Integral Technique for Computation of Fields in Electric Machines with Rotor Eccentricity
Ciric, Ioan R. (1); Hantila, Florea I. (2); Maricaru, Mihai (2); Marinescu, Stelian (3)
1: The University of Manitoba, Canada; 2: Politehnica University of Bucharest, Romania; 3: Research Institute for Electrical Engineering, Romania

PA5.7 (ID 346)
Analysis of Ion Flow Field of UHV/EHV AC Transmission Lines
Yin, Han; Zhang, Bo; He, Jinliang; Zeng, Rong; Li, Wei
Tsinghua University, China, Peoples Republic of

PA5.8 (ID 356)
An Efficient FEM and FVM Coupled Algorithm for Eddy Current Analysis in Electromagnetic Devices with High-Speed Moving Conductors
Ho, S. L. (1); Chen, Ningning (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: The HK Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA5.9 (ID 364)
Frequency Response Analysis Considering Non-linearity of Complex Magnetic Permeability employing 3-D FEM
Yang, SeungHo (1); Hirata, Katsuhiro (1); Ota, Tomohiro (2); Kawase, Yoshihiro (3)
1: Osaka University, Japan; 2: Panasonic Electric Works, Ltd., Japan; 3: Gifu University, Japan

PA5.10 (ID 365)
Finding a Crack Position in a Material on the Basis of Non-Destructive Testing with Eddy Currents
Jesenik, Marko; Goričan, Viktor; Hamler, Anton; Trlep, Mladen
Faculty of Electrical Engineering and Computer Science, Slovenia

PA5.11 (ID 387)
Application of Multi-stage Diagonally-implicit Runge-Kutta Algorithm to Transient Magnetic Field Computation Using Finite Element Method

Li, H. L.; Ho, S. L.; Fu, Weinong
The Hong Kong Polytechnic University, Hong Kong S.A.R. - China

PA5.12 (ID 392)
Development of a Very Fast Simulator for Pulsed Eddy Current Testing Signals
Xie, Shejuan (1); Chen, Zhenmao (2); Takagi, Toshiyuki (1); Uchimoto, Tetsuya (1)
1: Institute of Fluid Science, Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai 980-8577, Japan; 2: MOE Key Laboratory for Strength and Vibration, Xi'an Jiaotong University, Xi'an, 710049, China

PA5.13 (ID 403)
Speed-up of Nonlinear Electromagnetic Field Analysis using Fixed-Point Method
Takahashi, Norio (1); Shimomura, Kosuke (1); Miyagi, Daisuke (1); Kaimori, Horoyuki (2)
1: Okayama University, Japan; 2: Science Solutions International Laboratory, Inc., Japan

PA5.14 (ID 408)
A Novel Electrical Impedance Tomography System using Rectangular Electrodes Array
He, Wei; Li, Bing; Xu, Zheng; Yang, Fan; Ju, Kang; Luo, Haijun
State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, Chongqing 400030, China

PA5.15 (ID 427)
Computing Eddy Currents in Permanent Magnet Synchronous Machines by a 3D Finite Element Model without Motion
Mohr, Martin; Bíró, Oszkár; Stermecki, Andrej
Institute for Fundamentals and Theory in Electrical Engineering, Graz University of Technology, Austria

Session PA6: Static Fields and Quasi-Static Fields (II)

11:30-12:30 – Bayside Gallery

PA6.1 (ID 192)
Magnetic Field Mitigation Shielding of Underground Power Cables
Machado, Vitor Maló
Center for Innovation in Electrical and Energy Engineering, Portugal

PA6.2 (ID 207)
Numerical Simulation of Shielding Current Density in High-Temperature Superconducting Film: Influence of Film Edge on Permanent Magnet Method
Kamitani, Atsushi; Takayama, Teruou
Yamagata University, Japan

PA6.3 (ID 211)
Multi-dimensional Support Vector Regression in Electrical Capacitance Tomography
Yang, Xiaoguang; Li, Jianwei; Wang, Youhua
Hebei University of Technology, China, Peoples Republic of

PA6.4 (ID 215)
Study of Numerical Method for Magnetic Shielding Problem
Takahashi, Norio (1); Ujigawa, Satoshi (2); Shinnoh, Toshifumi (2); Miyagi, Daisuke (1)
1: Okayama University, Japan; 2: Kajima Corp., Japan

PA6.5 (ID 226)
Magnetic Tracking inside Conducting Bores for Radiotherapy Tumor Localization Systems
Xiong, Zubiao (1); Feng, Shi (1); McGary, John (2); Chen, Ji (1)
1: University of Houston, United States of America; 2: Baylor College of Medicine, United States of America

PA6.6 (ID 230)
Vector Magnetic Characteristic Analysis of a Surface Permanent Magnet Motor by means of Complex E&S Modeling
Zeze, Shingo; Todaka, Takashi; Enokizono, Masato
Oita University, Japan

PA6.7 (ID 237)
New Laminated-Structure Flux Switching Permanent Magnet Machine for Plug-in Hybrid Electrical Vehicle with Novel Configuration
Xu, Wei; Zhu, Jianguo; Zhang, Yongchang; Guo, Youguang
University of Technology Sydney, Australia

PA6.8 (ID 241)
Novel Simplified Time-Periodic Explicit Error Correction Method for Steady-State Analysis of Magnetic Field Including Direct Current Component
Katagiri, Hirokatsu; Kawase, Yoshihiro; Yamaguchi, Tadashi
Gifu University, Japan

PA6.9 (ID 243)
Geometric Multigrid with Plane Smoothing for Thin Elements in 3-D Magnetostatic Field Calculation
Chen, Chao; Bíró, Oszkár
Graz University of Technology, Austria

PA6.10 (ID 249)
Characteristics Analysis of the Square Laminated Core under DC-biased Magnetization by the Fixed-point Harmonic-Balanced FEM
Zhao, Xiaojun (1); Li, Lin (1); Lu, Junwei (2); Cheng, Zhiguang (3); Lu, Tiebing (1)
1: North China Electric Power University, China, Peoples Republic of; 2: Griffith University, Australia; 3: R&D Center of Baoding Tianwei Group, China, Peoples Republic of

PA6.11 (ID 250)
Simulation and Measurement of Iron Loss and Flux inside Silicon Steel Lamination under DC Biasing
Zhao, Zhigang (1); Liu, Fugui (1); Wang Youhua (1); Cheng, Zhiguang (2); Yan, Weili (1)
1: Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, China, Peoples Republic of; 2: R & D Center, Baoding Tianwei Group Co., LTD

PA6.12 (ID 259)
Dynamic Characteristics Analysis of Circuit Breaker with Oil Dashpot Employing Improved Multi-Mesh Modification Method
Toyama, Shuhei; Suzuki, Satoshi; Kawase, Yoshihiro; Yamaguchi, Tadashi; Hirata, Katuhiro; Ota, Tomohiro
Gifu University, Japan

PA6.13 (ID 263)
Reluctance Network Treatment of Skin and Proximity Effects in Multi-conductor Transmission Lines
Bormann, Dierk (1,2); Tavakoli, Hanif (1)
1: Royal Institute of Technology (KTH), Stockholm, Sweden; 2: ABB Corporate Research, Västerås, Sweden

PA6.14 (ID 287)
Comparison Study of Finite Element Methods Dealing with Floating Conductors in Electric Field
Fu, W. N. (1); Ho, S. L. (1); Niu, Shuangxia (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA6.15 (ID 288)
FEM-Source Integral Boundary Conditions for Computation of the Open-Boundary Electrostatic Fields
Shiqiong, Li; Zezhong, Wang
North China Electric Power University, China, Peoples Republic of

Session OA2: Numerical Techniques (I)

13:30-14:30 Bayside Auditorium A

OA2.1 (ID 472)
3D Magnetic Scalar Potential Finite Element Formulation for Conducting Shells Coupled with an External Circuit
Guerin, Christophe (1); Meunier, Gérard (2)
1: CEDRAT S.A., Meylan, France; 2: G2ELab, Saint-Martin-d'Hères, France

OA2.2 (ID 466)
Alternate Parallel Processing Approach for FEM
Fernández, David M.; Mehri Dehnavi, Maryam; Gross, Warren J.; Giannacopoulos, Dennis D.
McGill University, Canada

Session PA7: Devices and Applications (II)

14:30-15:30 – Bayside Gallery

PA7.1 (ID 332)
Efficient Methodology for Optimizing Degaussing Coil Currents in Ships Utilizing Magnetomotive Force Sensitivity Information
Kim, Dong-Hun (1); Choi, Nak-Sun (1); Jeung, Giwoo (1); Yang, Chang-Seob (2); Chung, Hyun-Ju (2); Jung, Snag Sik (1)
1: Kyungpook National University, Korea, South (Republic of); 2: Agency for Defense Development, Korea, South (Republic of)

PA7.2 (ID 350)
Computation of 3D Magnetic Leakage Field and Stray Losses in Large Power Transformer
Zhu, Zhanxin; Xie, Dexin; Wang, Gang; Zhang, Yanli; Yan, Xiuke
Shenyang University of Technology, China, Peoples Republic of

PA7.3 (ID 353)
Characteristic Analysis of Directly Coupled HTS dc-SQUID Magnetometer Considering Josephson Junction as Equivalent Circuit
Terauchi, Naoya (1); Noguchi, So (1); Igarashi, Hajime (1); Hatsukade, Yoshimi (2)
1: Hokkaido University, Japan; 2: Toyohashi University of Technology, Japan

PA7.4 (ID 362)
Optimal Design for Synchronous Motor by using 3-D FEM with Embedded Parallel Genetic Algorithm
Kitagawa, Wataru; Kimura, Yoshihiro
Nagoya Institute of Technology, Japan

PA7.5 (ID 372)
Analysis of the Force Characteristic on the Armature of Inductive Coilgun and its Trigger Strategy
Xiang, Hongjun (1); Li, Zhiyuan (2); Yuan, Jiansheng (1)
1: Tsinghua University, China, Peoples Republic of; 2: Shijiazhuang Mechanical Engineering College

PA7.6 (ID 375)
Characteristics Analysis of a New Spherical Actuator Employing 3-D FEM
Maeda, Shuhei; Hirata, Katsuhiro
Osaka-University, Japan

PA7.7 (ID 381)
Modeling of PM Synchronous Machines Under Inter-turn Fault
Takorabet, Noureddine; Leboeuf, Nicolas; Boileau, Thierry; Meibody-Tabar, Farid
Nancy University INPL, France

PA7.8 (ID 385)
Simulation Analysis of Steady State Characteristics of a Novel Permanent Variable Transmission
Xing, Jingwei (1); Yin, Zhijun (2); Li, Yong (1)
1: Harbin Institute of Technology, China, Peoples Republic of; 2: Harbin Electric Machinery Company, China, Peoples Republic of

PA7.9 (ID 395)
Computational Investigation of SF6 Hot-Gas Flow around Current Zero in UHV Gas Circuit Breakers
Song, Ki-Dong (1); Oh, Yeon-Ho (1); Chong, J. K. (1); Lim, J. S. (2); Seo, W. B. (2)
1: KERI, Korea, South (Republic of); 2: Il-Jin Electric Co.

PA7.10 (ID 397)
Analysis on Electromagnetic Losses of High-Speed Permanent Magnet Synchronous Motor according to Current Waveform
Ko, Kyoung-Jin (1); Jang, Seok-Myeong (1); Lee, Sung-Ho (2)
1: Chungnam National University, Korea, South (Republic of); 2: Korea Institute of Industrial Technology Gwangju Research Center, Korea, South (Republic of)

PA7.11 (ID 399)
Comparison on Eddy Current Losses for Halbach Array Permanent Magnet Type Cylindrical Linear Oscillatory Actuator according to Voltage Source Waveform
Ko, Kyoung-Jin (1); Jang, Seok-Myeong (1); Jeong, Sang-Sub (2)

1: Chungnam National University, Korea, South (Republic of); 2: LG Electronics Incorporated, Korea, South (Republic of)

PA7.12 (ID 438)
Comparison and Improvement of Inverse Techniques for MEG Source Connectivity Network Reconstruction
Luan, Feng (1,2); Choi, Jong-Ho (1); Lee, Chany (3); Kim, Min-Hyuk (1); Jung, Hyun-Kyo (1)
1: School of Electrical Engineering and Computer Science, Seoul National University, Korea, South (Republic of); 2: School of Information Science and Engineering, Northeastern University, Shenyang, China; 3: College of Medicine, Korea University, Korea, South (Republic of)

PA7.13 (ID 440)
Precise Estimation of Correlated Bio-Electromagnetic Activities in Deep Source Space
Luan, Feng (1,2); Choi, Jong-Ho (1); Lee, Chany (3); Kim, Min-Hyuk (1); Jung, Hyun-Kyo (1)
1: School of Electrical Engineering and Computer Science, Seoul National University, Korea, South (Republic of); 2: School of Information Science and Engineering, Northeastern University, Shenyang, China; 3: College of Medicine, Korea University, Korea, South (Republic of)

PA7.15 (ID 489)
Influence of the Non-Linear UHF-RFID IC Impedance on the Backscatter Abilities of a T-Match Tag Antenna Design
Bauernfeind, Thomas (1); Koczka, Gergely (1); Maier, Stefan (2); Preis, Kurt (1); Biro, Oszkar (1)
1: Graz University of Technology, Austria; 2: NXP Semiconductors Austria GmbH, Austria

Session PA8: Electric Machines and Drives (II)

14:30-15:30 – Bayside Gallery

PA8.1 (ID 177)
Comparison of Synchronous Reluctance Machines with High-Anisotropy Rotors
Schmidt, Erich
Vienna University of Technology, Austria

PA8.2 (ID 185)
A Straightforward ICCG Convergence Method for Simulation of Multi-loop and FE Model of Electric Machines and Power Electronics Systems
Shanming, Wang (1); Yonghong, Xia (1,2); Xiangheng, Wang (1); Pengsheng, Su (1); Shaogang, Huang (2)
1: Tsinghua University, China, Peoples Republic of; 2: Nanchang University, China, Peoples Republic of

PA8.3 (ID 194)
A Novel Off-line Parameter Identification Method Based on IRCMF312 for PMSM
Wang, Wei; Zhang, Siyao
Harbin Institute of Technology, China, Peoples Republic of

PA8.4 (ID 196)
Iron Loss Prediction of a Fractional-Slot Concentrated Winding Surface PM Synchronous Generator Feeding Various Loads
Dong, Jianning; Huang, Yunkai; Jin, Long
School of Electrical Engineering, Southeast University, Nanjing, China

PA8.5 (ID 199)
Segmented Magnets in Line-start Permanent Magnet Synchronous Motor for Reducing Magnet Demagnetization
Lu, Weifu
North China Electric Power University, China, Peoples Republic of

PA8.6 (ID 217)
Inductance and Torque Calculation of Permanent Magnet Synchronous Machines using the Frozen Permeabilities Method with the Finite Element Analyses
Schmidt, Erich; Susic, Marko
Vienna University of Technology, Austria

PA8.7 (ID 227)
Analysis of a Magnetic Release in a Molded Case Circuit Breaker
Shin, Dong Kyu; Kang, Jong Sung; Choi, Myung Jun
Hyundai Heavy Industries Co., LTD., Korea, South (Republic of)

PA8.8 (ID 228)
End Effect in Tubular Transverse Flux Permanent Magnet Linear Motor
Zhao, Mei; Zou, Jibin; Li, Jianjun; Wang, Qian
Harbin Institute of Technology, China, Peoples Republic of

PA8.9 (ID 233)
Improvement of Torque Characteristic of Flux-Concentration-Type Surface Permanent Magnet Motors
Todaka, Takashi; Eguchi, Keisuke; Enokizono, Masato
Faculty of Engineering, Oita University, Japan

PA8.10 (ID 238)
Performance of an Axial-flux Permanent-magnet Synchronous Generator with Double-sided Rotor and Coreless Armature
Chan, Tze-Fun (1); Wang, Weimin (1); Lai, Loi Lei (2)
1: The Hong Kong Polytechnic University, China, Peoples Republic of; 2: City University London, UK

PA8.11 (ID 242)
Asymmetry of Windings Inductance in High- Torque Low-Speed Multi-Unit Permanent Magnet Synchronous Motor
Zhao, Bo; Zou, Jibin; Li, Jianjun
Harbin Institute of Technology, China, Peoples Republic of

PA8.12 (ID 255)
Analytic Design of Slotless Brushless DC Motor with Hexagonal Windings
Seo, Jung Moo (1,2); Kim, Young Kyun (1); Rhyu, Se Hyun (1); Jung, In Soung (1); Jung, Hyun Kyo (2)
1: Korea Electronics Technology Institute, Korea, South (Republic of); 2: Seoul National University, Korea, South (Republic of)

PA8.13 (ID 257)
Iron Loss of a Permanent Magnet-Inductor Hybrid Excitation Synchronous Generator
Zou, Jibin; Fu, Xinghe; Zhao, Bo
Harbin Institute of Technology, China, Peoples Republic of

PA8.14 (ID 274)
A Power Balanced Time-stepping Finite Element Method for Transient Magnetic Field Computation
Niu, Shuangxia (1); Ho, S. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: The Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA8.15 (ID 279)
Study on Control Strategy of a Linear Switched Reluctance Machine with Mutual Coupling in Wave Energy Conversion
Du, Jinhua; Liang, Deliang; Gao, Lin
State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, China, Peoples Republic of

Session PA9: Numerical Techniques (III)

14:30-15:30 – Bayside Gallery

PA9.1 (ID 429)
Steady-State Analysis of Power Transformers under DC Bias by the Finite Element Method with the Fixed Point Technique
Biro, O. (1); Chen, Y. (1); Koczka, G. (1); Leber, G. (2); Preis, K. (1); Wagner, B. (2)
1: Graz University of Technology, Austria; 2: Siemens Transformers Austria

PA9.2 (ID 444)
An Independent Loops Search Algorithm for Solving Inductive PEEC Large Problems
Nguyen, Trung-Son; Guichon, Jean-Michel; Chadebec, Olivier; Meunier, Gérard; Vincent, Benjamin
Grenoble Electrical Engineering Laboratory, France

PA9.3 (ID 459)
Electromagnetic Field Analysis on Inter-turn Short Circuit of Rotor Winding for Turbogenerator Based on Meshless Method
Chen, Xiaoming (1); Yang, Guangyuan (1); Shao, K. R. (1); Guo, Youguang (2); Zhu, Jianguo (2)
1: Huazhong University of Science and Technology, China, Peoples Republic of; 2: Faculty of Engineering, University of Technology, Sydney, N.S.W. 2007, Australia

PA9.4 (ID 461)
Iterative Solver for Linear System Obtained by Edge Element: Variable Preconditioned Method with Mixed Precision on GPU
Ikuno, Soichiro; Kawaguchi, Yuki; Fujita, Norihisa; Itoh, Taku; Nakata, Susumu; Watanabe, Kota
Tokyo University of Technology, Japan

PA9.6 (ID 471)
Transient Calculation of Electromagnetic Field for Grounding System based on Consideration of Displacement Current
Trlep, Mladen; Jesenik, Marko; Hamler, Anton
University of Maribor, Slovenia

PA9.8 (ID 474)
A Matrix-Free Iterative Solution Procedure for Finite Element Problems

Bastos, João Pedro Assumpção (1); Jacobs, Ralf (2); Sadowski, Nelson (1); Arnulf, Kost (3)
1: GRUCAD/UFSC, Brazil; 2: T.U. Dresden, Germany; 3: T.U. Cottbus, Germany

PA9.10 (ID 478)
Applying Parallel Programming to the N Scheme for Solving FEM Cases without Assembling an A x = b System
Eyng, Juliana (1); Bastos, João Pedro Assumpção (1); Sadowski, Nelson (1); Fischborn, Marcos (2); Dantas, Mario Antonio Ribeiro (1)
1: Universidade Federal de Santa Catarina, Brazil; 2: Universidade Tecnológica Federal do Paraná

PA9.11 (ID 480)
A Novel Approach for Time Domain Analysis of Transient Currents in Conductors
Tolosa, Thiago Grandi; Janiszewski, Jorge Mieczyslaw; Pouzada, Eduardo Victor
Mauá Institute of Technology, Brazil

PA9.12 (ID 491)
Accelerating Sparse Approximate Inverse Preconditioners based on Matrix Entries on GPUs
Mehri Dehnavi, Maryam; Fernández, David M.; Giannacopoulos, Dennis D.
McGill University, Canada

PA9.13 (ID 502)
Vector Fitting based Adaptive Frequency Sampling for Compact Model Extraction on HPC Systems
Ciuprina, Gabriela; Ioan, Daniel; Lazar, Ioan-Alexandru
Politehnica University of Bucharest, Romania

PA9.14 (ID 505)
Improved Generalized Back Projection Algorithm Based on Linearised Sensitivity Function for 3D EIT
Wang, Hongbin; Xu, Guizhi; Zhang, Shuai; Li, Ying; Yan, Weili
Hebei University of Technology, China, Peoples Republic of

PA9.15 (ID 507)
A Fixed-pointed Iteration Method of Total Variation Regularization for Image Reconstruction of ECT
Li, Cuihuan; Yang, Xiaoguang; Wang, Youhua
Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Box 359, Tianjin 300130, China

Session PA10: Static Fields and Quasi-Static Fields (III)

16:00-17:00 – Bayside Gallery

PA10.1 (ID 294)
FEM-Source Integral Boundary Conditions for Computation of the Open-Boundary Magnetostatic Fields
Zezhong, Wang; Shiqiong, Li
North China Electric Power University, China, Peoples Republic of

PA10.2 (ID 305)
Stochastic Uncertainty Quantification of Eddy Currents in the Human Body by Polynomial Chaos Decomposition
Gaignaire, Roman (1); Scorretti, Riccardo (2); Sabariego, Ruth (1); Geuzaine, Christophe (1)
1: Université de Liège, Belgium; 2: Laboratoire Ampère – UMR 5005 CNRS, Université Lyon 1, France

PA10.3 (ID 307)
Computation of Second Order Capacitance Sensitivities Using Adjoint Method in Finite Element Modeling
Ren, Zhuoxiang (1); Qu, Hui (2); Xu, Xiaoyu (2)
1: Laboratoire d'Electronique et Electromagnetisme, University of Pierre & Marie Curie, France; 2: Institute of Electrical Engineering, Chinese Academy of Sciences, China

PA10.4 (ID 308)
Plane Field Harmonics in Accelerator Magnets
Russenschuck, Stephan; Hoffmann, Sabina; Auchmann, Bernhard
CERN, Switzerland

PA10.5 (ID 315)
Quantitative Non-destructive Testing of Metallic Foam Based on Direct Current Potential Drop Method
Zhang, Jing (1); Xie, Shejuan (1,2); Chen, Zhenmao (1)
1: MOE Key Laboratory for Strength and Vibration, Xi'an Jiaotong University, Xi'an, 710049, China; 2: Institute of Fluid Science, Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai, 980-8577, Japan

PA10.8 (ID 326)
High Efficiency FEM Calculation of the Ionized Field under HVDC Transmission Lines
Zhen, Yongzan; Cui, Xiang; Lu, Tiebing; Zhou, Xiangxian; Luo, Zhaonan
North China Electric Power University, China, Peoples Republic of

PA10.9 (ID 327)
Analysis of Ion Current Passing through the Human Body under HVDC Lines with 3D Finite Element Method
Zhen, Yongzan; Cui, Xiang; Lu, Tiebing; Zhou, Xiangxian; Luo, Zhaonan
North China Electric Power University, China, Peoples Republic of

PA10.10 (ID 359)
A Time-Efficient Method for the Simulation of Ion Flow Field of the AC-DC Hybrid Transmission lines
Zhou, Xiangxian; Cui, Xiang; Lu, Tiebing; Zhen, Yongzan; Luo, Zhaonan

North China Electric Power University, China, Peoples Republic of

PA10.11 (ID 363)
2D/3D Hybrid Calculation of Ion Flow Field near House under HVDC Bipolar Transmission Line
Zhang, Bo; Yin, Han; He, Jinliang; Zeng, Rong; Li, Wei
Tsinghua University, China, Peoples Republic of

PA10.12 (ID 367)
Recent Surrogate Modeling Approaches in Electromagnetic Nondestructive Evaluation
Bilicz, Sandor (1,2); Lambert, Marc (1); Gyimothy, Szabolcs (2); Pavo, Jozsef (2)
1: Laboratoire des Signaux et Systemes, France; 2: Budapest University of Technology and Economics, Hungary

PA10.13 (ID 368)
Kriging-based Surrogate Model for the Solution of Inverse Problems in Nondestructive Testing
Bilicz, Sandor (1,2); Lambert, Marc (1); Gyimothy, Szabolcs (2); Pavo, Jozsef (2)
1: Laboratoire des Signaux et Systemes, France; 2: Budapest University of Technology and Economics, Hungary

PA10.14 (ID 651)
3D Momentum-Based Error Criterion Dedicated to Evaluation of Magnetic and Electric Forces
Rondot, Loic (1); Mazauric, Vincent (2); Le Floch, Yann (3)
1: Cedrat, France; 2: Schneider Electric, France; 3: Cedrat, France

PA10.15 (ID 794)
Towards a Fully 3D Transient-Dedicated Error Criterion
Mazauric, Vincent Georges (1); Rondot, Loïc (2)
1: Schneider Electric, France; 2: CEDRAT, France

PA10.16 (ID 168)
Parallel Time-Periodic Finite-Element Method for Steady-State Analysis of Rotating Machines
Takahashi, Yasuhito (1); Iwashita, Takeshi (2); Nakashima, Hiroshi (2); Tokumasu, Tadashi (3); Fujita, Masafumi (3); Wakao, Shinji (4); Fujiwara, Koji (1); Ishihara, Yoshiyuki (1)
1: Doshisha University, Japan; 2: Kyoto University; 3: Toshiba Corporation Power Systems Company; 4: Waseda University

Session PA11: Electric Machines and Drives (III)

16:00-17:00 – Bayside Gallery

PA11.1 (ID 280)
Comparison of Linear Switched Reluctance Machines with Mutual Coupling and Permanent Magnet Machines with Halbach Array for Wave Energy Conversion
Du, Jinhua; Liang, Deliang; Zhao, Dongdong; Gao, Lin
State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, China, Peoples Republic of

PA11.2 (ID 291)
The Over-Saturated Effect in Hybrid Excited Flux-Switching Machines
Zhang, Gan; Cheng, Ming; Hua, Wei
School of Electrical Engineering, Southeast University, China, Peoples Republic of

PA11.3 (ID 295)
Analysis of Force and Torque Variation on VCM Actuator for Ultrahigh TPI Magnetic Recording System
Phyu, Hla Nu; Bi, Chao; Jiang, Quan
*A*Star-Data Storage Institute, Singapore*

PA11.4 (ID 296)
Prediction of Iron Losses in Doubly Salient Permanent Magnet Machine with Rectangular Current Waveform
Zhang, Jianzhong; Wang, Minxi; Cheng, Ming
Southeast University, China, Peoples Republic of

PA11.5 (ID 298)
A Unified Algorithm of Finite Element Method for Circuit Coupled 2-D Plane and Axisymmetric Magnetic Fields and Its Applications
Niu, Shuangxia (1); Ho, S. L. (1); Li, H. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA11.6 (ID 310)
Eddy Current Reduction in High-Speed Machines and Loss Analysis with Multislice Time-Stepping Finite-Element Method
Niu, Shuangxia (1); Ho, S. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA11.7 (ID 311)
A Convenient Mesh Rotation Method of Finite Element Analysis Using Sub-matrix Transformation Approach
Ho, S. L. (1); Niu, Shuangxia (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PA11.8 (ID 317)
Electromagnetic Performance Analysis of Hybrid-Excited Flux-Switching Machines by a Nonlinear Magnetic Network Model
Hua, Wei; Zhang, Gan; Cheng, Ming
School of Electrical Engineering, Southeast University, China, Peoples Republic of

PA11.9 (ID 324)
Investigation of Outer Rotor Structures for Dual Mechanical Port Machine
Sun, Xikai; Cheng, Ming
Southeast University, China, Peoples Republic of

PA11.10 (ID 328)
Back-EMF Optimization of Constant-Frequency Double-Rotor Generator for Minimizing Harmonics
Wang, Minxi; Zhang, Jianzhong; Cheng, Ming
Southeast University, China, Peoples Republic of

PA11.11 (ID 338)
An Extended Field Reconstruction Method for Modeling of Switched Reluctance Machines
Lin, Chenjie; Wang, Wei; Fahimi, Babak
University of Texas at Dallas, United States of America

PA11.12 (ID 347)
Electromagnetic Performance Analysis of a New Permanent-magnet Machine for Four-wheel Independently Driven EVs Using Finite Element Method
Chen, Qian; Liu, Guohai; Gong, Wensheng; Zhao, Wenxiang
School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China

PA11.13 (ID 349)
Structure Optimization of Double-Sided Iron-Core Type Permanent Magnet Linear Synchronous Machine Using Response Surface Method
Zhu, Yu-Wu; Lee, Sang-Geon; Cho, Yun-Hyun
Dong-A University, Korea, South (Republic of)

PA11.14 (ID 355)
Temperature Compensation Algorithm for Current of IPMSM for Electric Scooter
Im, Jong-Bin; Ham, Sang-Hwan; Jang, Ik-Sang; Ahn, Han-Woong; Lee, Ju
Hanyang University, Korea, South (Republic of)

PA11.15 (ID 357)
Design Optimization of Magnetic Gears Using a PSO based Mesh Adjustable Finite Element Algorithm
Niu, Shuangxia (1); Chen, Ningning (1); Ho, S. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The HK Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

Session PA12: Devices and Applications (III)

16:00-17:00 – Bayside Gallery

PA12.1 (ID 511)
Cylindrical Electromagnetic Concentrator with Radial and Tangential Constitutive Parameter Spatially Invariant
Zhang, Kuang (1); Wu, Qun (1,2); Fu, Jia-Hui (1); Yang, Guo-Hui (1); Li, Le-Wei (3)
1: Harbin Institute of Technology, China, Peoples Republic of; 2: State Key Laboratory of Millimeter Waves, China, Peoples Republic of; 3: National University of Singapore, Singapore

PA12.2 (ID 522)
Design of a Novel Ultrawide-band Omnidirectional Antenna
Qiu, Jinghui; Zhang, Pengyu
Harbin Institute of Technology, P. R. China

PA12.3 (ID 528)
Magnetic Noise Analysis of Traction Power Converter in Shinkansen Bullet Train
Wakao, Shinji (1); Fukuzumi, Tetsuo (1); Otake, Asuka (1); Okutani, Tamio (2); Saito, Masahiko (3); Toyoda, Akihisa (3); Morita, Masatsugu (4); Yajima, Atsushi (4); Tashiro, Korefumi (5); Kudo, Nozomi (5); Nakahata, Yoshiki (6); Shiromizu, Tsunehiro (6)

1: Waseda University, Japan; 2: Railway Engineering Co., Ltd; 3: The Nippon Signal Co., Ltd; 4: Toshiba Corporation; 5: National Traffic Safety and Environment Laboratory; 6: Kyushu Railway Company

PA12.4 (ID 556)
Design and Dynamic Analysis of Electromagnets for Magnetic Suspension Systems based on 3-D FEM
Choi, Jang-Young; Ko, Kyoung-Jin; Jang, Seok-Myeong
Chungnam Nat'l Univ., Korea, South (Republic of)

PA12.5 (ID 565)
Development of Distribution Transformers Assembled of Composite Wound Cores
Kefalas, Themistoklis D.; Kladas, Antonios G.
National Technical University of Athens, Greece

PA12.6 (ID 577)
Analysis of Wireless Energy Transfer System Based on 3-D Finite Element Method Including Displacement Current
Zhang, Xiu; Zhao, Yanpu; Ho, S. L.; Fu, W. N.
The Hong Kong Polytechnic University, China, Peoples Republic of

PA12.7 (ID 582)
Large-Scale Transient Eddy-Current Analysis of Large-Capacity Inverter Frame by FEM with Infinite Edge Elements
Wakao, Shinji; Tsuzaki, Kenta; Otake, Asuka; Tamitani, Satoshi
Waseda University, Japan

PA12.8 (ID 616)
Analysis of Voltage Dependence of Standard High-Voltage Compressed Gas Capacitor
Xing, Jin
Tsinghua University, China

PA12.9 (ID 638)
Parallelized FMM and Dedicated PEEC Method to Model Industrial Power Interconnections – Application to Boost Chopper
Ardon, Vincent (1,2); Chadebec, Olivier (1); Guichon, Jean-Michel (1); Labie, Patrice (1); Le Floch, Yann (2); Franchino, Roger (3)
1: G2Elab, France; 2: cedrat, France; 3: Schneider-Electric, France

PA12.11 (ID 672)
Feasibility Analysis and Calculation of HTS Inductive Charging Technology
Jin, Jian-Xun (1); Chen, Xiao-Yuan (1); Zhu, Jian-Guo (2); Guo, You-Guang (2)
1: University of Electronic Science and Technology of China, China, Peoples Republic of; 2: University of Technology Sydney, Australia

PA12.12 (ID 677)
Directional Sensitivity of MEG Forward and Inverse Problems
Choi, Jong-Ho (1); Luan, Feng (1,3); Kim, Min-Hyuk (1); Jung, Hyun-Kyo (1); Im, Chang-Hwan (2)
1: Seoul National University, Korea, South (Republic of); 2: Yonsei University, Korea, South (Republic of); 3: Northeastern University, China

PA12.13 (ID 681)
Analysis of Wireless Energy Transmission for Implantable Device Based on Coupled Magnetic Resonance
Xu, Guizhi (1); Yin, Ning (1); Fu, Weinong (2); Yang, Xuewen (2); Zhang Shuai (1)
1: Hebei University of Technology, Tianjin, China; 2: The Hong Kong Polytechnic University, Hong Kong, China

PA12.14 (ID 690)
Simulation and Analysis and of High-Frequency Resistor Sensor for Corona Current Measurement under Ultra High-Voltage Direct-Current Environment
Yuan, Haiwen (1); Yang, Qinghua (1); Liu, Yuanqing (2); Lu, Jiayu (2)
1: School of Automation Science and Electrical Engineering, Beihang University; 2: China Electrical Power Research Institute

PA12.15 (ID 699)
Finite Element Analysis of Plasma Discharge and Sheath Characterization in Dry Etching Reactor
Yu, Gwang-Jun (1); Kim, Young Sun (2); Lee, Se-Hee (3); Park, Il Han (1)
1: Sungkyunkwan University, South Korea; 2: Massachusetts Institute of Technology, United States of America; 3: Kyungpook National University, South Korea

Wednesday 13 July 2011

Session OB1: Wave Propagation and EMC

09:00-10:00 Bayside Auditorium A

OB1.1 (ID 627)
Accelerated FDTD Computation Applied to Antenna Shape Optimization
Watanabe, Yuta; Watanabe, Kota; Igarashi, Hajime
Hokkaido University, Japan

OB1.2 (ID 477)
Fast Calculation of Parameter Dependencies in Dielectric Waveguides Using Sensitivity Analysis
Burschäpers, Nicola; Bandlow, Bastian, Schuhmann, Rolf
University of Paderborn, Germany

Session PB1: Optimization (I)

10:00-11:00 – Bayside Gallery

PB1.1 (ID 120)
Torque Capability Enhanced Method for Five-phase PMSM with Third Harmonic Injection
Zhao, Pinzhi; Yang, Guijie; Li, Juan; Zhao, Bo
Harbin Institute of Technology, China, Peoples Republic of

PB1.2 (ID 121)
Quantum-Inspired Evolutionary Algorithm and its Application to Inverse Problems
Ho, Siu Lau (1); Yang, Shiyou (2); Ni, Guangzheng (2)
1: Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: College of Electrical Engineering, Zhejiang University, Hangzhou, 310027, China

PB1.3 (ID 122)
A Fast Robust Optimization Methodology based on Polynomial Chaos and Evolutionary Algorithm for Inverse Problems
Ho, Siu Lau (1); Yang, Shiyou (2)
1: Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: College of Electrical Engineering, Zhejiang University, Hangzhou, 310027, China

PB1.4 (ID 126)
Design of Rotor Structure in Brushless DC Motor with Concentrated Windings Using Genetic Algorithm Combined with Cluster of Materials
Ishikawa, Takeo
Gunma University, Japan

PB1.5 (ID 131)
Linear Array Thinning using the Cross-Entropy Method and Parameter Choice
Bian, Li (1,2)
1: Harbin Institute of Technology, China, Peoples Republic of; 2: Heilongjiang Institutes of Science and Technology, China, Peoples Republic of

PB1.6 (ID 138)
Multi-objective Optimization of Inverse Problems using a Vector Cross Entropy Method

Ho, Siu Lau (1); Yang, Shiyou (2)
1: Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: College of Electrical Engineering, Zhejiang University, Hangzhou, 310027, China

PB1.7 (ID 153)
Optimization System for Electromechanical Design Based on FEA and Distributed Calculations
Suzuki, Yusaku (1); Taylor, Bill (2); Jahns, Thomas (2); Yamada, Takashi (1)
1: JSOL Corporation, Japan; 2: The University of Wisconsin-Madison

PB1.8 (ID 160)
Expert Knowledge Benefits on Discrete Optimization Algorithm
Ben Ayed, Ramzi; Brisset, Stephane
Ecole Centrale de Lille, France

PB1.9 (ID 170)
Design Optimization of an SPM Motor Using the Fuzzy-based Taguchi Method with Finite Element Simulations
Hwang, Chang-Chou (1); Chang, Chia-Ming (2); Liu, Cheng-Tsung (3)
1: Department of Electrical Engineering, Feng Chia University, Taiwan, Republic of China; 2: Ph.D. Program in Electrical and Communications Engineering, Feng Chia University, Taiwan, Republic of China; 3: Department of Electrical Engineering, National Sun Yat-sen University, Taiwan, Republic of China

PB1.11 (ID 186)
Design Optimization of an IPMSM by Topology Optimization based on the Level Set Method
Yoo, Jeonghoon; Hong, Hyeoksoo
Yonsei University, Korea, South (Republic of)

PB1.12 (ID 198)
Texturing Design for a Light Trapping System using Topology Optimization
Yoo, Jeonghoon; Soh, Hyunjun
Yonsei University, Korea, South (Republic of)

PB1.13 (ID 236)
An Improved Population-Based Incremental Learning Method for Objects Buried in Planar Layered Media
Chen, Xiaoming (1); Shao, K. R. (1); Guo, Youguang (2); Zhu, Jianguo (2); Lavers, J. D. (3)
1: Huazhong University of Science and Technology, China, Peoples Republic of; 2: Faculty of Engineering, University of Technology, Sydney, N.S.W. 2007, Australia; 3: Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON M5S 3G4, Canada

PB1.14 (ID 240)
Multi-objective PSO Tool for Electromagnetic Problems with Grid Computing
Ilea, Dan (1,2,3); Berbecea, Alexandru Claud (1, 2); Gillon, Frédéric (1,2); Brochet, Pascal (1,2); Radulescu, Mircea M. (3)
1: Ecole Centrale de Lille, France; 2: Univ Lille Nord de France; 3: Technical University of Cluj-Napoca, Romania

PB1.15 (ID 256)
Low Torque Ripple Rotor Design of Interior Permanent Magnet Motor using Multi-phase Level-set and Phase-field Concept
Lim, Sunghoon; Min, Seungjae; Hong, Jung-Pyo

Hanyang University, Korea, South (Republic of)

Session PB2: Electric Machines and Drives (IV)

10:00-11:00 – Bayside Gallery

PB2.2 (ID 376)
Permanent Magnet Machine Model Considering Saturation Effects and Non-sinusoidal EMF
Kakosimos, Panagiotis; Kimoulakis, Nikolaos; Kladas, Antonios
National Technical University of Athens

PB2.3 (ID 386)
A Study on Characteristics of PM Synchronous Motors according to Pole-Slot Combinations for Electrical Power Steering Application
Lee, Su-Jin (1); Kim, Sung-Il (1); Hong, Jung-Pyo (1); Jang, Woo-Kyo (2)
1: Hanyang University, Korea, South (Republic of); 2: Keyang Electric Machinery Co., Ltd., Korea, South (Republic of)

PB2.4 (ID 391)
Electromagnetic Analysis and Design of Two-pole Line-start Permanent Magnet Synchronous Motor
Feng, Yaojing; Yang, Kai
Huazhong University of Science and Technology, China, Peoples Republic of

PB2.5 (ID 400)
Development of a Flux-Switching Permanent Magnet Motor for Hybrid Electric Vehicles
Wu, Zhongze; Hua, Wei; Cheng, Ming
School of Electrical Engineering, Southeast University, China, Peoples Republic of

PB2.7 (ID 409)
Characteristics Comparison of Permanent Magnet Linear Synchronous Motor with Different Topology Structures for Ropeless Elevator System
Zhu, Yu-Wu; Lee, Sang-Geon; Cho, Yun-Hyun
Dong-A University, Korea, South (Republic of)

PB2.8 (ID 430)
Configuration Impacts on Eccentricity Fault Detection in Permanent Magnet Synchronous Motors
Ebrahimi, Bashir Mahdi; Faiz, Jawad
University of Tehran, Iran, Islamic Republic of

PB2.9 (ID 431)
Modification of Gyration Radius for Accurate Eccentricity Fault Detection in Induction Motors
Ebrahimi, Bashir Mahdi (1); Valavi, Mostafa (1); Faiz, Jawad (1); Akin, Bilal (2)
1: University of Tehran, Iran, Islamic Republic of; 2: exas Instruments + C2000 Systems and Applications Group

PB2.10 (ID 432)
Application of Finite Element Methods for Accurate Derating of Distribution Transformers under Simultaneous Non-sinusoidal Supply Voltages and Nonlinear Loads
Ebrahimi, Bashir Mahdi; Faiz, Jawad; Farzamand, Ashkan
University of Tehran, Iran, Islamic Republic of

PB2.11 (ID 437)
Design and Analysis of Long Primary Variable Pole Pitch Linear Induction Motor for Electromagnetic Aircraft Launch System
Mu, Shujun; Chai, Jianyun
Tsinghua University, China, Peoples Republic of

PB2.13 (ID 441)
A Position Detection Strategy for Sensorless Surface Mounted Permanent Magnet Motors at Low Speed Using Transient Finite-Element Analysis
Wang, Z. (1); Niu, Shuangxia (1); Ho, S. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PB2.14 (ID 445)
Impact of Geometrical Abnormalities in the Modeling and Diagnosis of Short Circuit Faults in Permanent Magnet Synchronous Machines
Djerdir, Abdesslem; Farooq, Jawad-Ahmed; Miraoui, Abdellati
SET/UTBM, France

PB2.15 (ID 446)
Design and Analysis of a Novel Grid-connected to Rotor Type Doubly Fed Induction Machine
You, Yong min (1); Lipo, Thomas Anthony (2); Kwon, Byung il (1)
1: Hanyang University, Korea, South (Republic of); 2: Univ. of Wisconsin-Madison, USA

Session PB3: Wave Propagation and EMC (I)

10:00-11:00 – Bayside Gallery

PB3.1 (ID 148)
Investigations into Matching Mediums for Microwave Brain Imaging
Ireland, David
University of Queensland, Australia

PB3.2 (ID 154)
Electromagnetic Scattering of the Carbon Nanotubes Excited by Electric Line Source
Wang, Yue (1,2); Wu, Qun (1,3); Wu, Yuming (4); Li, Lewei (4); He, Xunjun (2); Wang, Yan (2); Dong, Jinyu (2); Wang, Peng (2)
1: Harbin Institute of Technology; 2: Harbin University of Science and Technology, China; 3: State Key Laboratory of Millimeter Wave; 4: National University of Singapore

PB3.3 (ID 162)
Characteristics of the Boundary Model in Two-Dimensional NS-FDTD Method
Kanai, Yasushi (1); Ohtani, Tadao (2)
1: Niigata Institute of Technology, Japan; 2: Nagoya-shi, Japan

PB3.4 (ID 163)
On the Calculation of Fields in Three Dimensions using the Cauchy Integral
Seagar, Andrew D
Centre for Wireless Monitoring and Applications, Australia

PB3.5 (ID 213)
Shape Anisotropy in Micro-sized Water Bamboo Blind Shape by High Frequency Electromagnetic Computation
Fujisaki, Keisuke
Toyota Technological institute, Japan

PB3.6 (ID 219)
Development of Portable High Performance Computing System by Parallel FDTD Dedicated Computers
Fujita, Yuya; Kawaguchi, Hideki
Muroran Institute of Technology, Japan

PB3.7 (ID 265)
Compact CPW-Fed UWB Antenna with 3.5GHz/5.5GHz Band-Notched Applications
Li, Jingjing
Soochow University, China, Peoples Republic of

PB3.8 (ID 281)
A Precise Integration Method in Time Domain for Switching Transient Analysis on Long Nonuniform Transmission Lines
Li, Zhen; Wang, Shunchao; He, Jinliang; Zhang, Bo
Tsinghua University, China, Peoples Republic of

PB3.9 (ID 306)
Computing the Shielding Effectiveness of Thin Screens by the Finite Element Method
Renhart, Werner; Magele, Christian; Tuerk, Christian
Graz University of Technology, IGTE, Austria

PB3.10 (ID 344)
The Multi-layers Absorber with the Dual Elements AMC Structures
Fu, Jia-Hui (1); Yang, Guo-Hui (1); Wu, Qun (1); Zhang, Kuang (1); Meng, Fan-Yi (1); Zhang, Yong (2)
1: Harbin Institute of Technology, China, Peoples Republic of; 2: University of Electronic Science and Technology, China, Peoples Republic of

PB3.11 (ID 371)
A Novel Miniaturized Four-Band Frequency Selective Surface
Yang, Guohui; Fu, Jiahui; Zhang, Tong; Li, Wanlu; Wu, Qun; Gu, Xuemai
Harbin Institute of Technology, China, Peoples Republic of

PB3.12 (ID 373)
Optimization of Damping Distribution along a Broadband Monopole Antenna
Fickenscher, Thomas Heinrich; Berndt, Olaf
Helmut Schmidt University, Germany

PB3.13 (ID 380)
FDTD Modeling of Wave Propagation in Dispersive Havriliak-Negami Media
Rekanos, Ioannis T.
Aristotle University of Thessaloniki, Greece

PB3.14 (ID 418)
Towards the Reconstruction of Three-dimensional Sub-wavelength Objects imaged by a Veselago-Pendry Superlens
Li, Erping
A-STAR, Singapore

PB3.15 (ID 503)
Optimum Equivalent Models of Multi-Conductor Systems for the Study of Electromagnetic Signatures and Radiated Emissions from Electric Drives
Sarikhani, Ali; Barzegaran, M.; Mohammed, Osama
Florida International University, United States of America

Session PB4: Devices and Applications (IV)

11:30-12:30 – Bayside Gallery

PB4.1 (ID 451)
Dynamic Analysis of New Two-DOF Linear Oscillatory Actuator Employing 3-D Finite Element Method
Yoshimoto, Takamichi (1); Shoji, Noritaka (1); Hirata, Katsuhiro (1); Ueyama, Kenji (2); Hashimoto, Eiichiro (2); Takagi, Takahiro (3)
1: Osaka University, Japan; 2: Sanyo Electric Co.,Ltd, Japan; 3: Sanyo Seimitsu Co.,Ltd, Japan

PB4.2 (ID 710)
Failure Analysis of 75T Pulsed High Field Magnet in WHMFC
Zhou, Zhongyu; Cao, Quanliang; Song, Yunxing; Peng, Tao; Li, Liang
Huazhong University of Science and Technology, China, Peoples Republic of

PB4.3 (ID 714)
Improved High-speed Permanent Magnet Actuator With Asymmetrical Structure for Extra High Voltage Vacuum Circuit Breaker
Fang, Shuhua (1); Lin, Heyun (1); Ho, S. L. (2); Guo, Jian (1); Wang, Xianbing (1); Jin, Ping (1)
1: Southeast University, People's Republic of China; 2: Hong Kong Polytechnic University, Kowloon, Hong Kong

PB4.4 (ID 726)
Thrust Force Ripple Minimization of Linear Flux-Switching PM Brushless AC Machines
Zhou, Shigui; Yu, Haitao; Hu, Minqiang; Jiang, Chongxue
Southeast University, China, Peoples Republic of

PB4.5 (ID 767)
CFD Analysis of Temperature Characteristics and Fiber-Optic Temperature Sensor Using a Temperature Rise Experiment of 154kV Transformers
Kim, Ji-Ho; Lee, Hyang-Beom
Soongsil University, Korea, South (Republic of)

PB4.6 (ID 769)
Improving the Efficiency of a Transcutaneous Energy Transmitter and the Influence of the Specific Absorption Rate
Lebensztajn, Luiz; Wolter Ferreira, Daniela
Escola Politécnica da Universidade de São Paulo, Brazil

PB4.7 (ID 781)
Study on Output Characteristic Considering Viscosity of Magnetic Fluid Differential Pressure Sensor
Yang, Wenrong (1); Yang, Qingxin (2); Liu, Jianfei (1); Liu, Ping (1); Wang, Youhua (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: Tianjin Polytechnic University, China, Peoples Republic of

PB4.8 (ID 807)
Finite Element Simulations and Corresponding Experiments of an Advanced Low-Speed High-Torque Permanent Magnet Vernier In-Wheel Motor for Electric Vehicles
Li, Jiangui; Chau, K. T.
The University of Hong Kong, Hong Kong S.A.R. - China

PB4.9 (ID 811)
Effect of Rotor Eccentricity on Core Loss of High Speed Brushless DC Motor
Wang, Huijun; Liu, Xiquan
Beijing University of Aeronautics & Astronautics, China, Peoples Republic of

PB4.10 (ID 465)
A Robust Design of an Isotropic Plannar Antenna for Wireless Power Harvest Using Evolution Strategy and Taguchi's Method
Kim, Hyeong-Seok (1); Ko, Jae-Hyeong (1); Kim, Koon-Tae (1); Kim, Jung-Han (2); Park, Jun-Seok (2)
1: Chung-Ang University, Korea, South (Republic of); 2: Kookmin University, Korea, South (Republic of)

PB4.11 (ID 820)
Study of Two Novel Permanent-Magnet Vernier Machines with Quantitative Comparison and Experimental Verifications
Li, Jiangui; Chau, K. T.
The University of Hong Kong, Hong Kong S.A.R. - China

PB4.12 (ID 824)
A Novel Sinusoidal Pressure Generator Based on Magnetic Liquid
Yang, Wenrong (1); Wang, Fei (1); Yang, Qingxin (2); Zhang, Wenling (1); Wang, Youhua (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: Tianjin Polytechnic University, China, Peoples Republic of

PB4.13 (ID 829)
A Translational Coupled Electromagnetic and Thermal Innovative Model for Induction Welding of Tubes
Dughiero, Fabrizio; Forzan, Michele; Sieni, Elisabetta
University of Padova, Italy

PB4.14 (ID 850)
The Effect of Electromagnetic Interference Shielding Effectiveness on Rogowski Coils
Ferreira da Luz, Mauricio Valencia (1); Rigoni, Mauricio (1); Weinzierl, Djonny (2); Sadowski, Nelson (1); Kost, Arnulf (3); Batistela, Nelson Jhoe (1); Bastos, João Pedro Assumpção (1); Jacobs, Ralf (3)
1: Universidade Federal de Santa Catarina, GRUCAD, P. O. Box 476, 88040-970, Florianópolis, SC, Brazil; 2: Centro Universitário de Jaraguá do Sul, P. O. Box 251, 89254-430, Jaraguá do Sul,

SC, Brazil; 3: Brandenburgische Technische Universität Cottbus, P. O. Box 101344, 03013 Cottbus, Germany

PB4.15 (ID 852)
Design and Analysis of a Tubular Fault-Tolerant Stator-Permanent-Magnet Motor for Artificial Heart
Ji, Jinghua; Zhao, Wenxiang; Wang, Fangqun
School of Electrical and Information Engineering, Jiangsu University, China

PB4.16 (ID 656)
Design, Analysis and Control of a Radial Active Magnetic Bearing for High Speed Turbo-machinery Motors
Hong, Do-Kwan (1); Lee, Ki-Chang (1); Jeong, Yeon-Ho (1); Woo, Byung-Chul (1); Koo, Dae-Hyun (1); Lee, Min-Cheol (2)
1: Korea Electrotechnology Research Institute, Korea, South (Republic of); 2: School of Mechanical Engineering, Pusan National University, Geumjeong-gu, Busan, 609-735, Korea

Session PB5: Optimization (II)

11:30-12:30 – Bayside Gallery

PB5.1 (ID 860)
Multiobjective Optimization of Air-core Reactor Using Nondominated Sorting Genetic Algorithm with a Local Search Strategy
Zhang, Chengfen; Ma, Xikui; Zhao, Yanzhen
State Key Lab of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University

PB5.2 (ID 282)
Pareto Optimisation of a Switched Parasitic Array Antenna
Ireland, David (1); Lu, Jun Wei (2); Lewis, Andrew (2)
1: University of Queensland, Australia; 2: Griffith University, Australia

PB5.3 (ID 286)
A New Approach for Magnetic Arc Optimization to Reduce Cogging Torque in Surface Mounted Permanent Magnet Motors
Lin, D. (1); Ho, S.L. (2); Fu, W. N. (2); Lin, X. (3)
1: Ansys Inc., 225 West Station Square Drive, Pittsburgh, PA 15219, USA; 2: Electrical Engineering Department, Hong Kong Polytechnic University, Hong Kong; 3: Electrical and Computer Engineering Department, Carnegie Mellon University, USA

PB5.4 (ID 303)
Continuous-GRASP Algorithm Combined with Local Differential Evolution Search for the Solution of Electromagnetic Design Problems
Alotto, Piergiorgio (1); Dos Santos Coelho, Leandro (2); Vianna Neto, Julio Xavier (3)
1: Università di Padova, Italy; 2: Pontifical Catholic University of Parana, Curitiba, Brazil; 3: Federal University of Parana, Curitiba, Brazil

PB5.5 (ID 312)
Optimal Design Method Based on Magnetic Material Distributions Using Multi Step Genetic Algorithm with Reduced Design Space
Okamoto, Yoshifumi; Tominaga, Yusuke; Sato, Shuji

Utsunomiya University, Japan

PB5.6 (ID 313)
Optimization with State Space Approaches I: A System Theoretic View on Optimization Algorithms
Steiner, Gerald; Neumayer, Markus
Institute of Electrical Measurement and Measurement Signal Processing, Austria

PB5.7 (ID 314)
Optimization with State Space Approaches II: System Theoretic Concepts per Example
Neumayer, Markus; Steiner, Gerald
Institute of Electrical Measurement and Measurement Signal Processing, Austria

PB5.8 (ID 331)
Reliability-Based Optimization for Electromagnetic Design Employing Reliability Index Approach
Kim, Dong-Hun (1); Kim, Dong-Wook (1); Jeung, Giwoo (1); Sung, Young Hwa (2)
1: Kyungpook National University, Korea, South (Republic of); 2: Korea Institute of Science and Technology Information, Korea, South (Republic of)

PB5.9 (ID 333)
Analysis and Design of a New Fault-Tolerant Stator-Permanent-Magnet Motor
Zhao, Wenxiang (1,2); Cheng, Ming (1); Chau, K. T. (1,3); Cao, Ruiwu (1); Ji, Jinghua (2)
1: School of Electrical Engineering, Southeast University, Nanjing, China; 2: School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 3: Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China

PB5.10 (ID 335)
Proposal of a Three Levels Output Space Mapping Strategy
Ben Ayed, Ramzi; Gong, Jinlin; Bisset, Stephane; Gillon, Federic; Brochet, Pascal
Ecole Centrale de Lille, France

PB5.11 (ID 339)
Quick Tools for Stochastic Tolerance Analysis
Formisano, Alessandro; Martone, Raffaele
Seconda Università di Napoli, Italy

PB5.12 (ID 348)
High Dimensional Electromagnetic Design Problems Based on Sequential Subspace Optimization Method and Grey Correlation Analysis
Lei, Gang (1,2); Shao, Keran (1); Guo, Youguang (2); Zhu, Jianguo (2); Lavers, J. Douglas (3)
1: College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, China; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia; 3: Department of Electrical and Computer Engineering, University of Toronto, Canada

PB5.13 (ID 351)
Improved Sequential Optimization Method for Multiobjective Electromagnetic Device Design Problems
Lei, Gang (1,2); Yang, G. Y. (1); Shao, K. R. (1); Guo, Youguang (2); Zhu, Jianguo (2); Xu, Wei (2)
1: College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, China; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

PB5.14 (ID 366)
Multidisciplinary Robust Optimization Design of Electrical Drive System with PM Transverse Flux Machine and BLDC Control Scheme
Lei, Gang (1,2); Wang, Yi (2); Guo, Youguang (2); Shao, Keran (1); Zhu, Jianguo (2)
1: College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, China; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

PB5.15 (ID 379)
Tissue Detection in MR Images Using Immune Feature Weighted Support Vector Machines
Guo, Lei (1); Zhao, Lei (2,3); Wu, Youxi (1); Li, Ying (1); Xu, Guizhi (1); Wang, Youhua (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: Harvard Medical School and Brigham & Women's Hospital, Boston, MA, USA; 3: XinAoMDT Technology Co., Ltd., China, Peoples Republic of

Session PB6: Electric Machines and Drives (V)

11:30-12:30 – Bayside Gallery

PB6.1 (ID 448)
Reducing Cogging Torque in Surface-mounted Permanent Magnet Synchronous Motors by Non-uniform Distributed Magnets
Wang, Daohan (1); Jung, Sang-Yong (1); Wang, Xiuhe (2)
1: Dong-A University, Department of Electrical Engineering, Korea; 2: Shandong University, School of Electrical Engineering, China

PB6.2 (ID 449)
Performance Comparison of Longitudinal Flux and Transverse Flux Permanent Magnet Machines for Turret Applications with Large Diameter
Lee, Ji-Young (1); Hong, Do-Kwan (1); Woo, Byung-Chul (1); Park, Doo-Hwan (2); Nam, Byoung-Uk (3)
1: Korea Electrotechnology Research Institute, Korea; 2: Doosan Corporation Mottrol, Korea; 3: Agency for Defense Development, Korea

PB6.3 (ID 485)
3-D Finite Element Analysis of Additional Eddy Current Losses in Induction Motors
Stermecki, Andrej (1); Bíró, Oszkár (1); Bakhsh, Imam (1); Ofner, Georg Ofner (2); Ingruber, Reinhard Ingruber (2)
1: Graz University of Technology, Austria; 2: ELIN Motoren Gmbh

PB6.4 (ID 490)
Determination of Saturated Reactance in PMSM with Time-stepping Finite Element Simulation and Experiment
Li, Heming; Zhang, Jian; Liu, Mingji; Luo, Yingli
North China Electric Power University, Beijing, China

PB6.5 (ID 513)
Permanent Magnet Online Magnetization Characteristic Analysis of a Flux Mnemonic Double Salient Motor Using a Piecewise-linear Hysteresis Model
Zhu, Xiaoyong; Quan, Li; Zhang, Bo; Ding, Qian
Jiangsu University, China, Peoples Republic of

PB6.7 (ID 534)
Finite Element Computation of Magnetic Vibration Sources in 100kW Two Fractional-Slot Interior Permanent Magnet Machines for Ship
Lee, Sun Kwon (1); Kang, Gyu Hong (1); Hur, Jin (2)
1: Korea Marine Equipment Research Institute, Korea, South (Republic of); 2: University of Ulsan, Korea, South (Republic of)

PB6.8 (ID 539)
Nonlinear Equivalent Magnetic Circuit Analysis for Linear Flux-Switching Permanent Magnet Machines
Zhou, Shigui; Yu, Haitao; Hu, Minqiang; Jiang, Chongxue
Southeast University, China, Peoples Republic of

PB6.9 (ID 546)
A Novel Method to Reduce Cogging Torque in Permanent Magnet Machines with Different Slot Opening Width
Wang, Daohan (1); Jung, Sang-Yong (1); Wang, Xiuhe (2)
1: Dong-A University, Department of Electrical Engineering, Korea; 2: Shandong University, School of Electrical Engineering, China

PB6.10 (ID 555)
Experimental Verification and Electromagnetic Analysis for Performance of Interior PM Motor according to Slot/Pole Number Combination
Choi, Jang-Young; Park, Yu-seop; Jang, Seok-Myeong
Chungnam Nat'l Univ., Korea, South (Republic of)

PB6.12 (ID 578)
Optimal Design of High Precision Planar Actuator with Halbach Magnet Array
Jiang, Hao; Huang, Xueliang; Zhou, Gan
Engineering Research Center for Motion Control of MOE, School of Electrical Engineering, Southeast University, China, Peoples Republic of

PB6.13 (ID 580)
Numerical Verification of Initial Rotor Position Detection Scheme Proposed based on Analytical Machine Model
Wang, Yi; Zhu, Jianguo; Guo, Youguang; Li, Yongjian; Lei, Gang
University of Technology, Sydney

PB6.14 (ID 581)
Back-EMF design of PM Motor using PCB winding by Space Harmonic Analysis Methods
Chang, Jung Hwan; Jang, Dae Kyu; Kim, Tae Woo
Electrical Engineering / Dong-A University, Korea, South (Republic of)

Session OB2: Devices and Applications

13:30-14:30 Bayside Auditorium A

OB2.1 (ID 404)
Numerical Investigation of the Effects of Loading and Slot Harmonics on the Core Losses of Induction Machines

Dlala, Emad (1); Bottauscio, Oriano (2); Chiampi, Mario (3); Zucca, Mauro (2); Belahcen, Anouar (1); Arkkio, Antero (1)
1: Aalto University School of Science and Technology, FI-00076 Aalto, Finland; 2: Istituto Nazionale di Ricerca Metrologica (INRIM), Turin, I-10135, Italy; 3: Politecnico di Torino, Turin, I-10129, Italy

OB2.2 (ID 575)
A Magnetic Field and Electric Circuit Hybrid Coupled Transient Finite Element Method and its Application to Electric Machines
Ho, S. L. (1); Niu, Shuangxia (1); Li, H. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

Session PB7: Wave Propagation and EMC (II)

14:30-15:30 – Bayside Gallery

PB7.1 (ID 603)
Handling Material Discontinuities in the Generalized Finite Element Method to Solve Wave Propagation Problems
Facco, Werley Gomes (1); Silva, Elson José (2); Moura, Alex Sander (1); Lima, Naísses Zoia (2); Saldanha, Rodney Rezende (2)
1: Universidade Federal Dos Vales Do Jequitinhonha E Do Mucuri, Brazil; 2: Universidade Federal De Minas Gerais, Brazil

PB7.2 (ID 342)
Equivalent Circuit Modeling of Frequency-Selective Surfaces Based on Nanostructured Transparent Thin Films
D'Amore, Marcello (2); De Santis, Valerio (1); Feliziani, Mauro (1)
1: University of L'Aquila, Italy; 2: La Sapienza University of Rome, Italy

PB7.3 (ID 632)
EMC Analysis in a Living Environment by Parallel Finite Element Method
Takei, Amane (1); Sugimoto, Shin-ichiro (2); Ogino, Masao (3); Yoshimura, Shinobu (2); Kanayama, Hiroshi (3)
1: Tomakomai National College of Technology / Japan; 2: The University of Tokyo / Japan; 3: Kyushu University / Japan

PB7.4 (ID 646)
3D Generalized Finite-Difference Modeling of Time Reversal for Localization of Dielectric Obstacles — the Impact of Dipole Array Density
Benhamouche, Mehdi (1,2); Bernard, Laurent (1); Pichon, Lionel (1); Lesselier, Dominique (2)
1: LGEP, France; 2: L2S, France

PB7.5 (ID 655)
Computational Investigation and Design of Planar EBG Structures for Coupling Reduction in Antenna Applications
Yioultsis, Traianos; Assimonis, Stylianos; Antonopoulos, Christos
Aristotle University of Thessaloniki, Greece

PB7.6 (ID 686)
Robust Optimization of IC Tag Antennas
Makimura, H.; Itoh, Y.; Watanabe, Y.; Igarashi, H
Hokkaido University, Japan

PB7.7 (ID 721)
Optimal Design of a RFID Tag Antenna Based on Plane-Wave Incidence
Kim, Dong-Hun (1); Byun, Jin-Kyu (2); Choi, Nak-Sun (1); Chung, Young-Seek (3)
1: Kyungpook National University, Korea, South (Republic of); 2: Soongsil University, Korea, South (Republic of); 3: Kwangwoon Univ, Korea, South (Republic of)

PB7.8 (ID 724)
Application Criteria of Surface Impedance Boundary Conditions for Finite-Difference Time-Domain Analyses of Near- and Far-Field Configurations
De Santis, Valerio (1); Cruciani, Silvano (1); Feliziani, Mauro (1); Okoniewski, Michal (2)
1: University of L'Aquila, Italy; 2: University of Calgary, Canada

PB7.9 (ID 793)
A Stable Iterative Approach for 3D Electromagnetic Full Wave Analysis Based on Wave Equation
Murayama, Toshio (1); Muto, Akira (1); Yoshimura, Shinobu (2)
1: Sony Corporation, Japan; 2: The University of Tokyo, Japan

PB7.10 (ID 795)
Assessment of Time Domain Beam Propagation Methods using Padé Approximants for Optical Waveguide Analyses
Schulz, Dirk
Technische Universität Dortmund, Germany

PB7.11 (ID 833)
Propagation Characteristics of Lightning Radiation Electromagnetic Field in Complex Media under the Ground
Zhang, Shaoqing; Ding, Tongyu; Wu, Qun
Harbin Institute of Technology, China, Peoples Republic of

PB7.12 (ID 835)
Design of Jamming Systems through a Multi-Criterion Approach: Assessing the Optimal Antenna Positioning on High Complexity Indoor Environments
Santos, Guilherme (1,2); Grubisic, Stevan (1,2); Carpes Jr., Walter Pereira (1,2)
1: Federal University of Santa Catarina, Brazil; 2: Grupo de Concepção e Análise de Dispositivos Eletromagneticos - GRUCAD

PB7.13 (ID 890)
Simulation and Analysis of High Frequency Electromagnetic Interference in Power Supplies Using Hybrid TLM and MoM Method
Jahanbakht, Mohammad; Bahadorzadeh, Mehdi; Lotfi Neyestanak, Abbas Ali
Islamic Azad University, Shahr-e-Qods Branch, Iran, Islamic Republic of

PB7.14 (ID 116)
Finite Element Analysis of Induced Diffraction Gratings in Nonlinear Optics
Nicolet, Andre; Godard, Pierre; Zolla, Frederic
Aix-Marseille Université, France

PB7.15 (ID 658)
Calculating the Band Structure of Photonic Crystals through the Meshless Local Petrov-Galerkin (MLPG) Method and Periodic Shape Functions
Nicomedes, Williams Lara; Mesquita, Renato C.; Moreira, Fernando J. S.
Federal University of Minas Gerais, Brazil

Session PB8: Devices and Applications (V) and Benchmarking (TEAM)

14:30-15:30 – Bayside Gallery

PB8.1 (ID 868)
Reducing the Output Torque Ripple of Permanent Magnet Synchronous Machine Drive System Caused by Cogging Torque
Chen, Jiaxin (1); Deng, Hao (1); Guo, Youguang (2); Zhu, Jianguo (2); Fu, Weinong (3)
1: Donghua University, Shanghai, China; 2: University of Technology, Sydney, Australia; 3: Hong Kong Polytechnic University, Hong Kong, China

PB8.2 (ID 880)
Modeling of a Power Transformer Using the Perturbation Finite Element Method
Ferreira da Luz, Mauricio Val1encia (1); Dular, Patrick (2,3); Leite, Jean Vianei (1); Kuo-Peng, Patrick (1)
1: Federal University of Santa Catarina, Brazil; 2: ACE, Dept. of Electrical Engineering and Computer Science, University of Liège, Belgium; 3: FNRS, University of Liège, Belgium

PB8.3 (ID 882)
Research on Electromagnetic Environment Equivalent Parameters between Corona Cage and HVDC Transmission Lines by Finite Element Method
Liu, Yuanqing
China Electric Power Research Institute, China, Peoples Republic of

PB8.4 (ID 887)
Modeling Deep Brain Stimulation Incorporating Electrode-Tissue Interfaces
Choi, Charles T. M.; Tsou, Yi-Lin
National Chiao Tung University, Taiwan, Republic of China

PB8.5 (ID 888)
Finite Element Model of Neuron-Electrode Sealing Interface
Choi, Charles T. M.; You, Shan-Jen; Wang, Shao-Po
National Chiao Tung University, Taiwan, Republic of China

PB8.6 (ID 889)
High Temperature Superconducting DC Fault Current Limiter Using Soft Magnetic Composites
Chu, Jianfeng (1); Wang, Shuhong (1); Qiu, Jie (1); Zhu, Jian Guo (2); Guo, Youguang (2); Lin, Zhi Wei (2)
1: Xi'an Jiaotong University, China, Peoples Republic of; 2: University of Technology, Sydney, Australia

PB8.7 (ID 897)
Numerical Analysis and Optimization of an Electromagentic Micro-Generator for Vibration Energy Harvesting Applications
Rotaru, Mihai (1); Kheng, Tan Yen (2); Sykulski, Jan K. (1)
1: University of Southampton; 2: Nanyang Technological University

PB8.8 (ID 898)
Research on the Radial-Radial Magnetic Field Modulated Brushless Compound-Structure Permanent-Magnet Synchronous Machine
Zheng, Ping; Bai, Jingang; Zhao, Jing; Tong, Chengde; Sui, Yi
Harbin Institute of Technology, China, Peoples Republic of

PB8.9 (ID 900)
Influence of Frames, Flitch Plates and Shielding Under the Total Losses of a Single-Phase Shunt Reactor
Ferreira da Luz, Mauricio Valencia
Federal University of Santa Catarina, Brazil

PB8.10 (ID 901)
Performance Simulation of Automotive Connector Considering Coupled Electromagnetic Force and Fretting Vibration
Hong, Jun; Wang, Wei; Li, Baotong; Ying, Guoqing; Wang, Shuhong
Xi'an Jiaotong University, China

PB8.11 (ID 141)
3-D Finite Element Modeling and Validation of Power Frequency Multi-Shielding Effect
Cheng, Zhiguang (1); Takahashi, Norio (2); Forghani, Behzad (3); Liu, L. (1); Fan, Y. (1); Liu, T. (1); Zhang, J. (1); Wang X. (1)
1: Baoding Tianwei Group Co., Ltd, China, Peoples Republic of; 2: Dept. of E.E., Okayama University, Japan; 3: Infolytica co., Canada

PB8.12 (ID 251)
Study on Eddy-Current Loss inside Copper Shielding of Transformers under DC biasing Condition
Zhao, Zhigang (1); Liu, Fugui (1); Wang Youhua (1); Cheng, Zhiguang (2); Yan, Weili (1)
1: Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability,Hebei University of Technology, China, Peoples Republic of; 2: Research & Development Center, Baoding Tianwei Group Co., LTD

PB8.13 (ID 812)
Simulation of Axon Activation by Electrical Stimulation with Finite Difference Time Domain Method
Choi, Charles T. M.; Sun, Shu Hai
National Chiao Tung University, Taiwan, Republic of China

Session PB9: Optimization (III)

14:30-15:30 – Bayside Gallery

PB9.1 (ID 435)
The Application of Virtual Instruments to the Identification and Automatic Classification of the Defect Images
Gizewski, Tomasz (1); Wac-Wlodarczyk, Andrzej (1); Stryczewska, Henryka D. (1); Goleman, Ryszard (1); Nafalski, Andrew (2)
1: Lublin University of Technology, Poland; 2: School of Electrical and Information Engineering, University of South Australia

PB9.2 (ID 436)
Design and Analysis of New Five-Phases Fault-tolerant in-Wheel Permanent-Magnet Motors
Liu, Guohai; Gong, Wensheng; Chen, Qian; Zhao, Wenxiang
School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China

PB9.3 (ID 442)
A Chaotic Approach of Differential Evolution Optimization Applied to Loudspeaker Design Problem
dos Santos Coelho, Leandro (2); C. Bora, Teodoro (2); Lebensztajn, Luiz (1)
1: Escola Politécnica da Universidade de São Paulo, Brazil; 2: Automation and Systems Laboratory, PPGEPS, Pontifical Catholic University of Paraná

PB9.4 (ID 457)
Geometry Optimization of PMSMs Comparing Full and Fractional Pitch Winding Configurations for Aerospace Actuation Applications
Tsampouris, Evangelos; Beniakar, Minos; Kladas, Antonios
National Technical University of Athens, Greece

PB9.5 (ID 469)
Covariance Matrix Adaptation Evolution Strategy Using a Diversity-Guided Step-Size Tuning for Optimization in Electromagnetics
Alotto, Piergiorgio (1); Dos Santos Coelho, Leandro (2); Klein, Carlos E. (3)
1: Università di Padova, Italy; 2: Pontifical Catholic University of Parana, Curitiba, Brazil; 3: Federal University of Parana, Curitiba, Brazil

PB9.6 (ID 481)
Numerical Study to Design the New Type Compact NMR Magnet Using HTS Bulk Annuli with High Magnetic Field Performances
Kim, Seokbeom
Okayama University, Japan

PB9.7 (ID 486)
A Fuzzy Niching Evolution Strategy for Multiobjective Optimization
Magele, Christian (1); Alotto, Piergiorgio (2); Jaindl, Michael (1); Koestinger, Alice (1); Renhart, Werner (1)
1: Graz University of Technology, Austria; 2: Universita degli Studi di Padova,Italy

PB9.8 (ID 492)
The Imaginary Pareto Front: a Helpful Tool for Setting Optimisation Problem for Design of Electromagnetic Devices
Wurtz, Frederic (1); Kuo-Peng, Patrick (2); Soares de Carvalho, Elissa (2)
1: CNRS, France; 2: GRUCAD

PB9.9 (ID 493)
Synthesizing Distributions of Magnetic Nanoparticles for Clinical Hyperthermia
Dughiero, Fabrizio (1); Di Barba, Paolo (2); Sieni, Elisabetta (1)
1: University of Padova, Italy; 2: University of Pavia, Italy

PB9.10 (ID 508)
An Effective Method for Optimal Design of Electrical Machines Based on Finite Element Analysis
Ying, Luo (1); Haisen, Zhao (1); Xiaofang, Liu (1); Baldassari, Peter (2); Wang, Ren H. (3)

1: North China Electric Power University, China, Peoples Republic of; 2: MagneForce Software System Inc.; 3: Stanley Black & Decker Corporation

PB9.11 (ID 512)
Randomly Guided Mesh Adaptive Direct Search Algorithm Applied for Optimal Design of Electric Machines based on FEA
Lee, Dongsu; Lee, Seungho; Kim, Jong-Wook; Jung, Sang-Yong
Dong-A University, Korea, South (Republic of)

PB9.12 (ID 520)
Robust Topology Optimization of an IPM Machine using Sensitivity Analysis
Lowther, David; Li, Min
McGill University, Canada

PB9.13 (ID 535)
Estimation of the Parameters of Lorentz Dispersive Media Using a Time-Domain Inverse Scattering Technique
Papadopoulos, Theseus G.; Rekanos, Ioannis T.
Aristotle University of Thessaloniki, Greece

PB9.14 (ID 543)
Two Improved Particle Swarm Optimization Algorithms for Electromagnetic Device Optimization
Pang, Lingling; Wang, Youhua; Yang, Xiaoguang; Chen, Tanggong
Hebei University of Technology, China, Peoples Republic of

PB9.15 (ID 551)
Topology Optimization of Magnet Shape for Synchronous Machines
Khlissa, Radhouane (1); Gillon, Frederic (1); Takorabet, Noureddine (2)
1: Ecole Centrale de Lille, L2EP, France; 2: Institut National Polytechnique de Lorraine, GREEN, France

Session PB10: Electric Machines and Drives (VI)

16:00-17:00 – Bayside Gallery

PB10.1 (ID 585)
New Fault Impedance Modeling for Inter-Turn Fault Analysis of IPM motor
Kim, Kyung-Tae (1); Hur, Jin (1); Kang, Gyu-Hong (2)
1: University of Ulsan, Korea, South (Republic of); 2: Korea Marine Equipment Research Institute, Busan, Korea, South (Republic of)

PB10.2 (ID 589)
Dynamic Modeling of IPM-type BLDC Motor for Irreversible Demagnetization Due to Stator Turn Fault
Kim, Hyung-Kyu (1); Kim, Hyung-Wook (1); Hur, Jin (1); Kim, Byeong-Woo (1); Kang, Gyu-Hong (2)
1: University of Ulsan, Korea, South (Republic of).; 2: Korea Marine Equipment Research Institute, Busan, Korea, South (Republic of).

PB10.3 (ID 590)
Novel Technique to Reduce Leakage Current and Commutation Losses in Electric Drives
Khan, Hamid (1,2); Miliani, El-Hadj (1); Drissi, Khalil El Khamlichi (2)

1: IFP Energies Nouvelles, France; 2: UBP, LASMEA, France

PB10.4 (ID 604)
A Study on Torque Ripple Calculation for Permanent Magnet Motor according to Load Angle
Kim, Ki-Chan; Kim, Min-Gyu; Ryu, Dong-Seok
Hanbat National University, Korea, South (Republic of)

PB10.5 (ID 614)
Research on the Characteristics of a Novel Tubular Primary Permanent Magnet Linear Generator for Wave Energy Conversion
Huang, Lei; Haitao, Yu; Minqiang, Hu; Bang, Yuan
Southeast University, China, Peoples Republic of

PB10.6 (ID 618)
The Thrust Density Optimal Design of Single Sided PMLSM for Considering Temperature Rise of Winding
Ahn, Ho-Jin; Cho, Gyu-Won; Jang, Ki-Bong; Kim, Gyu-Tak
Changwon National University, Korea, South (Republic of)

PB10.7 (ID 619)
The Optimization of Flux-Barrier Shape for Minimization Cogging torque and Radial Magnetic Force in IPMSM
Cho, Gyu-Won; Woo, Seok-Hyeon; Jang, Ki-Bong; Kim, Gyu-Tak
Changwon National University, Korea, South (Republic of)

PB10.8 (ID 620)
Magnetic Circuit Design of SPM Fractional-slot Motor for Vibration Reduction
Jang, Woo-Sung; Ji, Seung-Hun; Jang, Ki-Bong; Kim, Gyu-Tak
Changwon National University, Korea, South (Republic of)

PB10.9 (ID 621)
The Optimal Design of Thrust Density in Double Sided Coreless PMLSM for Considering Winding Temperature Rise
Ahn, Ho-Jin; Cho, Gyu-Won; Woo, Seok-Hyeon; Jang, Ki-Bong; Kim, Gyu-Tak
Changwon National University, Korea, South (Republic of)

PB10.10 (ID 622)
On the Importance of Using Correct Saturated Steel B/H Curves for Performance Predictions in Induction Motors for Modern Electric and Hybrid Vehicular Drives
Knight, Andrew (1); Dorrell, David (2)
1: University of Alberta, Canada; 2: University of Technology Sydney, Australia

PB10.11 (ID 625)
Alternative Rotor Designs for High Performance Brushless Permanent Magnet Machines for Hybrid Electric Vehicles
Dorrell, David (1); Hsieh, Min-Fu (2); Knight, Andrew (3)
1: University of Technology Sydney, Australia; 2: National Cheng Kung University, Taiwan; 3: University of Alberta

PB10.12 (ID 629)
Performance Analysis of an HTS Magnetic Suspension and Propulsion System with a Double-Sided HTSLSM Driving

Zheng, Lu-Hai (1); Jin, Jian-Xun (1); Guo, You-Guang (2); Xu, Wei (2); Zhu, Jian-Guo (2)
1: School of Automation, University of Electronic Science and Technology of China, Chengdu, China; 2: Faculty of Engineering and Information Technology, University of Technology Sydney, Sydney, Australia

PB10.13 (ID 633)
Driving Characteristics of an HTS Linear Synchronous Motor for an HTS Magnetic Suspension and Propulsion System
Jin, Jian-Xun (1); Zheng, Lu-Hai (1); Xu, Wei (2); Guo, You-Guang (2); Zhu, Jian-Guo (2)
1: School of Automation, University of Electronic Science and Technology of China, Chengdu, China; 2: Faculty of Engineering and Information Technology, University of Technology Sydney, Sydney, Australia

PB10.14 (ID 630)
Finite Element Analysis and Evaluation of Stator Insulation in High Voltage Synchronous Motor
Zhang, Jun (1); Li, Haibo (1); Wang, Shuhong (1); Qiu, Jie (1); Zhu, Jian Guo (2); Guo, Youguang (2)
1: Xi'an Jiaotong University, China, Peoples Republic of; 2: University of Technology, Sydney, Australia

PB10.15 (ID 635)
Analysis of Interior Permanent Magnet Synchronous Motor on Electromagnetic Vibration
Sun, Tao; Lee, Jae-Min; Lee, Byeong-Hwa; Kim, Hea-Joong; Hong, Jung-Pyo
Hanyang University, Korea, South (Republic of)

PB10.16 (ID 439)
Analysis of Novel Brushless DC Motors Made of Soft Magnetic Composite
Ishikawa, Takeo; Takahashi, Kazutoshi; Ho, QuangViet; Matsunami, Michio; Kurita, Nobuyuki
Gunma University, Japan

Session PB11: Wave Propagation and EMC (III)

16:00-17:00 – Bayside Gallery

PB11.1 (ID 109)
Fast and Accurate Prediction of Reverberation Chambers' Resonant Frequencies Using Time-Domain Integral Equation and Matrix Pencil Method
Zhao, Huapeng; Shen, Zhongxiang
Nanyang Technological University, Singapore

PB11.2 (ID 193)
A Full PEEC Modeling of EMI Filter Inductors in Frequency Domain
Kovacevic, Ivana; Friedli, Thomas; Musing, Andreas; Kolar, Johann
Swiss Federal Institute of Technology, Switzerland

PB11.3 (ID 200)
Application of Chaotically Frequency Modulated SVPWM for EMC Enhancement of Closed-loop Motor Drives
Wang, Zheng; Chau, K. T.; Cheng, M.; Ding, Shichuan
Southeast University, China, Peoples Republic of

PB11.5 (ID 224)
Transmission Line Modeling Method Applied to Evaluate Effective Length of Impulsive Grounding Electrodes
Gazzana, Daniel da Silva (1); Bretas, Arturo Suman (1); Dias, Guilherme Alfredo D. (1); Telló, Marcos (2)
1: Federal University of Rio Grande do Sul - UFRGS, Brazil; 2: Pontifical Catholic University of Rio Grande do Sul - PUCRS, Brazil

PB11.6 (ID 248)
Biological Effects of Wi-Fi Hot Spots in Indoor Environments: a Numerical Study
Cacciola, Matteo; Megali, Giuseppe; Pellicanò, Diego; Morabito, Francesco Carlo
University Mediterranea of Reggio Calabria, Italy

PB11.7 (ID 304)
EMC Modelling and Optimization for Reducing Capacitances of Interconnections with Arbitrary Shape in Multilayer VLSI Circuits
Zhu, Boyuan (1); Lu, Junwei (1); Zhu, Mingcheng (2)
1: School of Engineering, Griffith University, Australia; 2: College of Information Engineering, Shenzhen University

PB11.8 (ID 321)
Segmented Locally One Dimensional FDTD (S-LOD-FDTD) Method for EM Propagation Modeling in Large Complex Tunnel Environments
Rana, Md. Masud; Mohan, Ananda S.
University of Technology Sydney (UTS), Australia

PB11.9 (ID 407)
Improvement of EMI Filters Performance by Taking into Account Frequency-Dependant Magnetic Material Properties
Mesmin, Fanny (1); Sixdenier, Fabien (2)
1: G2Elab, France; 2: Ampère, France

PB11.10 (ID 412)
Study on Electromagnetic Radiation of the Valve Tower in HVDC Converter Station
Zhang, Weidong
North China Electric Power University, China, Peoples Republic of

PB11.11 (ID 413)
Analysis of Coupling Mechanism of VFTO in 1000kV GIS Substation on the Secondary Cables
Chen, Peilong; Zhang, Weidong
North China Electric Power University, China, Peoples Republic of

PB11.12 (ID 416)
Research on Shielding Effectiveness of UHVDC Hall Structure
Luo, Qun; Zhang, Weidong
North China Electric Power University, China, Peoples Republic of

PB11.13 (ID 421)
An Electromagnetic Vibration Exciter for Rapping System of Collecting Plate in Electrostatic Precipitator
Kim, Je-Hoon (1); Kim, Jin-Ho (1); Jeong, Sang-Hyun (2); Han, Bang-Woo (2)

1: Yeungnam University, Korea, South (Republic of); 2: Korea Institute of Machinery & Materials, Daejeon, Korea, South (Republic of)

PB11.14 (ID 424)
Using Equivalent Emission Sources to Evaluate the Coupling between Components
Zangui, Sanâa (1); Berger, Kévin (2); Perrussel, Ronan (1); Clavel, Edith (3); Sartori, Carlos (4); Vollaire, Christian (1)
1: Ampere laboratory – UMR CNRS 5005, France; 2: 2Groupe de recherche en Électrotechnique et Electronique de Nancy- EA 4366; 3: Laboratoire G2Elab – UMR CNRS 5269; 4: Escola Politécnica da Universidade de São Paulo LMAG/PEA/EPUSP

PB11.15 (ID 842)
From Galilean Covariance to Gauge Conditions: A Thermodynamic Insight to Signal Integrity
Mazauric, Vincent Georges (1); Borges, Thiago Henrique (1); Rondot, Loïc (2)
1: Schneider Electric, France; 2: CEDRAT, France

Session PB12: Nanomagnetics and Applications and Photonics/Optoelectronics

16:00-17:00 – Bayside Gallery

PB12.1 (ID 104)
High Frequency Magnetization Response of Perpendicular Double-Layer Media
Shiiki, Kazuo; Goto, Akimor
Keio University, Japan

PB12.2 (ID 152)
Numerical Modeling of Joule Heating in a Single Carbon Nanotube during Electron Field Emission
Mologni, Juliano Fujioka (1); Alves, Marco Antonio Robert (2); Percebon, Leandro Alberto (1); Magri, Vanessa Przybylski Ribeiro (3); Bonadiman, Mateus (1); Siqueira, Cesareo de La Rosa (1)
1: ESSS - Engineering Simulation & Scientific Software, Brazil; 2: UNICAMP - University State of Campinas; 3: GSOM -CETUC / PUC-Rio

PB12.3 (ID 189)
Micromagnetic Simulations of Recording Write Heads – A Comparison of Various Micromagnetic Software
Kanai, Yasushi (1); Tsukamoto, Toshio (1); Koyama, Kazuya (1); Yoshida, Kazuetsu (2); Shimizu, Koichi (3); Uehara, Yuji (3); Greaves, Simon J. (4); Muraoka, Hiroaki (4)
1: Niigata Institute of Technology; 2: Kogakuin University; 3: Fujitsu Ltd.; 4: Tohoku University

PB12.5 (ID 479)
Proposal and Analysis of the MRAM with Pole Type System by Using Hysteresis Modeling
Won, Hyuk; Kim, Hui Min; Park, Gwan Soo
Pusan National University, Korea, South (Republic of)

PB12.6 (ID 484)
Magnetic Hysteresis Modeling in Perpendicular Toggle-MRAM System for Scalability Cell Technology
Won, Hyuk; Park, Gwan Soo
Pusan National University, Korea, South (Republic of)

PB12.7 (ID 540)
Application of Halbach-like Magnet Arrays to Magnetic Drug Targeting

Ji, Yongliang; He, Wei; Xu, Zheng; Yang, Fan
ChongQing University, China, Peoples Republic of

PB12.8 (ID 606)
Homogenous Magnetic Markers Immunoassay Measurements by SV-GMR Needle Probe
Haraszczuk, Ryszard Grzegorz (1,2); Yamada, Sotoshi (1); Kakikawa, Makiko (1); Ueno, Toshiyuki (1); Nafalski, Andrew (3)
1: Kanazawa University, Japan; 2: Lublin University of Technology, Poland; 3: University of South Australia, Australia

PB12.10 (ID 566)
Design of Photonic Crystal with Silicon Nitride Media for Light Confinement in Infrared Detector
Lou, Jianyong; Jiao, Fangjun; Ding, Wen; Liang, dlliang; Dang, Fei
Xi'an Jiaotong University, China, Peoples Republic of

Thursday 14 July 2011

Session OC1: Material Modelling

09:00-10:00 Bayside Auditorium A

OC1.1 (ID 602)
3D-2D Coupled Model for Eddy Currents in Laminated Iron Cores
Vanaverbeke, Siegfried (1); De Gersem, Herbert (1); Samaey, Giovanni (2)
1: Katholieke Universiteit Leuven, Wave Propagation and Signal Processing Research Group; 2: Katholieke Universiteit Leuven, Department of Computer Science and Applied Mathematics

OC1.2 (ID 114)
Measurement and Modelling of 2D Magnetostriction of Non-Oriented Electrical Steel
Moses, Anthony John; Somkun, Sakda; Anderson, Philip
Cardiff University, United Kingdom

Session PC1: Numerical Techniques (IV)

10:00-11:00 – Bayside Gallery

PC1.1 (ID 516)
Efficient Implementation of Gaussian Belief Propagation Solver for Large Sparse Diagonally Dominant Linear Systems
El-Kurdi, Yousef; Gross, Warren J.; Giannacopoulos, Dennis D.
McGill University, Canada

PC1.2 (ID 524)
Mesh Quality Investigation to Improve Convergence Property of ICCG Method for Finite Element Method
Takada, Atsushi; Noguchi, So; Igarashi, Hajime
Hokkaido University, Japan

PC1.3 (ID 525)
A New Acceleration Factor Decision Method for ICCG method Utilizing Quality of Finite Element Mesh
Takada, Atsushi; Noguchi, So; Igarashi, Hajime
Hokkaido University, Japan

PC1.4 (ID 529)
Finite Element Modeling and Analyzing for Lumbar Muscle Electrical Activity
Yin, Ning (1); Xu, Guizhi (1); Hu, Yong (2); Zhang Shuai (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: University of Hong Kong

PC1.5 (ID 530)
Adaptive Mesh Generation Method Utilizing Magnetic Flux Lines in Two-Dimensional Finite Element Analysis
Matsutomo, Shinya (1); Noguchi, So (2); Yamashita, Hideo (3)
1: Niihama National College of Technology, Japan; 2: Graduate School of Information Science and Technology, Hokkaido Univ., Japan; 3: Graduate School of Engineering, Hiroshima Institute of Technology, Japan

PC1.6 (ID 554)
Stable Evaluation of Influence Coefficients for Three-Dimensional Extended Boundary-Node Method
Itoh, Taku (1); Saitoh, Ayumu (2); Kamitani, Atsushi (3)
1: Seikei University, Japan; 2: University of Hyogo, Japan; 3: Yamagata University, Japan

PC1.7 (ID 559)
Experimental Analysis of Demagnetization in Magnetic Materials by Using Preisach Model with M-B Variables
Won, Hyuk (1); Park, Hun-Soo (2); Lee, Hyang-Beom (2); Chung, Hyun Ju (3); Yang, Chang Seob (3); Park, Sungkyung (1); Park, Gwan Soo (1)
1: Pusan National University, Korea, South (Republic of); 2: Soongsil University, Korea, South (Republic of); 3: Agency for Defense Development, Korea, South (Republic of)

PC1.8 (ID 561)
Design of a Linear Electromagnetic Actuator Based on Finite Element Modeling
Flores Filho, Aly Ferreira (1); Eckert, Paulo Roberto (1); Silveira, Marilia Amaral da (2); Rinaldi, Vagner (3)
1: Federal University of Rio Grande do Sul, Brazil; 2: Lutheran University of Brazil, Brazil; 3: State Company of Electrical Energy, Brazil

PC1.9 (ID 591)
Research on the Influence of the Ground Wire on Ionized Field of Double-circuit HVDC Transmission Lines
Huang, Guodong; Ruan, Jiangjun; Du, Zhiye; Zhao, Changwei
Wuhan University, China, Peoples Republic of

PC1.10 (ID 592)
Highly Stable Upwind FEM for Solving Ionized Field of HVDC Transmission Line
Huang, Guodong; Ruan, Jiangjun; Du, Zhiye; Zhao, Changwei
Wuhan University, China, Peoples Republic of

PC1.11 (ID 593)
A Stochastic Collocation Method Combined with a Reduced Basis Method to Compute Uncertainties in Numerical Dosimetry
Drissaoui, Mohammed Amine (1); Musy, François (2); Nicolas, Laurent (1); Perrussel, Ronan (1); Voyer, Damien (1)
1: Laboratoire Ampère (CNRS UMR 5005), France; 2: Institut Camille Jordan (CNRS UMR 5208), France

PC1.12 (ID 594)
The Nonconforming Point Interpolation Method Applied to Electromagnetic Problems
Lima, Naísses Zoia (1); Mesquita, Renato Cardoso (1); Facco, Werley Gomes (2); Moura, Alex Sander (2); Silva, Elson José (1)
1: Universidade Federal de Minas Gerais, Brazil; 2: Universidade Federal dos Vales do Jequitinhonha e Mucuri, Brazil

PC1.13 (ID 598)
A Recursive Sparsification of the Inverse Hodge Matrix
Moura, Alex Sander (1); Saldanha, Rodney Rezende (2); Silva, Élson José (2); Lisboa, Adriano Chaves (2); Facco, Werley Gomes (1); Lima, Naísses Zóia (2)

1: Universidade Federal dos Vales do Jequitinhonha e Mucuri, Brazil; 2: Universidade Federal de Minas Gerais,Brazil

PC1.14 (ID 601)
A Generalized Universal Matrix Approach for Continuously Inhomogeneous and Curved Finite Elements
Ansari Oghol Beig, Davood; Wang, Jue; Peng, Zhen; Lee, Jin-Fa
Ohio State University, United States of America

PC1.15 (ID 640)
Local Approximation Based Material Averaging Approach in the Finite Integration Technique
Classen, Christoph; Bandlow, Bastian; Schuhmann, Rolf
University of Paderborn, Germany

Session PC2: Electrical Machines and Drives (VII)

10:00-11:00 – Bayside Gallery

PC2.1 (ID 641)
A Parameterized Mesh Generation and Refinement Method for Finite Element Parameter Sweeping Analysis of Electromagnetic Devices
Zhao, Yanpu (1); Niu, Shuangxia (1); Ho, S. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: The Hong Kong Polytechnic University, China, Peoples Republic of; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

PC2.2 (ID 644)
Study of Unbalanced Voltage on Rotor Classes of Induction Motor according to the NEMA standard
Ruangsinchaiwanich, Somporn; Kraikitrat, Kreansuk
Naresuan University, Thailand

PC2.3 (ID 648)
Analysis of Electromagnetic Forces in Skewed Electric Drives in the Full Operating Range
Boesing, Matthias; Schniedertoens, Thomas; De Doncker, Rik W.
RWTH Aachen University, Germany

PC2.4 (ID 662)
Finite-Element Supported Transmission-Line Models for Calculating High-Frequency Effects in Machine Windings
De Gersem, Herbert (1); Muetze, Annette (2)
1: Katholieke Universiteit Leuven, Belgium; 2: Graz University of Technology, Austria

PC2.5 (ID 666)
3D Modeling and Optimization of a C-Shape Permanent Magnet Synchronous Generator for Wind Power Plants
Ramdane, Brahim; Fouladgar, Javad; Trichet, Didier; Zaim, Mohammed El Hadi
IREENA, France

PC2.6 (ID 675)
Optimum Design Solution for Maximum Torque Density & Minimum Torque Ripple of Flux Switching Motor using Response Surface Methodology
Lee, Jung Ho; Lee, Byeong Du; Song, Hang Sang

Hanbat National University, Korea, South (Republic of)

PC2.7 (ID 676)
Experimental Verification and Finite Element Analysis of Short-Circuit Electromagnetic Force for Dry-Type Transformer
Ahn, Hyun-Mo (1); Oh, Yeon-Ho (2); Son, Ju-Wan (1); Hahn, Sung-Chin (1)
1: Dong-A University, Korea, South (Republic of); 2: Korea Electrotechnology Research Institute, Korea, South (Republic of)

PC2.8 (ID 683)
Method for Evaluating the Eddy Current Loss of a Permanent Magnet in Surface PM Motor Using Coupled 2-D and 3-D Finite Element Analyses
Okitsu, Takashi (1); Matsuhashi, Daiki (1); Gao, Yanhui (2); Muramatsu, Kazuhiro (2)
1: New Product Development Group, Meidensha Corp., Tokyo, Japan; 2: Dept. of Electrical and Electronic Engineering, Saga Univ., Saga, Japan

PC2.9 (ID 687)
Magnetization Characteristics Analysis in a Pole Changing Memory Motor using FEM & Preisach Modeling
Lee, Jung Ho; Lee, Seung Chul; Kim, Hun Young
Hanbat National University, Korea, South (Republic of)

PC2.10 (ID 689)
Optimum Design Criteria of 250 kW Premium Efficiency Traction Induction Motor Using RSM & FEM
Jang, Soon Myung; Lee, Jung Ho; Lee, Byeong Du
Hanbat National University, Korea, South (Republic of)

PC2.11 (ID 691)
PM Magnetization Characteristics Analysis of a Post-Assembly Line Start Permanent Magnet Motor Using Coupled Preisach Modeling and FEM
Lee, Jung Ho; Kim, Kyoung Hoon; Lee, Seung Chul
Hanbat National University, Korea, South (Republic of)

PC2.12 (ID 692)
Optimum Shape Design of Single-sided Linear Induction Motor Using Response Surface Method and Finite Element Method
Jang, Soon Myung; Lee, Seung Chul; Lee, Jung Ho
Hanbat National University, Korea, South (Republic of)

PC2.13 (ID 693)
A Novel Stator Design of Synchronous Reluctance Motor by Loss & Torque Evaluations Related to Slot Numbers using Coupled Preisach Model & FEM
Lee, Jung Ho; Kim, Kyoung Hoon; Lee, Seung Chul
Hanbat National University, Korea, South (Republic of)

PC2.14 (ID 694)
Optimum Design Criteria for Maximum Torque Density & Efficiency of a Line-Start Permanent-Magnet Motor using Response Surface Methodology & Finite Element Method
Lee, Jung Ho; Kim, Hun Young; Lee, Byeong Du
Hanbat National University, Korea, South (Republic of)

PC2.15 (ID 695)
Characteristic Analysis & Optimum Design of Permanent Magnet Assisted Synchronous Reluctance Motor Standard Evaluation
Lee, Jung Ho; Jun, Myung Jin; Lee, Byeong Do
Hanbat National University, Korea, South (Republic of)

Session PC3: Static Fields and Quasi-Static Fields (IV)

10:00-11:00 – Bayside Gallery

PC3.1 (ID 377)
Numerical Analysis of 3D Eddy Current Fields in Laminated Media under Various Frequencies
Wang, Jian (1,2); Lin, Heyun (1); Huang, Yunkai (1)
1: Southeast University, China, Peoples Republic of; 2: Nanjing Institute of Technology, China, Peoples Republic of

PC3.2 (ID 401)
Analysis of Transient Electric Field and Charge Density of Converter Transformer under Polarity Reversal Voltage
Liu, Gang (1); Li, Lin (1); Ji, Feng (1); Li, Wenping (2); Sun, Youliang (2); Li, Bo (3); Li, Jinzhong (3)
1: North China Electric Power University, China, Peoples Republic of; 2: R&D Centre of Baoding Tianwei Group, Peoples Republic of; 3: China Electric Power Research Institute, Peoples Republic of

PC3.3 (ID 402)
Study of Electric Field Distribution in Deep Brain Stimulation
Dong, Guoya; Han, Tingyan; Lv, Dianli; Zhang, Shuai; Xu, Guizhi; Yan, Weili
Hebei University of Technology, China, Peoples Republic of

PC3.4 (ID 411)
Simulations of Stent Artifacts in Magnetic Resonance Imaging
Guo, Yan; Jiang, Xiaohua
Department of Electrical Engineering, Tsinghua University, Peoples Republic of China

PC3.5 (ID 414)
Computation of a 3-D model for Lung Imaging with Electrical Impedance Tomography
Shuai, Zhang; Guizhi, Xu; Hongbin, Wang; Xueying, Zhang; Guoya, Dong; Weili, Yan
Hebei University of Technology, China, Peoples Republic of

PC3.6 (ID 419)
Magnetic Field Evaluation at Vertex by Boundary Integral Equation Derived from Scalar Potential of Double Layer Charge
Ishibashi, Kazuhisa (1); Andjelic, Zoran (1); Takahashi, Yasuhito (2); Takamatsu, Tomoaki (3); Fukuzumi, Tetsuo (3); Wakao, Shinji (3); Fujiwara, Koji (3); Ishihara, Yoshiyuki (3)
1: ABB Switzerland Ltd, Switzerland; 2: Doshisha University; 3: Waseda University

PC3.7 (ID 422)
Some Treatments of Fictitious Volume Charges in Nonlinear Magnetostatic Analysis by BEM
I*shibashi, Kazuhisa (1); Andjelic, Zoran (1); Takahashi, Yasuhito (2); Takamatsu, Tomoaki (3); K. Tsuzaki, Kenta (3); Wakao, Shinji (3); Fujiwara, Koji (2); Ishihara, Yoshiyuki (2)*
1: ABB Switzerland Ltd, Switzerland; 2: Doshisha University; 3: Waseda University

PC3.8 (ID 443)
A Three Dimensional Electromagnetic Shell Finite Element for Coupled Vector-Scalar Potential Formulations
Thomas, Pierre (1); Le Menach, Yvonnick (2)
1: LAMEL Laboratoire d'Analyse des Matériels Electriques, Electricite de France; 2: LAMEL Laboratoire d'Analyse des Matériels Electriques, Universite Lille1 L2EP

PC3.9 (ID 453)
Proper Generalized Decomposition Method to Solve Quasi Static Field Problems
Henneron, Thomas (1); Clénet, Stéphane (2)
1: Universite Lille 1, France; 2: Arts et Métiers ParisTech Lille, L2ep, France

PC3.10 (ID 454)
Comparison of Residual and Equilibrated Error Estimators for FEM Applied to Magnetostatic Problems
Tang, Zuqi (1); Le Menach, Yvonnick (1); Creusé, Emmanuel (1); Nicaise, Serge (2); Piriou, Francis (1); Nemitz, Nicolas (3)
1: Université Lille 1, France; 2: Université de Valenciennes; 3: EDF-R&D

PC3.11 (ID 467)
Mortar Method using Bi-orthogonal Functions Applied to Magnetodynamic Potential Formulation
Henneron, Thomas (1); Aubertin, Mathieu (2); Piriou, Françis (1); Mipo, Jean-Claude (2)
1: Universite Lille 1, L2ep, France; 2: Valeo Systèmes Electriques

PC3.12 (ID 488)
Time-Domain Modeling of Saturation in Conformal Mapping Approach for Permanent Magnet Synchronous Machines
Hafner, Martin; Franck, David; Hameyer, Kay
Institute of Electrical Machines, Germany

PC3.13 (ID 527)
A Local Discontinuous Galerkin Method for Eddy Current Field Analysis in High-speed Moving Conductors
Zhao, Yanpu; Zhang, Xiu; Ho, S. L.; Fu, W. N
The Hong Kong Polytechnic University, China, Peoples Republic of

PC3.14 (ID 537)
Torque Analysis of a Radial Flux Air-Cored Permanent Magnet Machine with a Double-Sided Rotor and Non-Overlapping Windings
Randewijk, Peter Jan
Stellenbosch University, South Africa

PC3.15 (ID 547)
Eddy Currents and Corner Singularities
Buret, François (1); Dauge, Monique (2); Dular, Patrick (3); Krähenbühl, Laurent (1); Péron, Victor (4); Perrussel, Ronan (1); Poignard, Clair (5); Voyer, Damien (1)
1: Laboratoire Ampère (CNRS UMR5005); 2: IRMAR (CNRS UMR6625); 3: F.R.S.-FNRS; 4: LMAP (CNRS UMR5142); 5: INRIA Bordeaux-Sud-Ouest

Session PC4: Coupled Problems (I)

11:30-12:30 – Bayside Gallery

PC4.1 (ID 102)
Equivalent Formulas for Global Magnetic Force Calculation from Finite Element Solution
Demenko, Andrzej
Poznan University of Technology, Poland

PC4.2 (ID 145)
The Cooling Analysis of Large Asynchronous Motor Based on Coupled Calculation of Electromagnetic, Fluid and Thermal Field
Zhang, Yujiao
Wuhan University, China, China, Peoples Republic of

PC4.3 (ID 147)
Electromagnetic Vibration Analysis of a Magnetic Gear Employing the 3-D Finite Element Method
Niguchi, Noboru; Hirata, Katsuhiro
Osaka University, Japan

PC4.4 (ID 172)
Boundary Element Solution of Electromagnetic and Bioheat Equations for the Simulation of SAR and Temperature Increase in Biological Tissues
Bottauscio, Oriano (1); Chiampi, Mario (2); Zilberti, Luca (1)
1: Istituto Nazionale di Ricerca Metrologica, Italy; 2: Politecnico di Torino, Dip. Ingegneria Elettrica, Italy

PC4.5 (ID 178)
Coupled Multi-physical Fields Calculations and Analysis of Asynchronous Motor with Axial Ventilation
Zhang, Yujiao
Wuhan University, China, Peoples Republic of

PC4.6 (ID 182)
A Cell Method Formulation of Three Dimensional Electro-Thermo-Mechanical Contact Problems with Mortar Discretization
Moro, Federico (1); Alotto, Piergiorgio (1); Freschi, Fabio (2); Guarnieri, Massimo (1)
1: Dipartimento di Ingegneria Elettrica, Università di Padova, Italy; 2: Dipartimento di Ingegneria Elettrica, Politecnico di Torino, Italy

PC4.7 (ID 187)
Numerical Analysis of Sampling Streak Camera for Higher Temporal Resolution Operation
Kawaguchi, Hideki (1); Ito, Yoshihiro (2)
1: Muroran Institute of Technology, Japan; 2: Yuge National College for Maritime Technology

PC4.8 (ID 190)
Numerical Analysis of the Amplification Process of the Micro Channel Plate (MCP) in the Framing Camera
Yoshihiro (1); Kawaguchi, Hideki (2); Gjonaj, Erion (3); Weiland, Thomas (3)
1: Yuge National College of Maritime Technology, Japan; 2: Muroran Institute of Technology; 3: Technische Universitaet Darrmstadt

PC4.9 (ID 221)
Integrated Study and Optimization of HTS SMES Based on Circuit and Magnetic Field Analysis
Chen, Xiao-Yuan (1); Jin, Jian-Xun (1); Xin, Ying (2); Zhu, Jian-Guo (3); Guo, You-Guang (3)
1: University of Electronic Science and Technology of China, China, Peoples Republic of; 2: Innopower Superconductor Cable Co., Ltd, China, Peoples Republic of; 3: University of Technology Sydney, Australia

PC4.10 (ID 244)
Comparison between Pseudospectral and Discrete Geometric Methods for Modelling Quantization Effects in Nanoscale Electron Devices
Trevisan, Francesco (1); Specogna, Ruben (1); Breda, Dimitri (2); Esseni, David (1); Paussa, Alan (1); Vermiglio, Rossana (2)
1: Universita' di Udine, Italy, Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica; 2: Universita' di Udine, Italy, Dipartimento di Matematica e Informatica

PC4.11 (ID 268)
Cathodic Current Density Distribution Modeling in Proton Exchange Membrane Fuel Cells
Trevisan, Francesco (1); Moro, Federico (2); Specogna, Ruben (1); Stella, Andrea (2)
1: Universita' di Udine, Italy, Dipartimento di Ingegneria Elettrica, Gestionale e Meccanica; 2: Universita' di Padova, Italy, Dipartimento di Ingegneria Elettrica

PC4.12 (ID 275)
Discontinuous Galerkin Method for 2D Simulations of Streamer Discharges in Nitrogen
Zhuang, Chijie; Zeng, Rong; Zhang, Bo
Tsinghua University, China, Peoples Republic of

PC4.13 (ID 285)
Numerical Simulation of Onset Conditions for Corona Discharges on Stranded Conductors
Zheng, Yuesheng; He, Jinliang; Zhang, Bo; Zeng, Rong
Tsinghua University, China, Peoples Republic of

PC4.14 (ID 329)
Coupled Numerical Simulation between Electromagnetic and Structural Models: Influence of the Supply Harmonics for Synvhronous Machines Vibrations
Pellerey, Pierre; Lanfranchi, Vincent; Friedrich, Guy
UTC, France

PC4.15 (ID 336)
Numerical Method to Solve Problems of Electromagnetic Forming of Thin Flat Plates in Matlab
Paese, Evandro (1); Homrich, Roberto (1); Geier, Martin (2); Pacheco, Joyson (2)
1: Delet Ufrgs, Brazil; 2: Promec Ufrgs, Brazil

Session PC5: Numerical Techniques (V)

11:30-12:30 – Bayside Gallery

PC5.2 (ID 653)
Method for Determining Relaxation Factor for Modified Newton-Raphson Method for Non-linear Systems
Rodriguez, Eric (2); Pelissier, Valene (1); Meunier, Gerard (3)
1: NAG ltd, UK; 2: Cedrat, France; 3: G2Elab, France

PC5.3 (ID 661)
Optimization of Electrostatic Devices Thanks to a Hybrid BEM/FMM Method
Guibert, Arnaud (1); Lebensztajn, Luiz (1); Chadebec, Olivier (2); Coulomb, Jean-Louis (2)
1: LMAG, Brazil; 2: G2ELab, France

PC5.4 (ID 664)
Numerical Design of an Optical Cavity with Plasmonic Diffraction Grating
Alves, Savio; Orlando, Alberto
ITA - Instituto Tecnologico de Aeronautica, Brazil

PC5.5 (ID 668)
Induction Machines Modeling with Meshless Methods
Coppoli, Eduardo Henrique Da Rocha (1); Mesquita, Renato Cardoso (2); Silva, Renato Simões (3)
1: Centro Federal De Educação Tecnológica De Minas Gerais, Brazil; 2: Universidade Federal De Minas Gerais, Brazil; 3: Laboratório Nacional De Computação Científica, Brazil

PC5.6 (ID 679)
A Study of Preisach Model for Improving Numerical Stabilities by Using M-B Variables
Won, Hyuk (1); Chun, Hyun Ju (2); Yang, Chang Seob (2); Park, Gwan Soo (1)
1: Pusan National University, Korea, South (Republic of); 2: Agency for Defense Development, Korea, Sout (Republic of)

PC5.7 (ID 684)
Analysis of Printed Rotor Winding DC Motor with Analytical and 3D Finite Element Method
Hong, Sun-Ki; Kim, Bum-Hoon
Hoseo University, Korea, South (Republic of)

PC5.8 (ID 685)
On Error Correction Methods for Acceleration of Convergence
Igarashi, H.; Watanabe, Y.; Watanabe, K.
Hokkaido University, Japan

PC5.9 (ID 696)
Orthogonalized Infinite Edge Element Method –Convergence Improvement by Orthogonalization of Hilbert Matrix in Infinite Edge Element Method
Wakao, Shinji (1); Tamitani, Satoshi (1); Tsuzaki, Kenta (1); Tokumasu, Tadashi (2); Takahashi, Yasuhito (3); Kameari, Akihisa (4); Igarashi, Hajime (5); Fujiwara, Koji (3); Ishihara, Yoshiyuki (3)
1: Waseda University, Japan; 2: Toshiba Corporation Power Systems Company, Japan; 3: Doshisha University, Japan; 4: Science Solutions International Laboratory, Japan; 5: Hokkaido University, Japan

PC5.10 (ID 700)
Effects of a Remanent Magnetization on the Detection Signals of the Metal Loss in MFL type NDT by using M-B Variable Preisach Model
Won, Hyuk (1); Seo, Kang (2); Yun, Seung ho (1); Park, Gwan Soo (1)
1: Pusan National University, Korea, South (Republic of); 2: Hyosung Corportation, Korea, South (Republic of)

PC5.11 (ID 704)
Voxel Based Finite Element Method Using Homogenization
Watanabe, Kota (1); Iijima, Yosuke (2); Kawano, Kenji (2); Igarashi, Hajime (1)
1: Hokkaido University, Japan; 2: Taiyo Yuden Co., Ltd.

PC5.12 (ID 709)
Contactor Parameter Computation and Analysis of Air Circuit Breaker with Permanent Magnet Actuator
Fang, Shuhua (1); Lin, Heyun (1); Ho, S. L. (2); Wang, Xianbing (1); Jin, Ping (1)
1: Southeast University, Peoples Republic of China; 2: Hong Kong Polytechnic University, Kowloon, Hong Kong

PC5.13 (ID 713)
Application of Extended Element-Free Galerkin Method to Nonlinear Problem
Saitoh, Ayumu (1); Itoh, Taku (2); Matsui, Nobuyuki (1); Kamitani, Atsushi (3)
1: Graduate School of Engineering, University of Hyogo; 2: Faculty of Science and Technology, Seikei University; 3: Graduate School of Science and Engineering, Yamagata University

PC5.14 (ID 717)
Large-scale Parallel Magnetic Analysis using Hierarchical Domain Decomposition Tool with Refine Function
Sugimoto, Shin-Ichiro; Murotani, Kohei; Kawai, Hiroshi; Yoshimura, Shinobu
The University of Tokyo, Japan

PC5.15 (ID 719)
Analysis of Uniform Magnetic Field Problem by Edge Elements – Effects of Reduced Integration and High Order Elements
Okamoto, Yoshifumi (1); Takahashi, Yasuhito (2); Fujiwara, Koji (2); Ahagon, Akira (3); Kameari, Akihisa (3); Ikeda, Fumiaki (4); Sato, Shuji (1)
1: Utsunomiya University, Japan; 2: Doshisha University, Japan; 3: Science Solutions International Laboratory, Inc., Japan; 4: Photon, Inc., Japan

Session PC6: Electric Machines and Drives (VIII)

11:30-12:30 – Bayside Gallery

PC6.1 (ID 697)
Optimum LIM Interval Selection of Vector Controlled Moving Secondary Plate Conveyor System Using FEM & SUMT for Constant Speed Control
Lee, Jung Ho; Jun, Myung Jin; Lee, Byeong Do
Hanbat National University, Korea, South (Republic of)

PC6.2 (ID 701)
Initial Design and Dynamic Performance of Linear Switched Reluctance Motor with Design Range considering Continuous Thrust Generation and Saturation according to Design Factor
Park, Ji-hoon; Jang, Seok-myeong; Park, Yu-seop; Choi, Jang-young
Chungnam National University, Korea, South (Republic of)

PC6.3 (ID 703)
Development of Lumped-Parameter Thermal Model for Axial Flux Permanent Magnet Synchronous Machine
Li, Jian; Choi, Da-Woon; Cho, Yun-Hyun
Dong-A University, Korea, South (Republic of)

PC6.4 (ID 706)
Thrust Performance Analysis of a Flux-switching Permanent Magnet Linear Motor for Electromagnetic Launch Systems
Huang, Lei; Yu, Haitao; Hu, Minqiang; Zhao, Jing
Southeast University, China, Peoples Republic of

PC6.6 (ID 711)
A Sensitivity Analysis Method for Equivalent Parameter Extraction of Transient Magnetic Field Problems with Internal Coupled Circuits
Ho, S. L. (1); Niu, Shuangxia (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

PC6.7 (ID 723)
Eddy Current Calculation of Solid Components in Fractional Slot Axial Flux Permanent Magnet Synchronous Machines
Li, Jian; Choi, Da-Woon; Cho, Yun-Hyun
Dong-A University, Korea, South (Republic of)

PC6.8 (ID 727)
Analysis of Torque Pulsation considering Interior Permanent Magnet Rotor Rib Shape using Response Surface Methodology
Jang, Seok-Myeong (1); Hwang, Seon-Ik (1); Im, Young-Hun (1); Choi, Jang-Young (1); Lee, Sung-Ho (2)
1: Chungnam National University, Korea, South (Republic of); 2: Korea Institute of Industrial Technology Gwangju Research Center

PC6.9 (ID 731)
Analysis on Eddy Current Losses of Permanent Magnet Synchronous Motor with Double Sleeves Rotor using Electromagnetic Field Theory
Jang, Seok-Myeong (1); Ahn, Ji-hun (1); Ko, Kyoung-Jin (1); Choi, Jang-Young (1); Lee, Yong-Bok (2)
1: Chungnam national university, Korea, South (Republic of); 2: Korean Institute of Science and Technology

PC6.10 (ID 735)
Analysis of Torque Performance A High Speed PM Synchronous Motor using v/f Control with Current Angle Tracing Concepts
Jang, Seok-Myeong (1); Ahn, Ji-hun (1); Ko, Kyoung-Jin (1); Choi, Jang-Young (1); Lee, Sung-Ho (2)
1: Chungnam National University, Korea, South (Republic of); 2: Korea Institute of Industrial Technology Gwangju Research Center

PC6.11 (ID 736)
Comparative Analysis on Axial Flux Machine with Halbach/Vertical Magnetized PM for Wind Power Generator by Flux Leakage Computation
Jang, Seok-Myeong (1); Park, Yu-Seop (1); Choi, Jang-Young (1); Ko, Kyoung-Jin (1); You, Dae-Joon (2); Park, Young-Tae (3)
1: Chungnam National University, Korea, South (Republic of); 2: Cheongyang Provincial College, Korea, South (Republic of); 3: Korea Research Institute of Standards and Science, Korea, South (Republic of)

PC6.12 (ID 737)
A Study of Asymmetric Magnetic Field for Surfaced Permanent Magnet Spherical Motor
Lee, Ho Joon (1); Kang, Dong Woo (1); Won, Sung Hong (2); Lee, Ju (1)
1: Hanyang University, South Korea, Korea, South (Republic of); 2: Dongyang Technical college, Seoul, South Korea

PC6.13 (ID 738)
Characteristic Analysis of Induction Motor with Eccentricity and Broken Rotor bar by Finite Element Method and Motor Current Signal Analysis
Jang, Seok-Myeong (1); Park, Yu-Seop (1); Choi, Jang-Young (1); You, Dae-Joon (2); Goo, Cheol-Soo (3)
1: Chungnam National University, Korea, South (Republic of); 2: Cheongyang Provincial College, Korea, South (Republic of); 3: Korea Institute of Nuclear Safety, Korea, South (Republic of)

PC6.14 (ID 739)
Approximate Optimization Design of High Power LSM for Thrust Force Ripple Reduction using Kriging Method
Ryu, Gwang-Hyeon (1); Ham, Sang-Hwan (1); Cho, Su-Yeon (1); Lee, Hyung-Woo (2); Lee, Ju (1)
1: Hanyang University, Korea, South (Republic of); 2: High-Speed Rail Eng. Corps, Korea Railroad Research Institute

PC6.15 (ID 744)
Characteristic Analysis and Efficiency Improvement of Linear Induction Motor considering Design Specification
Jang, Seok-Myeong (1); Kim, Jeong-Man (1); Park, Yu-Seop (1); Ko, Kyoung-Jin (1); Choi, Jang-Young (1); Cho, Han-Wook (2)
1: Electrical Engineering, Chungnam National University, Korea, South (Republic of); 2: Electric, Electronic & Communication Engineering Education, Chungnam National University, Korea, South (Republic of)

Session OC2: Numerical Techniques II

13:30-14:30 Bayside Auditorium A

OC2.1 (ID 805)
A Low-Frequency Approximation to the Maxwell Equations Simultaneously Considering Inductive and Capacitive Phenomena
Koch, Stephan; Schneider, Hermann; Weiland, Thomas
Technische Universitaet Darmstadt, Germany

OC2.2 (ID 564)
Time-Domain Surface Impedance Boundary Conditions Enhanced by Coarse Volume Finite-Element Discretisation
Sabariego, Ruth V. (1); Geuzaine, Christophe (1); Dular, Patrick (1); Gyselinck, Johan (2)
1: University of Liège, Belgium; 2: Université Libre de Bruxelles (ULB), Belgium

Session PC7: Static Fields and Quasi-Static Fields (V)

14:30-15:30 – Bayside Gallery

PC7.1 (ID 549)
2D Electrostatic Problems with Rounded Corners
Buret, François (1); Dauge, Monique (2); Dular, Patrick (3); Krähenbühl, Laurent (1); Péron, Victor (4); Perrussel, Ronan (1); Poignard, Clair (5); Voyer, Damien (1)
1: Laboratoire Ampère (CNRS UMR5005); 2: IRMAR (CNRS UMR6625); 3: F.R.S.-FNRS; 4: LMAP (CNRS UMR5142); 5: INRIA Bordeaux-Sud-Ouest

PC7.2 (ID 552)
Low Order Electro-Quasistatic Field Simulations Based on Proper Orthogonal Decomposition
Schmidthäusler, Daniel; Clemens, Markus
Bergische Universität Wuppertal, Germany

PC7.3 (ID 557)
Multislice Analytical Model of Axial Flux PM Machines
Tiegna, Huguette; Amara, Yacine; Barakat, Georges
GREAH (University of Le Havre), France

PC7.5 (ID 569)
Hybridizing Network Reluctance and Boundary Integral Methods: Comparisons on an E-core Actuator
Delinchant, Benoit (1); Coulomb, Jean-Louis (1); Chadebec, Olivier (1); Vrijsen, Nilles (2); Jansen, J.W. (2); Lomonova, Elena (2)
1: G2ELab Grenoble University, France; 2: Eindhoven University of Technology

PC7.6 (ID 572)
Physics Based Modeling of Power Converters from Finite Element Electromagnetic Field Computations
Nejadpak, Arash; Mohammed, Osama
Florida International Universiyu, United States of America

PC7.7 (ID 587)
A Fast and Robust BEM-FEM Coupling for Magnetostatics on Non-simply Connected Domains
Kielhorn, Lars; Pusch, David; Ostrowski, Joerg
ABB Switzerland Ltd. Corporate Research, Switzerland

PC7.9 (ID 612)
Identification of Brain Activity by Stochastic Algorithms
Di Barba, Paolo (1); Freschi, Fabio (2); Maria Evelina, Mognaschi (1); Fulvia, Palesi (3); Anna, Pichiecchio (3); Maurizio, Repetto (2); Antonio, Savini (1)
1: Politecnico di Torino, Italy; 2: Universita' di Pavia, Italy; 3: I.R.C.C.S. Neurological Institute ``C. Mondino'', Italy

PC7.10 (ID 626)
Discontinuous Galerkin Method for Computing Induced Fields in Superconducting Materials
Kameni, Abelin (1); Lambrechts, Johanthan (2); Remacle, Jean-François (2); Mezani, Smail (3); Geuzaine, Christophe (1)
1: Université de Liège, Belgium; 2: Université catholique de Louvain, Belgium; 3: Université Henri Poincaré Nancy, France

PC7.11 (ID 628)
Computation of Induced Fields into the Human Body by using Dual Formulations
Scorretti, Riccardo (1); Sabariego, Ruth (2); Morel, Laurent (1); Geuzaine, Christophe (2); Burais, Noel (1); Nicolas, Laurent (1)
1: Laboratoire Ampère, University of Lyon, France; 2: Applied Computational Electromagnetics (ACE), University of Liege, Belgium

PC7.12 (ID 634)
Refinement of Non-Linear Magnetic Models via a Finite Element Subproblem Method
Dular, Patrick (1); Krähenbühl, Laurent (2); Sabariego, Ruth V. (1); Ferreira da Luz, Mauricio V. (3); Kuo-Peng, Patrick (3); Geuzaine, Christophe (1)
1: University of Liege, Belgium; 2: Université de Lyon, France; 3: UFSC, Brazil

PC7.13 (ID 637)
Three-dimensional Quasi-transient Simulation for Electromagnetic Field by Using Current Vector Calculation and Coil Mesh Generation
Kang, Dong-Woo (1); Go, Sung-Chul (1); Won, Sung-Hong (2); Lee, Hyung-Woo (3); Kim, Jae-Hyuck (4); Lee, Ju (1)
1: Hanyang university, Korea, South (Republic of); 2: Dongyang Technical college, Korea, South (Republic of); 3: Korea Railroad Research Institute, Korea, South (Republic of); 4: Wonkwang University, Korea, South (Republic of)

PC7.14 (ID 650)
Hybrid-Mixed Formulation for Static-Current Flow Problem Compared with Conventional Formulation
Rondot, Loic (2); Carpentier, Anthony (1); Perrussel, Ronan (3); Guerin, Christophe (4)
1: Cedrat, France; 2: G2Elab, France; 3: Ampére, France; 4: Cedrat, France

PC7.15 (ID 654)
TWT Beam Transport Design Tools Based on FEM and the Particle Path Approach
Xavier, Cesar Candido (1); Motta, Claudio Costa (2)
1: Instituto de Pesquisas Energéticas e Nucleares/CNEN-SP; 2: University of Sao Paulo, Brazil

Session PC8: Coupled Problems (II)

14:30-15:30 – Bayside Gallery

PC8.1 (ID 337)
A Novel Multiphysics Design Method of High Speed Permanent Magnet Synchronous Machine
Guo, Hong; Li, Yanming; Qian, Hao; Xie, Qingming
Beijing University of Aeronautics and Astronautics, China, Peoples Republic of

PC8.2 (ID 340)
Numerical Modeling of Induction Shrink-Fits in Monolithic Formulation
Karban, Pavel (1); Kotlan, Vaclav (1); Dolezel, Ivo (2)
1: University of West Bohemia, Czech Republic; 2: Czech University of Technology, Czech Republic

PC8.3 (ID 343)
Enhanced Acoustic Emission Technology Induced by Electromagnetic Stimulation with External Magnetic Field
Jin, Liang; Yang, Qingxin; Liu, Suzhen; Zhang, Chuang

Hebei University of Technology, China, Peoples Republic of

PC8.4 (ID 354)
Magnetic Field Gradients and Fluid Flow Computation for Design of Magnetic Chromatography to Separate Magnetic Particles
Noguchi, So (1); Kim, SeokBeom (2)
1: Hokkaido University, Japan; 2: Okayama University, Japan

PC8.5 (ID 360)
3D Quench Simulation of Superconducting Magnets with Adaptive Time-Stepping and Mesh-Generation
Chen, Jiangbo; Jiang, Xiaohua
Tsinghua University, China, Peoples Republic of

PC8.6 (ID 374)
Higher-Order Co-Simulation of Field-Circuit Coupled Eddy-Current Problems
Schöps, Sebastian (1); De Gersem, Herbert (2); Bartel, Andreas (1)
1: Bergische Universität Wuppertal, Germany; 2: Katholieke Universiteit Leuven

PC8.7 (ID 383)
Hard-Coupled Numerical Model of Induction Heating of Thin Profile Plates in External Magnetic Field
Dolezel, Ivo (1); Ulrych, Bohus (2); Barglik, Jerzy (3)
1: Czech Technical University, Faculty of Electrical Engineering, Czech Republic; 2: University of West Bohemia, Faculty of Electrical Engineering, Czech Republic; 3: Silesian University of Technology, Faculty of Material Engineering and Metallurgy, Poland

PC8.8 (ID 394)
Calculation of Thermal Characteristics in Disconnecting Switch by 3-D Coupled Technique
Oh, Yeon-Ho (1); Song, Ki-Dong (1); Kim, H. J. (2); Lim, W. H. (2)
1: KERI, Korea, South (Republic of); 2: Kwang-Myung Electric Co.

PC8.9 (ID 415)
Numerical Simulation for Dielectrophoretic Separation of Micro-Particles in Moving Fluid and Electric Field
Baek, Myung Ki; Park, Il Han
Sungkyunkwan University, Korea, South (Republic of)

PC8.10 (ID 496)
Electro-Mechano-Fluidic Modelling of Microsystems using Finite Elements
Rochus, Véronique (1); Cardona, Alberto (2); Geuzaine, Christophe (3)
1: IMEC, Belgium; 2: UNL, CIMEC-INTEC, Argentina; 3: Université de Liège, Belgium

PC8.11 (ID 497)
An Experimentally Validated 3D Multi-physics Multi-scale Model for Electrical Interconnects
Guarnieri, Massimo (1); Majorana, Carmelo (2); Mazzucco, Gianluca (2); Moro, Federico (1)
1: Università di Padova, Dip. di Ingegneria Elettrica, Italy; 2: Università di Padova, Dip. di Costruzioni e Trasporti, Ital

PC8.12 (ID 504)
3-D Finite Element Analysis of Two-DOF Resonant Actuator under Vector Control
Hirata, Katsuhiro (1); Asai, Yasuyoshi (1); Ota, Tomohiro (2)

1: Osaka University, Japan; 2: Panasonic Electric Works, Ltd.

PC8.13 (ID 538)
Thermal Analysis of Interior Permanent-Magnet Synchronous Motor by Electromagnetic Field – Thermal Linked Analysis
Joo, Daesuk (1,2); Cho, Ju-Hee (1); Woo, Kyungil (2); Kim, Byung-Taek (3); Kim, Dae-Kyong (1)
1: Korea Electronics Technology Institute, Korea, South (Republic of); 2: Pukyong National University; 3: Kunsan National University

PC8.14 (ID 542)
Estimation of Iron Loss of PMSM Used for Deep-sea Electromagnetic Propeller
Li, Jianjun; Xu, Yongxiang; Zou, Jibin
Harbin Institute of Technology, China, Peoples Republic of

PC8.15 (ID 544)
Research on Thermal Characteristics of Submersible Motor Used for Electromagnetic Propeller in Deep-sea Human Occupied Vehicle
Li, Jianjun; Xu, Yongxiang; Zou, Jibin
Harbin Institute of Technology, China, Peoples Republic of

Session PC9: Numerical Techniques (VI)

14:30-15:30 – Bayside Gallery

PC9.1 (ID 770)
Analysis of Multilayer Circuits by an Efficient Iterative Technique
Serres, Alexandre; Fontgalland, Glauco; P. de Farias, José Ewerton; Baudrand, Henri
UFCG, Brazil

PC9.2 (ID 772)
Magnetic Field Analysis with Nonconforming Voxel Modelling Using the Nested Geometric Multigrid Method
Odawara, Shunya; Gao, Yanhui; Muramatsu, Kazuhiro
Saga Univ., Japan

PC9.3 (ID 780)
Construction of a Two-Dimensional Finite Difference Time Domain Method Based on a Simplex Grid
Jiao, Chaoqun (1,2); Xia, Zhanjun (1,2); Gao, Xin (1,2); Ho, S. L. (3); Fu, W. N. (3)
1: Beijing Jiaotong University, China, Peoples Republic of; 2: State Key Laboratory of Millimeter Waves, China, Peoples Republic of; 3: Department of Electrical Eng., The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

PC9.4 (ID 784)
A New Methodology for Early Stage Magnetic Modeling and Simulation of Complex Electronic Systems
Martins, Olivier (1); Guédon, Stéphane (2); Maréchal, Yves (1)
1: Grenoble Electrical Engineering Laboratory (G2Elab), France; 2: Docea Power, France

PC9.5 (ID 787)
An Improvement of Convergence in Finite element Analysis with Infinite Element Using Deflation
Ito, Hiroki; Watanabe, Kota; Igarashi, Hajime

Hokkaido University, Japan

PC9.6 (ID 800)
Analysis of a SPM Motor Model Core Considering Vector Magnetic Property under High Magnetic Flux Density Conditions
Sato, Takeru; Todaka, Takashi; Enokizono, Masato
Oita University, Japan

PC9.7 (ID 803)
Finite Element Analysis by using Three-Dimensional Laminate core Elements
Ishikawa, Seiji; Todaka, Takashi; Enokizono, Masato
Oita University, Japan

PC9.8 (ID 822)
Use of Overlapping Finite Elements for Connecting Arbitrary Surfaces with Dual Formulations
Zaidi, Houda; Santandrea, Laurent; Krebs, Guillaume; Le Bihan, Yann
LGEP, France

PC9.9 (ID 838)
A Parallel Algebraic Multigrid through Lifting Technique, with Application in Circuit Simulation Matrices
Pereira, Fabio Henrique (1); Nabeta, Silvio (2)
1: Nove de Julho University, UNINOVE, Brazil; 2: São Paulo University, USP, Brazil

PC9.10 (ID 846)
2D Mesh Generator for Electromagnetic Fields Simulation
Firmino, Luciana; Baldini, Mario
GEMCO, Brazil

PC9.11 (ID 853)
The Broad Sense Chain-Making and Chain-Coupling Theorems of Element Grid in 2-D Problems
Xiong, Nan
Institute of Electrical Engineering, Chinese Academy of Sciences, China, Peoples Republic of

PC9.12 (ID 854)
A Finite-Element Variable Time-Stepping Algorithm for the Solution of the Electromagnetic Diffusion Equation
Ovando Martinez, Roberto B B; Arjona Lopez, Marco A; Hernandez Flores, Concepcion
Instituto Tecnologico de la Laguna, Mexico

PC9.13 (ID 864)
Time Domain Approach of the Ion Flow Field of Bipolar HVDC Transmission Lines
Yin, Han (1); Zhang, Bo (1); He, Jinliang (1); Zeng, Rong (1); Li, Ruihai (2); Liu, Lei (2)
1: Tsinghua University, China, Peoples Republic of; 2: Electric Power Research Institute, China Southern Power Grid, China, Peoples Republic of

PC9.14 (ID 873)
Two-scale FEM for the Linear Eddy Current Problem in 3D
Hollaus, Karl; Schöberl, Joachim
Vienna University of Technology, Austria

Session PC10: Electric Machines and Drives (IX)

16:00-17:00 – Bayside Gallery

PC10.1 (ID 745)
Design Algorithm of Barriers and Magnets in the Rotor for LSPM Motor
Kim, Won-Ho; Kim, Kwang-Soo; Jang, Ik-Sang; Lee, Jae-Jun; Lee, Ki-Doek; Lee, Ju
Hanyang Univ., Korea, South (Republic of)

PC10.2 (ID 746)
Optimum Design of IPMSM for Electric Motorcycle considering High Speed and High Efficiency Operation
Lee, Ki-Doek; Kim, Won-Ho; Jin, Chang-Sung; Jang, Ik-Sang; Kim, Mi-Jung; Lee, Jae-Jun; Lee, Ju
Hanyang University, Korea, South (Republic of)

PC10.3 (ID 747)
Dynamic Characteristic Analysis of Linear Induction Motor for Magnetic Levitation Vehicle Propulsion System considering Operating Condition
Jang, Seok-Myeong (1); Park, Yu-Seop (1); Park, Ji-Hoon (1); You, Dae-Joon (2); Lee, Kyoung-Bok (3); Cho, Han-Wook (4)
1: Electrical Engineering, Chungnam National University, Korea, South (Republic of); 2: Cheongyang Provincial College, Korea, South (Republic of); 3: Daejeon Metropolitan Express Transit Corporation, Korea, South (Republic of); 4: Electric, Electronic & Communication Engineering Education, Chungnam National University, Korea, South (Republic of)

PC10.4 (ID 748)
Current and Speed Characteristic of Linear Induction Motor according to Reference Scenario and Voltage/Frequency Ratio
Jang, Seok-Myeong (1); Kim, Jeong-Man (1); Park, Yu-Seop (1); Ko, Kyoung-Jin (1); You, Dae-Joon (2); Lee, Kyoung-Bok (3)
1: Chungnam National University, Korea, South (Republic of); 2: Cheongyang Provincial College, Korea, South (Republic of); 3: Daejeon Metropolitan Express Transit Corporation, Korea, South (Republic of)

PC10.5 (ID 749)
Analytical Estimation of Acceleration/Deceleration Time in the Flywheel Battery System with Slotless PMSM/G
Choi, Ji-hwan (1); Jang, Seok-Myeong (1); You, Dae-Joon (2); Han, Sang-Chul (3)
1: Chungnam National University, Korea, South (Republic of); 2: Chungnam Provincial Cheongyang College; 3: Korea Electric Power Research Institute

PC10.6 (ID 752)
Characteristics Analysis of Single Phase Induction Motor by Equivalent Circuit Method Considering Saturation Factor
Cho, SuYeon; Ham, SangHwan; Jang, IkSang; Ryu, GwangHyeon; Kim, MiJung; Lee, Ju
Hanyang University, Korea, South (Republic of)

PC10.7 (ID 753)
Characteristic Analysis on PMSMs with Three Types of Diametrically Magnetized Rotors under Magnetic Circuit Construction Conditions
Jang, Seok-Myeong (1); Koo, Min-Mo (1); Park, Yu-Seop (1); Choi, Jang-Young (1); Lee, Sung-Ho (2)

1: Chungnam National University, Korea, South (Republic of); 2: Korea Institute of Industrial Technology, Korea, South (Republic of)

PC10.8 (ID 755)
A Study on the Simulated Torque Table with Nonlinear Datasets of IPMSM for HEV
Kim, Won-Ho; Jin, Chang-Sung; Jang, Ik-Sang; Kim, Mi-Jung; Lee, Ki-Doek; Lee, Ju
Hanyang Univ., Korea, South (Republic of)

PC10.9 (ID 759)
Optimal Shape Design of Rotor Bar of Three-phase Squirrel Cage Induction Motor for NEMA Design D Torque-speed Characteristics
Koh, C. S. (1); Zhang, Dianhai (1); Li, Wei (1); Park, Chang Soon (2)
1: Chungbuk National University, Korea, South (Republic of); 2: Korea University of Technology and Education, Korea, South (Republic of)

PC10.10 (ID 761)
Numerical Investigation on Torque Harmonics Reduction of Interior Permanent Magnet Synchronous with Concentrated Winding
Lee, Seungho; Lee, Dongsu; Kim, Yong-Jae; Jung, Sang-Yong
Dong-A Uni., Korea, South (Republic of)

PC10.11 (ID 762)
Electro-magnetic Losses Calculation and Reduction of High-speed Permanent Magnet Synchronous Motor using Measured Load Current Waveform with Harmonics and 2-D FEM
Jang, Seok-Myeong (1); Han, Cheol (1); Choi, Jang-Young (1); Lee, Yong-Bok (2)
1: Chungnam national university, Korea, South (Republic of); 2: Korea Institute of Science and Technology, Korea, South (Republic of)

PC10.12 (ID 764)
Research on the Electromagnetic Performance of an Axial Flux Permanent-Magnet Linear Synchronous Machine
Zheng, Ping; Tong, Chengde; Gan, Xuhui; Sui, Yi; Ke, Wenjing; Yan, Haiyuan
Harbin Institute of Technology, China, Peoples Republic of

PC10.13 (ID 768)
Permanent Magnet Temperature Estimation of IPMSM using Thermal Equivalent Circuit
Lee, Byeong-Hwa (1); Kim, Kyu-Seob (1); Song, Baik-Kee (1); Sun, Tao (1); Hong, Jung-Pyo (1); Kim, Young-Kyoun (2)
1: Hanyang University, Korea, South (Republic of); 2: Korea Electronics Technology Institute, Korea, South (Republic of)

PC10.14 (ID 771)
Design Criteria of Active Thrust Magnetic Bearing Using Improved Equivalent Magnetic Circuit Method and Finite Element Method
Jang, Seok-Myeong (1); Kim, Kwan-ho (1); Ko, Kyoung-Jin (1); Choi, Ji-Hwan (1); Sung, So-Young (2); Lee, Yong-Bok (3)
1: Chungnam National University, Korea, South (Republic of); 2: Korea Ocean Research & Development Institute, Korea, South (Republic of); 3: Korea Institute of Science and Technology, Korea, South (Republic of)

PC10.15 (ID 776)
Improved Design to Reduce Eddy Current Loss in Retain Ring in Superconducting Machines

Lee, Sang-Ho; Hong, Jung-Pyo
Hanyang University, Korea, South (Republic of)

Session PC11: Static Fields and Quasi-Static Fields (VI)

16:00-17:00 – Bayside Gallery

PC11.11 (ID 715)
Numerical Identification of Effective Multipole Moments of Polarizable Particles
Ogbi, Abdellah (1); Nicolas, Laurent (1); Perrussel, Ronan (1); Salon, Sheppard J. (2); Voyer, Damien (1)
1: Laboratoire Ampère (CNRS UMR5005); 2: Rensselaer Polytechnic Institute

PC11.12 (ID 733)
Considering Laminated Cores and Eddy Currents in 2D and 3D FE Simulation of Electrical Machines
Gyselinck, Johan (1); Geuzaine, Christophe (2); Sabariego, Ruth (2)
1: Université Libre de Bruxelles (ULB), Belgium; 2: University of Liège (ULg), Belgium

PC11.13 (ID 778)
Asymmetrical Arrangement of Coils in an Induction Heater to Improve Heat Distribution
Shi, Zhanghai (1); Cheng, K. W. E. (1); Xu, Wei (2)
1: Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: University of Technology, Sydney

PC11.14 (ID 796)
Comparison of a Direct and a Vector Potential Integral Equation Method
Albert, Jan; Banucu, Remus; Reinauer, Veronika; Scheiblich, Christian; Rucker, Wolfgang
Institute for Theory of Electrical Engineering, Germany

PC11.16 (ID 810)
Conformal Mapping: Schwarz-Christoffel Method for Flux-Switching PM Machines
Ilhan, Esin; Motoasca, Emilia; Paulides, Johan; Lomonova, Elena
Technical University of Eindhoven, Netherlands, The

PC11.17 (ID 816)
Approaches for Lightning Return Stroke Current Reconstruction
Ceclan, Andrei
Technical University of Cluj-Napoca, Romania

PC11.18 (ID 818)
Fast Computation of 3-D Eddy Current Problems with Integral Formulations using Wavelet Approximation Patterns
Banucu, Remus; Albert, Jan; Scheiblich, Christian; Reinauer, Veronika; Rucker, Wolfgang M.
University of Stuttgart, Germany

PC11.19 (ID 825)
Magnetic Field Analysis of Lesion Localization via GMR Probe
Yang, Wenrong (1); Yang, Qingxin (2); Zhang, Xiaojie (1); Xu, Guizhi (1); Hao, Xiaocong (1); Zhang Chuang (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: Tianjin Polytechnic University, China, Peoples Republic of

PC11.20 (ID 323)
A New Integral Formulation for Eddy Currents Computation in Thin Conductive Shells
Tung, Le Duc (1); Gérard, Meunier (2); Olivier, Chadebec (2); Jean-Michel, Guichon (3)
1: Grenoble Electrical Engineering Laboratory, University of Grenoble, France; 2: Grenoble Electrical Engineering Laboratory, CNRS UMR 5269, Grenoble, France; 3: Grenoble Electrical Engineering Laboratory, Université Joseph Fourier, France

PC11.21 (ID 831)
Numerical Computation of Ohmic and Eddy-Current Winding Losses of Drive Transformers Including Higher Harmonics of Load Current
Smajic, Jasmin; Hughes, Jillian; Steinmetz, Thorsten; Pusch, David; Moenig, Wolfgang; Carlen, Martin
ABB Switzerland Ltd. Corporate Research, Switzerland

PC11.22 (ID 837)
Speedup of Integral-FEM Based Solution of Eddy Currents Testing Problems Using Graphical Processing Unit
Preda, Gabriel; Popa, Valentin; Hantila, Florea Ioan
Politehnica University of Bucharest, Romania

PC11.23 (ID 881)
Subproblem Approach for Thin Shell Dual Finite Element Formulations
Dang, Vuong Q. (1); Dular, Patrick (1); Sabariego, Ruth V. (1); Krähenbühl, Laurent (2); Geuzaine, Christophe (1)
1: University of Liege, Belgium; 2: Université de Lyon, France

PC11.24 (ID 885)
A Finite Element Subproblem Method for Position Change Conductor Systems
Dular, Patrick (1); Krähenbühl, Laurent (2); Sabariego, Ruth V. (1); Ferreira da Luz, Mauricio V. (3); Kuo-Peng, Patrick (3); Geuzaine, Christophe (1)
1: University of Liege, Belgium; 2: Université de Lyon; 3: UFSC, Brazil

Session PC12: Coupled Problems (III)

16:00-17:00 – Bayside Gallery

PC12.1 (ID 548)
Application of Domain Decomposition combined Radial Basis Function Collocation Method in Moving Conductor Eddy Current Magnetic Problems
Yang, Guangyuan (1); Lei, Gang (1,2); Chen, Xiaoming (1); Shao, Keran (1); Guo, Youguang (2); Zhu, Jianguo (2); Lavers, J.D. (3)
1: Huazhong University of Science and Technology, China, Peoples Republic of; 2: University of Technology, Australia; 3: University of Toronto, Canada

PC12.2 (ID 550)
Finite Element Modeling of Deformable NEMS Taking into Account Mechanical Contact
Galopin, Nicolas; Pham-Quang, Phuong; Delinchant, Benoît; Coulomb, Jean-Louis
Grenoble Electrical Engineering Laboratory, France

PC12.3 (ID 586)
Dynamic Analysis Modeling under Dynamic Eccentricity — Stator Inter-turn Fault Coupling with Design Technique for Reliability Rise of IPM Motor
Reu, Jin-Wook (1); Park, Jun-Kyu (1); Hur, Jin (1); Kim, Byeong-Woo (1); Kang, Gyu-Hong (2)
1: University of Ulsan, Korea, South (Republic of).; 2: Korea Marine Equipment Research Institute, Busan, Korea, South (Republic of).

PC12.4 (ID 597)
Frequency Domain Evaluation of Transient Finite Element Simulations of Induction Machines
Rainer, Siegfried (1); Bíró, Oszkár (1); Stermecki, Andrej (1,3); Weilharter, Bernhard (2,3)
1: Institute for Fundamentals and Theory in Electrical Engineering, Austria; 2: Institute for Electrical Drives and Machines, Austria; 3: Christian Doppler Laboratory for Multiphysical Simulation, Analysis and Design of Electrical Machines, Austria

PC12.5 (ID 716)
Coupled Three Dimensional Numerical Calculation of Forces and Stresses on the End Windings of Large Turbo Generators via Integral Formulation
Albanese, R. (1); Calvano, F. (1); Dal Mut, G. (2); Ferraioli, F. (2); Formisano, A. (3); Marignetti, F. (4); Martone, R. (3); Rubinacci, G. (1); Tamburrino, A. (4); Ventre, S. (4)
1: Dip. Di Ingegneria Elettrica, Univ. di Napoli "Federico II", Italy; 2: Ansaldo Energia, Italy; 3: Dip. di Ingegneria dell'Informazione, Seconda Università di Napoli, Italy; 4: DAEIMI, Univ. di Cassino, Italy;

PC12.6 (ID 725)
Second Order Moments in Linear Smart Material Composites
Corcolle, Romain; Daniel, Laurent
Laboratoire de Génie Electrique de Paris, France

PC12.7 (ID 740)
Plasma Analysis Method for Electrodeless Discharge Lamp Using 3-D FEM
Ota, Tomohiro (1); Hirata, Katsuhiro (2)
1: Panasonic Electric Works Analysis Center Co., Ltd.; 2: Osaka University

PC12.8 (ID 773)
Thermal Design of Natural Cooled Axial Flux Permanent Magnet Synchronous Generator Using Electromagnetic and Fluid-Dynamical Finite-Element Analysis
Li, Jian; Song, Xueguan; Jo, Chang-Hum; Cho, Yun-Hyun
Dong-A University, Korea, South (Republic of)

PC12.9 (ID 815)
Lateral and Angular Misalignment Analytical Study for a Novel Witricity Charger
Wang, Junhua (1,2); Ho, S. L. (1); Fu, W. N. (1); Sun, Mingui (2)
1: The Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, PA, USA

PC12.10 (ID 823)
Study of Giant Magnetostrictive Acceleration Sensors Considering Both Direct Magnetostictive Effect and Inverse Magnetostrictive Effect
Yan, Rongge (1); Yang, Qingxin (2); Yang, Shengnan (1); Li Yongjian (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: Tianjin Polytechnic University, China, Peoples Republic of

PC12.11 (ID 847)
Discharge Analysis in Dielectric Liquids by Fully Coupled Finite Element Method for Dissociation and Thermal Effects
Lee, Ho-Young; Jeong, Geun-Young; Lee, Se-Hee
Kyungpook National University, Korea, South (Republic of)

PC12.12 (ID 877)
The Study on the Numerical Computation of Magnetic Field Coupled with Fluid Field in a Magnetic Fluid Sensor
Gao, Xin (1,2); Zhang, Xiumin (1,2); Jiao, Chaoqun (1,2); Huang, Zhirong (1,2)
1: School of Electrical Engineering, Beijing Jiaotong University , China,; 2: State Key Laboratory of Millimeter Waves, China

PC12.13 (ID 216)
Genetic Algorithm Optimization for Antenna Excitations in Microwave Hyperthermia for Breast Cancer
Yin, Xiaoming; Bai, Baodong
Shenyang University of Technology, China, Peoples Republic of

PC12.14 (ID 642)
Multi-physics Design Rules of Permanent Magnet Synchronous Machine with Lumped Models
Bracikowski, Nicolas; Ilea, Dan; Gillon, Frederic; Hecquet, Michel
Univ. Lille Nord de France, ECLille, L2EP, France

PC12.15 (ID 827)
Magneto-thermal Coupling: A Conservative-based Method for Scalar Field Projection
Moreau, Olivier; Nemitz, Nicolas; Ould-Rouis, Yacine
Electricite De France R&D, France

PC12.16 (ID 819)
Software Coupling and Orchestration Tool to the Modeling of Multi-physic Problems.
Mokhtari, Lounes; Delinchant, Benoit; Coulomb, Jean-Louis; Le-Duc, Tung; Chadebec, Olivier; Guichon, Jean-Michel; Meunier, Gerard
Grenoble Electrical Engineering Laboratory, France

Friday 15 July 2011

Session OD1: Optimization

09:00-10:00 Bayside Auditorium A

OD1.1 (ID 264)
An Improved Cross-Entropy Method Applied to Inverse Problems
An, Siguang (3); Yang, Shiyou (2); Ho, Siu Lau (1); Ni, Peihong (2)
1: Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: College of Electrical Engineering, Zhejiang University, Hangzhou, 310027, China; 3: Department of Electrical Engineering, China Jiliang University, Hangzhou, 310018, China

OD1.2 (ID 732)
Multi-guiders and Cross-searching Approaches in Multi-objective Particle Swarm Optimization for Electromagnetic Problems
Koh, C.S.; Pham, Minh-Trien; Li, Wei
Chungbuk National University, Korea, South (Republic of)

Session PD1: Material Modelling (I)

10:00-11:00 – Bayside Gallery

PD1.2 (ID 128)
Dynamic Demagnetization Model of Permanent Magnets for Finite Element Analysis
Zhou, Ping (1); Lin, Dingsheng (2); Xiao, Yuming (1); Lambert,Nancy(1); Rahman, M. A.(2)
1: ANSYS, United States of America; 2: Memorial University of Newfoundland, Canada

PD1.3 (ID 191)
A Complete Model of Iron Losses Prediction in Electrical Machines Including Material Measurement, Data Fitting, FE Computation and Experiment Validation
Haisen, Zhao (1); Yingli, Luo (1); Ren H., Wang (2); Baldassari, Peter (3)
1: North China Electric Power University, China, Peoples Republic of; 2: Stanley Black & Decker Corporation; 3: MagneForce Software System Inc.

PD1.4 (ID 246)
Calibration of the Novel Sensing Structure in Three-Dimensional Magnetic Properties Measurement
Li, Yongjian (1,2); Zhu, Jianguo (2); Yang, Qingxin (1,3); Lin, Zhiwei (2); Guo, Youguang (2); Wang, Youhua (1)
1: Heibei University of Technology, China, Peoples Republic of; 2: University of Technology, Sydney; 3: Tianjin Polytechnic University

PD1.5 (ID 247)
Study of 3-D Tensor Magnetic Reluctivity Properties of Soft Magnetic Composite Materials
Li, Yongjian (1,2); Yang, Qingxin (1,3); Lin, Yuesheng (1,2); Zhu, Jianguo (2); Guo, Youguang (2); Lin, Zhiwei (2); Wang, Yi (2)
1: Heibei University of Technology, China, Peoples Republic of; 2: University of Technology, Sydney, Australia; 3: Tianjin Polytechnic University, China

PD1.6 (ID 270)
A Dynamic and Anisotropic Vector Hysteresis Model Based on Isotropic Vector Play Model for Non-Oriented Silicon Steel Sheet

Mastuo, Tetsuji; Miyamoto, Masaki
Kyoto University, Japan

PD1.7 (ID 299)
Magnetical Behaviour Representation Taking into Account the Temperature of a Magnetic Nanocrystalline Material
Chailloux, Thibaut; Raulet, Marie Ange; Martin, Christian; Joubert, Charles; Sixdenier, Fabien; Morel, Laurent
Laboratoire Ampere, France

PD1.8 (ID 300)
Homogenised Magnetic Diffusion: Influence of the Static Hysteresis Model
Chailloux, Thibaut; Raulet, Marie Ange; Martin, Christian; Joubert, Charles; Sixdenier, Fabien; Morel, Laurent
Laboratoire Ampere, France

PD1.9 (ID 318)
Numerical Dynamic Strong Coupled Model of Linear Magnetostrictive Actuators
Huang, Wenmei; Song, Guiying; Sun Ying; Wang Bowen; Zhang Chuang
Hebei University of Technology, China, Peoples Republic of

PD1.10 (ID 325)
Experimental and Numerical Investigations of the Inverse Magnetostriction-Based Mechanical Stress Sensing
Belahcen, Anouar; Peussa, Tommi
Aalto University, Finland

PD1.11 (ID 334)
Integration of a New Hysteresis Model in the Finite Elements Method
Scorretti, Riccardo (1); Sabariego, Ruth (2); Sixdeniers, Fabien (1); Ducharne, Benjamin (3); Raulet, Marie Ange (1)
1: Laboratoire Ampère, France; 2: University of Liège, Belgium; 3: Laboratoire LGEF, France

PD1.13 (ID 370)
Application of EBG Substrate to 4G Mobile Antenna for Power Absorption Reduction in Human Head
Ikeuchi, Ryo; Moirata, Shinya; Hirata, Akimasa
Nagoya Institute of Technology, Japan

PD1.14 (ID 382)
3D FE Modelling of Interlamination Short-circuits Taking into Account the Building Bar
Muller, Juliana Luisa (3); Benabou, Abdelkader (1); Henneron, Thomas (1); Piriou, Francis (1); Bastos, João Pedro Assumpção (2); Roger, Jean-Yves (3)
1: Université de Lille 1, France; 2: Universidade Federal de Santa Catarina; 3: EDF R&D

PD1.15 (ID 388)
Chaotic Harmony Search Approach Applied to Jiles-Atherton Vector Hysteresis Parameters Estimation
Coelho, Leandro dos S. (2,3); Costa e Silva, Marsil de A. (2); Leite, Jean Vianei (1)
1: GRUCAD/EEL/UFSC, Brazil; 2: PPGEPS/PUC/PR, Curitiba, PR, Brazil; 3: DELT/UFPR, Curitiba, PR, Brazil

Session PD2: Software Methodology

10:00-11:00 – Bayside Gallery

PD2.1 (ID 273)
State-of-the-art Programming Techniques of Finite Element Methods for Electromagnetic Field Computation
Chen, Ningning (1); Niu, Shuangxia (1); Ho, S.L. (1); Fu, W.N. (1); Zhu, Jianguo (2)
1: The Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering and Information Technology, University of Technology, Sydney, Australia

PD2.2 (ID 470)
A Parallel Implementation of dual-PEEC for Multicore and Multithreaded CPUs
Freschi, Fabio (1); Alotto, Piergiorgio (2)
1: Politecnico di Torino, Italy; 2: Università degli Studi di Padova

PD2.3 (ID 476)
Algorithms in ParAFEMImp: A Parallel and Wideband Impedance Extraction Program for Complicated 3-D Geometries
Cui, Tao (1); Chen, Junqing (2); Chen, Genlong (3); Zhu, Hengliang (3); Zeng, Xuan (3)
1: The Institute of Computational Mathematics and Scientific/Engineering Computing of Chinese Academy of Sciences, P. R. China; 2: Department of Mathematical Sciences, Tsinghua University, P.R. China; 3: ASIC & System State Key Lab., Microelectronics Dept. Fudan University, P.R. China

PD2.4 (ID 487)
Bidirectional Coupling - From 3D Field Simulation to Immersive Visualization Systems
Bündgens, Daniel (2); Hamacher, Andreas (2); Hafner, Martin (1); Kuhlen, Thorsten (2); Hameyer, Kay (1)
1: Institute of Electrical Machines -- RWTH Aachen University; 2: Virtual Reality Group -- RWTH Aachen University

PD2.5 (ID 521)
Power-Aware Parallel 3-D Finite Element Mesh Refinement Performance Modeling and Analysis on CUDA/MPI Multi-core and GPU Architectures
Ren, Da Qi (1,2); Suda, Reiji (1,2); Giannacopoulos, Dennis D. (3)
1: University of Tokyo, Japan; 2: 3JST, CREST, Japan; 3: McGill University, Canada

PD2.6 (ID 571)
Architecture Independent Performance Evaluation of Sparse Matrix-Vector Multiplication on Multi-Core Processors
Lowther, David; Moghnieh, Hussein
McGill University, Canada

PD2.7 (ID 595)
Identification of Permeability in Normal Direction of Anisotropic Sheets using FEM Mesh Adaption and Genetic Algorithms
Komeza, Krzysztof (1); Napieralska Juszczak, Ewa (2); Lecointe, Jean-Philippe (2); Hihat, Nabil (2); Di Barba, Paolo (3)
1: Technical University of Lodz, Poland; 2: Université d'Artois, Laboratoire Systèmes Electrotechniques et Environnement, France; 3: Department of Electrical Engineering of Pavia, Italy

PD2.8 (ID 657)
Mesh Decomposition for Efficient Parallel Computing of Electrical Machines by Means of FEM Accounting for Motion
Böhmer, Stefan (1); Lange, Enno (1); Hafner, Martin (1); Cramer, Tim (2); Bischof, Christian (2); Hameyer, Kay (1)
1: Institute of Electrical Machines, RWTH Aachen University; 2: RWTH Aachen University, Center for Computing and Communication

PD2.9 (ID 663)
VHDL-AMS to Support DAE-PDE Coupling and Multilevel Modeling
Rezgui, Abir; Gerbaud, Laurent; Delinchant, Benoit
G2ELAB, Grenoble Electrical Engineering lab, France

PD2.10 (ID 670)
Automatic Multi-GPU Code Generation Applied to Simulation of Electrical Machines
Rodrigues, Antonio Wendell de Oliveira (1); Guyomarc'h, Frédéric (1); Le Menach, Yvonnick (2); Dekeyser, Jean-Luc (1)
1: LIFL - USTL, France; 2: L2EP - USTL, France

PD2.11 (ID 734)
An Electromagnetic Circuit Simulator for Power Electronics
Zwysen, Jeroen; Jacqmaer, Pieter; Gelagaev, Ratmir; Driesen, Johan
ELECTA-ESAT K.U.Leuven, Belgium

PD2.12 (ID 797)
3-D Topology Optimization of Dielectric Resonator in Waveguide Structure Considering Higher Mode Incidence
Choi, Nak-Sun (1); Kim, Dong-Hun (1); Lee, Hyang-Beom (2); Byun, Jin-Kyu (2)
1: Kyungpook Nat'l. Univ., Korea, South (Republic of); 2: Soongsil University, Korea, South (Republic of)

PD2.13 (ID 798)
JCuda Vectorized and Parallelized Computation Strategy for Solving Integral Equations in Electromagnetism on a Standard Personal Computer
Rubeck, Christophe; Bannwarth, B., Chadebec, Olivier; Delinchant, Benoit; Yonnet, Jean-Paul; Coulomb, Jean-Louis
Grenoble Electrical Engineering Laboratory (G2Elab), France

PD2.14 (ID 809)
Object-Oriented Development of an Optimization Software in Java using Evolution Strategies
Reinauer, Veronika (1); Magele, Christian (2); Scheiblich, Christian (1); Stermecki, Andrej (2); Banucu, Remus (1); Albert, Jan (1); Jaindl, Michael (2); Rucker, Wolfgang M. (1)
1: University of Stuttgart, Germany; 2: University of Graz, Austria

PD2.15 (ID 814)
Parallel Realisation of the Element-by-Element FEM Technique by CUDA
Kiss, Imre; Gyimóthy, Szabolcs; Pávó, József
Budapest University of Technology and Economics, Hungary

Session PD3: Optimization (IV)

10:00-11:00 – Bayside Gallery

PD3.1 (ID 361)
Reconstruction of Deep Stress Corrosion Cracks Using Signals of the Pulsed Eddy Current Testing
Wang, Li (1); Xie, Shejuan (2); Chen, Zhenmao (1); li, Yong (1); Wang, Xiaowei (1); Takagi, Toshiyuki (2)
1: MOE Key Laboratory for Strength and Vibration, Xi'an Jiaotong University, China, Peoples Republic of; 2: Institute of Fluid Science, Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai, 980-8577, Japan

PD3.2 (ID 423)
The Electromagnetic Actuator Design Problem: An Adapted Interval Global Optimization Algorithm using Model Reformulation and Constraint Propagation
Mazhoud, Issam (1); Hadj-Hamou, Khaled (1); Bigeon, Jean (1); Remy, Ghislain (2)
1: G-SCOP - CNRS, Grenoble-INP-UJF, France; 2: LGEP / SPEE-Labs, CNRS UMR 8507, SUPELEC, Université Pierre et Marie Curie P6, Université Paris-Sud 11

PD3.3 (ID 462)
2D Resistivity Reconstruction via FEM-Based Bayesian Method
Li, Ying (1); He, Renjie (2); Rao, Liyun (3); Guo, Lei (1); Xu, Guizhi (1); Zhao, Huifang (1); Khoury, Dirar S (3); Yang, Wenrong (1); Wang, Youhua (1)
1: Hebei University of Technology, China, Peoples Republic of; 2: University of Texas at Houston, Houston, TX 77030, USA; 3: The Methodist Hospital Research Institute, Houston, TX 77030, USA

PD3.4 (ID 473)
Robust Analysis towards Robust Optimization in Engineering Design
Laura, Picheral (1); Khaled, Hadj-Hamou (1); Remy, Ghislain (2); Jean, Bigeon (1)
1: G-SCOP Laboratory, France; 2: LGEP / SPEE-Labs, France

PD3.5 (ID 531)
Sequential Kriging Metamodel Based Stochastic Global Optimization for TEAM Workshop Problem 22
Cho, Su-gil; Lee, Minuk; Lee, Tae Hee
Hanyang University, Korea, South (Republic of)

PD3.6 (ID 553)
Mixing Techniques to Compute Derivatives of Semi-numerical Models: Application to Magnetic Nano Switch Optimization
Pham-Quang, Phuong (1,2); Delinchant, Benoit (1); Ilie, Cristina (3); Slusanschi, Emil (3); Coulomb, Jean-Louis (1); Du Peloux, Bertrand (2)
1: Grenoble Electrical Engineering Laboratory, G2ELab; 2: Cedrat SA; 3: Computer Science and Engineering, University Politehnica of Bucharest

PD3.7 (ID 567)
Application of the Two-Level Response and Parameter Mapping for Solution of Inverse Problem in Eddy Current Testing type-NDT
Putek, Piotr Adam
Gent University, Belgium

PD3.8 (ID 568)
Shape Reconstruction of Defects in Multi-frequency Eddy Current Testing using the Level Set and Tellegen's Adjoint Method
Putek, Piotr Adam
Gent University, Belgium

PD3.9 (ID 570)
Comparison of Evolutionary and Rule-Based Strategies for Electromagnetic Device Optimization
Lowther, David; Ouyang, Jun
McGill University, Canada

PD3.10 (ID 573)
A Mapping Technique in Finite Element Method of Magnetic Field Computation for Reduction of Optimization Computation Time
Chen, Ningning (1); Ho, S. L. (1); Fu, W. N. (1); Zhu, Jianguo (2)
1: The HK Polytechnic University, Hong Kong S.A.R. - China; 2: Faculty of Engineering, University of Technology, Sydney, P.O. Box 123, Broadway NSW 2007, Australia

PD3.11 (ID 574)
A Moving Mesh Algorithm for Electromagnetic Devices Optimization Using Finite Element Method
Ho, S. L.; Chen, Ningning; Fu, W. N.
The HK Polytechnic University, Hong Kong S.A.R. - China

PD3.12 (ID 599)
Non-Dominated Sorting Genetic Algorithm Based on Reinforcement Learning to Optimization of Broad-Band Reflector Antennas Satellite
Bora, Teodoro C. (2); Lebensztajn, Luiz (1); Coelho, Leandro dos S. (2)
1: Escola Politécnica da Universidade de São Paulo, Brazil; 2: Automation and Systems Laboratory, Industrial and Systems Engineering Graduate Program, Pontifical Catholic University of Paraná

PD3.13 (ID 607)
Development of Interior Permanent Magnet Motors for Underwater Propulsions
Wang, Youlong; Wen, Xuhui; Zhang, Lei; Zhang, Jian
Institute of Electrical Engineering, Chinese Academy of Sciences, China, Peoples Republic of

PD3.14 (ID 610)
Optimal Flux Barrier Design of Interior Permanent Magnet Motor for Torque Ripple Reduction under Stress Constraint
Park, Seunggyun; Min, Seungjae; Hong, Jung-Pyo
Hanyang University, Korea, South (Republic of)

PD3.15 (ID 631)
Numerical Analysis and Performance Optimum of an HTS Suspension Propulsion System Driven by a SLIM
Zheng, Lu-Hai (1); Jin, Jian-Xun (1); Xu, Wei (2); Guo, You-Guang (2); Zhu, Jian-Guo (2)
1: School of Automation, University of Electronic Science and Technology of China, Chengdu, China; 2: Faculty of Engineering and Information Technology, University of Technology Sydney, Sydney, Australia

Session PD4: Material Modelling (II)

11:30-12:30 – Bayside Gallery

PD4.1 (ID 389)
Multiobjective Exponential Particle Swarm Optimization Approach Applied to Hysteresis Parameters Estimation
Coelho, Leandro dos S. (1,4); Guerra, Fábio A. (2); Leite, Jean Vianei (3)
1: Delt/UFPR, Curitiba, PR, Brazil; 2: Lactec, Curitiba, PR, Brazil; 3: GRUCAD/EEL/UFSC, Brazil; 4: PPGEPS/PUCPR, Curitiba, PR, Brazil

PD4.2 (ID 420)
Application of Thin Plate with JA Model with Compressive Stress to Thin Plate
Yun, Kyyoul; Fujisaki, Keisuk
Toyota Technological Institute, Japan

PD4.3 (ID 426)
Computation of Extrinsic Magneto-Electric Problem using E-H formulation
Nguyen, Thu Trang; Bouillault, Frédéric; Mininger, Xavier; Daniel, Laurent
LGEP, France

PD4.4 (ID 433)
Application of the Preisach Model with a Neural Weighting Function Approximator to Modeling of Selected Branched Characteristics
Stryczewska, Henryka D. (1); Wac-Wlodarczyk, Andrzej (1); Janowski, Tadeusz (1); Nafalski, Andrew (2); Gizewski, Tomasz (1); Goleman, Ryszard (1); Czerwinski, Dariusz (1); Koziel, Joanna (1); Komarzyniec, Grzegorz (1)
1: Lublin University of Technology, Poland; 2: School of Electrical and Information Engineering, University of South Australia

PD4.5 (ID 468)
A Robust Method to Estimate the Parameters of Chemical Hysteresis Model
Gabi, Yasmine
Grenoble Electrical Engineering Laboratory - G2Elab

PD4.6 (ID 494)
Modeling of Losses and Current Density Distribution in Conductors of a Large Air Gap Transformer Using Homogenization and 3D FEM
Sibué, Jean-Romain (1,2); Ferrieux, Jean-Paul (1); Meunier, Gérard (1); Périot, Robert (2)
1: G2Elab, France; 2: ALSTOM, France

PD4.7 (ID 495)
Numerical Analysis of a Nondestructive Online Testing System for Dual Phase Steels
Gabi, Yasmine
Grenoble Electrical Engineering Laboratory - G2Elab

PD4.8 (ID 498)
3D FEM Adjoin Formulations Combination for PM Material Modeling
Beniakar, Minos E.; Tsampouris, Evangelos M.; Kladas, Antonios G.
National Technical University of Athens, Greece

PD4.9 (ID 499)
Efficient Metafilm/Metasurface Characterization for Obliquely Incident TE Waves via Surface Susceptibility Models
Dimitriadis, Alexandros (1); Kantartzis, Nikolaos (1); Rekanos, Ioannis (2); Tsiboukis, Theodoros (1)
1: Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece; 2: Physics Division, School of Engineering, Aristotle University of Thessaloniki, Greece

PD4.10 (ID 501)
Optimal Modeling of Infinite Graphene Sheets via a Class of Generalized FDTD Schemes
Bouzianas, George; Kantartzis, Nikolaos; Antonopoulos, Christos; Tsiboukis, Theodoros
Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece

PD4.11 (ID 509)
3D Numerical Evaluation of HTSC Levitation Forces Using a Novel Technique Based on the Control Volume Method
Alloui, Lotfi (1,2); Bouillault, frédéric (1); Mimoune, Souri (2); Leveque, Jean (3); Bernard, Laurent (1)
1: Laboratoire de Génie Electrique de Paris (LGEP), France; 2: Laboratoire de Modélisation des systèmes Energétiques (LMSE),Biskra, ALgérie; 3: Groupe de Recherche en Electrotechnique et Electronique de Nancy, (GREEN), France

PD4.12 (ID 510)
An Improved Complex Reluctivity Model Considering 2D Magnetic Properties of Electrical Steel Sheet
Liu, Yang; Zhang, Yanli; Xie, Dexin
Shenyang University of Technology, China, Peoples Republic of

PD4.13 (ID 515)
Modelling Dynamic Losses under Rotational Magnetic Flux
Leite, Jean Vianei (1); da Luz, Mauricio V. Ferreira (1); Sadowski, Nelson (1); da Silva Jr., Pedro A. (2)
1: GRUCAD/EEL/UFSC, Brazil; 2: IFSC, São José, SC, Brazil

PD4.14 (ID 545)
Finite Element Computational Homogenization of Nonlinear Multiscale Materials in Magnetostatics
Niyonzima, Innocent; Sabariego, Ruth V.; Dular, Patrick; Geuzaine, Christophe
Applied and Computational Electromagnetics (ACE), University of Liege, Belgium

PD4.15 (ID 562)
Inspection of the Delamination of Magnetic and Non-magnetic Conducting Layers using NDT
Gyimóthy, Szabolcs; Vaskó, András; Pávó, József
Budapest University of Technology and Economics, Hungary

Session PD5: Electric Machines and Drives (X)

11:30-12:30 – Bayside Gallery

PD5.1 (ID 783)
Analysis and Design of Slotted Tubular Linear Actuator for the Eco-Pedal System of a Vehicle
Kim, Young Kyoun (1); Gu, Bon-Gwan (1); Jung, In-Soung (1); Won, Sung-Hong (2)

1: Korea Electronics Technology Institute, Korea, South (Republic of); 2: Dept. of Electric System, Dongyang Mirae University, Korea, South (Republic of)

PD5.2 (ID 785)
Full and Simplified Loss Calculation FEM Models for Segmented Surface Permanent Magnet Machines
Funieru, Bogdan; Mirzaei, Mehran; Binder, Andreas
TU Darmstadt, Germany

PD5.3 (ID 786)
Optimal Design of Line-Start Permanent Magnet Motor with Cost Reduction and Performance Improvements
Li, Jian; Song, Jeong-Tae; Cho, Yun-Hyun
Dong-A University, Korea, South (Republic of)

PD5.4 (ID 802)
Analysis and Modeling of Stator Slot-Opening Effect on Open-Circuit Air-gap Field Distribution in Interior-type Permanent Magnet Machine
Fang, Liang; Kim, Do Jin; Hong, Jung-pyo
Hanyang University, Korea, South (Republic of)

PD5.5 (ID 826)
Diagnosis of Phase to Phase Short Circuit Faults in Vector Controlled Permanent Magnet Synchronous Motors
Djerdir, Abdesslem (1); Hadef, Mounir (1,2); Mekideche, Mohamed (2); N'diaye, Abdoul-Osmane (1); Miraoui, Abdellatif (1)
1: SET/UTBM, France; 2: Université de Jijel/LAMEL, Algérie

PD5.6 (ID 839)
The Reduction of Torque Ripple in Spoke type Transverse Flux Rotary Machine for Direct Drive Motor
Hong, Do-Kwan; Lee, Ji-Young; Woo, Byung-Chul; Chung, Si-Uk
Korea Electrotechnology Research Institute, Korea, South (Republic of)

PD5.7 (ID 844)
An Analytical and Numerical Model to Predict Static and Dynamic Performance of a Torus Machine with Two Permanent Magnets Topologies
Martins Osório, Jonas Obert; Ferreira Flores Filho, Aly; Eckert, Paulo Roberto; Tiaraju dos Reis Loureiro, Luiz
Federal University of Rio Grande do Sul, Brazil

PD5.8 (ID 845)
Modeling and Analysis of Synchronous Machines with Broken Damper Bars
Rahimian, Mina
Texas A&M University, United States of America

PD5.9 (ID 848)
Hysteresis Torque Analysis of Permanent Magnet Motors Using Preisach Model
Lee, Jeong-Jong (1); Kim, Young-Kyoun (1); Rhyu, Se-Hyun (1); Jung, In-Soung (1); Chai, Seung-Hee (2); Hong, Jung-Pyo (2)
1: Intelligent Mechatronics Research Center, Korea Electronics Technology Institute, Korea; 2: Department of Automotive Engineering, Hanyang University, Seoul, Korea

PD5.10 (ID 849)
Unbalanced Radial Force and Vibration Mode Analysis of Large Interior Permanent Magnet Machines with Static, Dynamic and Mixed Air-gap Eccentricity
Kang, Gyu Hong (1); Lee, Sun Kwon (1); Kim, Hyung Kyu (1); Hur, Jin (2)
1: Korea Marine Equipment Research Institute, Korea, South (Republic of); 2: University of Ulsan, Korea, South (Republic of)

PD5.11 (ID 856)
Design of Electric Powertrains for Vehicles using Driving Cycles
Krebs, Guillaume; de Cecco, Eric; Marchand, Claude
Laboratoire de Génie Electrique de Paris (LGEP), France

PD5.12 (ID 859)
Stator Core with Slits in Transverse Flux Rotary Machine to Reduce Eddy Current Loss
Lee, Ji-Young (1); Koo, Dae-Hyun (1); Kang, Do-Hyun (1); Hong, Jung-Pyo (2)
1: Korea Electrotechnology Research Institute, Korea, South (Republic of); 2: Department of Automotive Engineering, Hanyang University, Korea, South (Republic of)

PD5.13 (ID 876)
A Novel Rotor Configuration and Experimental Verification of Interior PM Synchronous Motor for High-speed Applications
Kim, Sungil; Kim, Youngkyoun; Lee, Geunho; Hong, Jungpyo
Hnayang University, Korea, South (Republic of)

PD5.14 (ID 893)
A Novel Analytical Method for Loss Calculation in Line-Start and Inverter-Fed Induction Motors under Broken Bars Fault
Ebrahimi, Bashir Mahdi; Takbash, Amir Masoud; Faiz, Jawad
University of Tehran, Iran, Islamic Republic of

PD5.15 (ID 707)
Ultra High Speed Motor Supported by Air Foil Bearings for Air Blower Cooling Fuel Cells
Hong, Do-Kwan; Woo, Byung-Chul; Koo, Dae-Hyun
Korea Electrotechnology Research Institute, Korea, South (Republic of)

Session PD6: Optimization (V)

11:30-12:30 – Bayside Gallery

PD6.1 (ID 636)
Optimum Design of Wideband Bandpass Filter with CSRR-loaded Transmission Line using Evolution Strategy
Kim, Hyeong-Seok (1); Kim, Koon-Tae (1); Ko, Jae-Hyeong (1); Choi, Kyung (2); Lee, Je-Kwang (1)
1: Chung-Ang University, Korea, South (Republic of); 2: Kangwon National University, Korea, South (Republic of)

PD6.2 (ID 643)
Comparison of Topology Optimization Methods for Cogging Torque Reduction of Permanent Magnet BLDC Motor

Meng, Xiangjun (1); Wang, Shuhong (1); Qiu, Jie (1); Duan, Nana (1); Zhang, Qiuhui (1); Zhu, Jian Guo (2); Guo, Youguang (2)
1: Xi'an Jiaotong University, China, Peoples Republic of; 2: University of Technology, Sydney, Australia

PD6.3 (ID 660)
Evolutionary Computation Combined with Advanced Numerical Field Analysis for Multi-winding Transformer Design Optimization
Tsili, Marina (1); Amoiralis, Eleftherios (2); Kladas, Antonios (1); Souflaris, Athanassios (3)
1: National Technical University of Athens, Greece; 2: Technical University of Crete, Greece; 3: Schneider Electric AE, Greece

PD6.4 (ID 665)
A Modified Imperialist Competitive Algorithm for Optimization in Electromagnetics
Alotto, Piergiorgio (1); Dos Santos Coelho, Leandro (2); Afonso, Leonardo D. (3)
1: Università di Padova, Italy; 2: Pontifical Catholic University of Parana, Curitiba, Brazil; 3: Federal University of Parana, Curitiba, Brazil

PD6.5 (ID 667)
Bat-Inspired Optimization Approach for the Brushless DC Wheel Motor Problem
Bora, Teodoro (1); Coelho, Leandro Dos Santos (1); Lebensztajn, Luiz (2)
1: Automation and Systems Laboratory, PPGEPS, Pontifical Catholic University of Paraná; 2: *Laboratório de Eletromagnetismo Aplicado, LMAG-PEA, Escola Politécnica da Universidade de São Paulo*

PD6.6 (ID 671)
Multi-domain Topology Optimization of Pulsed Magnetic Field Generator Sourced by Harmonic Current Excitation
Lee, Jangwon; Kook, Junghwan; Wang, Semyung
Gwangju Institute of Science and Technology, Korea, South (Republic of)

PD6.7 (ID 674)
Design and Analysis of Resonator for Wireless Power Transmission System Based on Resonant Coupling
Yan, Zhuo (1); Zhang, Chao (1); Chen, Haiyan (1); Li, Yongjian (1), Yang, Qingxin (2); Li, Yang (2)
1: Heibei University of Technology, China, Peoples Republic of; 2: Tianjin Polytechnic University, Tianjin, China

PD6.8 (ID 678)
Optimization of Permanent Magnetic Actuator for Minimizing Permanent Magnet Using Response Surface Method
Son, Ju-Wan; Ahn, Hyun-Mo; Park, Kug-Nam; Jeon, Kyung-Won; Hahn, Sung-Chin
Dong-A University, Korea, South (Republic of)

PD6.9 (ID 682)
Evolutional Design of Waveguide Slot Antenna with Dielectric Lenses
Keiichi, Itoh (1); Katsumasa, Miyata (1); Hajime, Igarashi (2)
1: Akita National College of Technology, Japan; 2: Hokkaido University, Japan

PD6.10 (ID 698)
Design Optimization of a Round-Rotor Synchronous Generator for Enhancing Short-Circuit Ratio (SCR)

Soares de Carvalho, Elissa (1); Kuo-Peng, Patrick (2); Wurtz, Frederic (3)
1: UFSC - Universidade Federal de Santa Catarina, Brazil; 2: WEG Equipamentos Elétricos S/A - Energy Division; 3: 3G2ELab Laboratory, INPG/UJF/CNRS

PD6.11 (ID 718)
Optimizing the Electrothermal Dynamics in Radio Frequency Ablation Treatments
Ferraioli, F.; Formisano, A.; Martone, R.
Seconda Università di Napoli, Italy

PD6.12 (ID 782)
Application of the PSO Algorithm to the Multi-objective Optimization of Insulation Elements based on Dynamic Population Size
Kitak, Peter (1); Ticar, Igor (1); Glotic, Adnan (1); Pihler, Joze (1); Biro, Oszkar (2); Preis, Kurt (2)
1: University of Maribor, Slovenia; 2: Graz University of Technology, Austria

PD6.13 (ID 743)
Secondary Optimization of Linear Induction Motor by Finite Element Method and Analytical Method considering Transverse Edge Effect
Jang, Seok-Myeong (1); Park, Yu-Seop (1); Ko, Kyoung-Jin (1); Choi, Jang-Young (1); Sung, So-Young (2)
1: Chungnam National University, Korea, South (Republic of); 2: Korea Ocean Research & Development Institute, Korea, South (Republic of)

PD6.14 (ID 750)
Robust Global Optimization of Electromagnetic Devices with Uncertain Design Parameters: Comparison of Worst-Case Optimization and Gradient Index Method
Koh, C.S.; Ren, Ziyan; Pham, Minh-Trien
Chungbuk National University, Korea, South (Republic of)

PD6.15 (ID 751)
Optimal Design of Inductors - Transformers Associated to Converters for Railway Application
Rossi, Mathieu; Hecquet, Michel; Lanfranchi, Vincent
Univ. Lille Nord de France, ECLille, L2EP, France

Session OD2: Static Fields and Quasi-Static Fields

13:30-14:30 Bayside Auditorium A

OD2.1 (ID 322)
Comparison between Fast Steady-State Analysis Methods for Time-Periodic Nonlinear Magnetic Field Problems
Takahashi, Yasuhito (1); Tokumasu, Tadashi (2); Fujita, Masafumi (2); Wakao, Shinji (3); Fujiwara, Koji (1); Ishihara, Yoshiyuki (1)
1: Doshisha University; 2: Toshiba Corporation Power Systems Company; 3: Waseda University

OD2.2 (ID 828)
Efficient Solution of Transient Eddy Current Problems Using Linear/Nonlinear Domain Substructuring
Schöps, Sebastian (1); Bartel, Andreas (1); Clemens, Markus (2)
1: Chair of Applied Mathematics, Bergische Universität Wuppertal, Germany; 2: Chair of Electromagnetic Theory, Bergische Universität Wuppertal, Germany

Session PD7: Material Modelling (III)

14:30-15:30 – Bayside Gallery

PD7.1 (ID 649)
Temperature Dependence of Magnetic Properties for Sensitized Alloy 600
Suzuki, Kenji (1); Takase, Tsugiko (1); Yamaguchi, Katsuhiko (1); Nittono, Osamu (1); Uchimoto, Tetsuya (2); Takagi, Toshiyuki (2)
1: Fukushima University, Japan; 2: Tohoku University, Japan

PD7.2 (ID 730)
A Vector Jiles-Atherton Hysteresis Model and Its Application to Finite Element Analysis of Iron Loss
Koh, C.S.; Li, Wei; Seo, Minkyu; Kim, Inhyun
Chungbuk National University, Korea, South (Republic of)

PD7.3 (ID 754)
TLM Modeling in Electrical Grounding Problem Including the Soil Dispersive Behavior through the Debye Equation in Lightning Situations
Wisintainer, Bruno William (1); Almaguer, Hugo Armando Dominguez (2); Raizer, Adroaldo (1); Silveira, Jony Laureano (3)
1: Federal University of Santa Catarina, Brazil; 2: Regional University of Blumenau, Brazil; 3: Federal Institute of Santa Catarina, Brazil

PD7.4 (ID 758)
Micromagnetics Simulation for Large Size Magnetic Domain Structure of Ferromagnetic Material by Modifying Representation of Exchange Energy
Ebrahimi, Hassan; Gao, Yanhui; Muramatsu, Kazuhiro
Saga University, Japan

PD7.5 (ID 760)
Investigation on Simple Numeric Modelling of Anomalous Eddy Current Loss in Steel Plate Using Modified Conductivity
Gao, Yanhui; Matsuo, Yuhei; Muramatsu, Kazuhiro
Dept. of Electrical and Electronic Engineering, Saga Unv., Japan

PD7.6 (ID 791)
Accuracy Improved Chua-type Vector Hysteresis Model and Its Application to Iron Loss Analysis of Three-phase Induction Motor
Koh, C.S. (1); Yoon, H.S. (1); Song, M.H. (1); Shin, P.S. (2)
1: Chungbuk National University, Korea, South (Republic of); 2: Hongik University, Jochiwon, Korea, South (Republic of)

PD7.7 (ID 804)
Magnetic Field Analysis Taking Account of Stress-Dependent Magnetic Properties of Non-Oriented Electrical Steel Sheets
Kurita, Naoki; Takahashi, Yasuhito; Fujiwara, Koji; Ishihara, Yoshiyuki
Doshisha University, Japan

PD7.8 (ID 806)
Hybrid Magnetic Field Formulation Based on the Losses Separation Method for Modified Dynamic Inverse Jiles-Atherton Model
Hamimid, Mourad (1); Mimoune, Souri Mohamed (2); Feliachi, Mouloud (3)
1: LMSE, Université de Biskra,Algeria; 2: LMSE, Université de Biskra,Algeria; 3: IREENA-IUT, CRTT, Saint Nazaire, France

PD7.9 (ID 817)
Adaptive Method for Non-Intrusive Spectral Projection: Application on Eddy Current Non Destructive Testing
Moreau, Olivier (1); Beddek, Karim (2); Clenet, Stephane (2); Costan, Valentin (1); Le Menach, Yvonnick (3); Benabou, Abdelkader (3)
1: Electricite De France R&D, France; 2: Arts et Métiers ParisTech, L2EP, France; 3: Université Lille 1, L2EP, France

PD7.10 (ID 821)
A Simple Model to Explain the Leakage Flux Measured around an Off Line Transformer
Cavallera, Didier (1); Coulomb, Jean-Louis (2); Chadebec, Olivier (2); Caillault, Bruno (1); Zgainski, François-Xavier (1)
1: EDF, France; 2: G2ELab, France

PD7.12 (ID 841)
Compound TiO2 Interlayers for the Novel Witricity Charger with FEM Simulations and Corresponding Experiments
Wang, Junhua (1,2); Ho, S. L. (1); Fu, W. N. (1); Sun, Mingui (2); Zhu, Jianguo (3)
1: The Hong Kong Polytechnic University, Hong Kong S.A.R. - China; 2: Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, PA, USA; 3: Faculty of Engineering and Information Technology, University of Technology, Sydney, Broadway NSW 2007, Australia

PD7.13 (ID 855)
Magnetization Simulation of Permanent Magnets by using Three-dimensional VMSW Method Taking Demagnetization Process into Account
Nakahata, Yasushi (1); Todaka, Takashi (2); Enokizono, Masato (2)
1: Oita Prefectural Organization for Industry Creation, Japan; 2: Oita University, Japan

PD7.14 (ID 866)
Neural Network Approach for Modelling Hysteretic Magnetic Materials under Distorted Excitations
Riganti Fulginei, Francesco; Salvini, Alessandro
Roma Tre University, Italy

PD7.15 (ID 879)
Frequency Domain Computation of Eddy Currents in Superconductors
Mezani, Smaïl; Douine, Bruno; Lubin, Thierry; Leveque, Jean; Rezzoug, Abderrezak
Université Henri Poincaré, France

Session PD8: EMC

14:30-15:30 – Bayside Gallery

PD8.1 (ID 425)
2-D Equivalent Modeling and Analysis of Quadratic Electromagnetic Linear
Park, Se-Myung (1); Kim, Jin-Ho (1); Lee, Jung-Hun (1); Oh, Sang-Heun (2); Park, Un-Hwan (2)

1: Yeungnam University, Korea, South (Republic of); 2: Advanced Development R&D Center, Pyung Hwa Co., Korea, South (Republic of)

PD8.2 (ID 428)
Finite Element Analysis of Shielding Composite Enclosures
Bizard, Cyrille; Mininger, Xavier; Pichon, Lionel
LGEP, France

PD8.3 (ID 482)
Modeling Radiated Emissions from Medical Equipment for EMC Environmental Management in Hospitals
Valente Junior, Wilson (1,2); Amaral, Matheus H. (1); Raizer, Adroaldo (1); Pichon, Lionel (2)
1: Universidade Federal de Santa Catarina, Brazil; 2: Université Paris Sud and Université Pierre et Marie Curie, France

PD8.4 (ID 506)
Fault Detection System with Noninvasive Magnetic Passive Sensor and Support Vectors Machine
Carvalho, Alexandre Miguel de (1); Sevegnani, Francisco Xavier (2); Sartori, Carlos Antonio França (3)
1: Primeira Opção Engenharia Elétrica LTDA, Brazil; 2: Centro das Ciências Exatas CCET/PUC/SP, 05508-900 São Paulo, SP, Brazil; 3: Dep. de Eng. de Energia e Automação Elétricas Escola Politécnica PEA/EPUSP, 05508-900 São Paulo, SP, Brazil

PD8.5 (ID 519)
Investigations of Near-fields at Low and High Frequency using Numerical Approach
Panchal, Chirag; Lu, Junwei; Zhu, Boyan
Griffith University, Australia

PD8.6 (ID 523)
Time-Domain Simulation of Complex Grounding Devices Considering Soil Ionization
Wu, Jinpeng (1); Zhang, Bo (1); Yu, Shaofeng (2); He, Jinliang (1); Zeng, Rong (1)
1: State Key Lab of Power Systems, Department of Electrical Engineering, Tsinghua University, Beijing, China; 2: Zhejiang Electric Power Test and Research Institute, Hangzhou, China

PD8.7 (ID 533)
A Study on the Simulation and Experiment of Flat Coil Actuator with Shorted Turn for Fast Initial Response
Hwang, KiIl (1); Kim, JinHo (2)
1: Yeungnam University, Korea, South (Republic of); 2: Yeungnam University, Korea, South (Republic of)

PD8.8 (ID 541)
Design of Air compressor Driving Linear Actuator for the High Performance of Fuel Cell BOP System using Taguchi Method
Kim, Jae-Hee; Kim, Jin-Ho
Yeungnam University, Korea, South (Republic of)

PD8.9 (ID 673)
Simulation of Wireless Communications Induced SAR for Interlaboratory Comparison
Firmino, Luciana (1); Nyland, Felipe (1); Valente Jr., Wilson (1); Raizer, Adroaldo (1); Almeida, Antônio (2)
1: GEMCO, Brazil; 2: CPqD, Brazil

PD8.10 (ID 728)
Calibration Methods for a Large Loop Antenna Measurement System
Ferber, Moises (1); Perrussel, Ronan (1); Zangui, Sanâa (1); Vollaire, Christian (1); Sartori, Carlos *(2); Krähenbühl, Laurent (1); Vincent, Benjamin (1)*
1: Laboratoire Ampère (CNRS UMR5005) France; 2: Laboratório de Eletromagnetismo Aplicado (LMAG/PEA/EPUSP) Brazil

PD8.11 (ID 808)
Modeling and Analysis of an Anechoic Chamber
Benko, Peter Tamas; Pavo, Jozsef
Budapest University of Technology and Economics, Hungary

PD8.12 (ID 867)
A Spectrally-Accurate FVTD Technique for Complicated Amplification and Reconfigurable Filtering EMC Devices
Kantartzis, Nikolaos V. (1); Assimonis, Stylianos D. (1); Lalas, Antonios X. (1); Scott, Jonathan B. (2); Antonopoulos, Christos S. (1)
1: Dept. of Electrical and Computer Engineering, Aristotle University of Thessaloniki, GR-54124, Thessaloniki, Greece; 2: School of Engineering, The University of Waikato, Hamilton 3240, New Zealand

PD8.13 (ID 874)
Numerical Dosimetry Schemes for the Simulation of Human Exposure to Pulsed High-Power Electromagnetic Field Sources
Clemens, Markus (1); Dickmann, Stefan (2); El Ouardi, Abdessamad (1); Hansen, Volkert (1); Streckert, Joachim (1); Zhou, Yi (1)
1: Bergische Universitaet Wuppertal, Germany; 2: Helmut-Schmidt-University, Germany

PD8.14 (ID 886)
A Critical Comparison of Formulations for the Computation of Induced ELF Fields into the in Human Body
Lelong, Thomas (1); Thomas, Pierre (1); Magne, Isabelle (1); Scorretti, Riccardo (2); Burais, Noel (2); Piriou, Francis (3)
1: EDF R&D, France; 2: Laboratoire Ampère, Université de Lyon, France; 3: L2EP, Université de Lille, France

Session PD9: Optimization (VI)

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PD9.1 (ID 756)
Multiobjective Biogeography-Based Optimization Based on Predator-Prey Approach for the Brushless DC Wheel Motor Problem
Lebensztajn, Luiz (1); Costa e Silva1, Marsil de A. (2); Coelho, Leandro dos S. (2)
1: Escola Politécnica da Universidade de São Paulo, Brazil; 2: Automation and Systems Laboratory, PPGEPS, Pontifical Catholic University of Paraná

PD9.2 (ID 757)
Programmable Design of Magnet Shape of Permanent Magnet Synchronous Machine for Minimization of Torque Pulsation

Jang, Seok-Myeong (1); Park, Hyung-Il (1); Choi, Jang-Young (1); Ko, Kyoung-Jin (1); Lee, Sung-Ho (2)
1: Chungnam National University, Korea, South (Republic of); 2: Korea Institute of Industrial Technology Gwangju Research Center, Korea, South (Republic of)

PD9.3 (ID 766)
Topological Shape Optimization of Permanent Magnet of Voice Coil Motor using Level Set Method
Lee, Jangwon; Wang, Semyung
Gwangju Institute of Science and Technology, Korea, South (Republic of)

PD9.4 (ID 775)
S-parameter Sensitivity for Optimization of Microstrip Structures with Lumped Ports Based on Continuum Design Sensitivity
Kim, Hyeong-Seok (1); Ko, Jae-Hyeong (1); Byun, Jin-Kyu (2); Chung, Tae-Kyung (1)
1: Chung-Ang University, Korea, South (Republic of); 2: Soongsil University, Korea, South (Republic of)

PD9.6 (ID 816)
Comparison of Efficient Global Optimization and Output Space Mapping on the Bi-objective Optimization of a Safety Isolating Transformer
Berbecea, Alexandru Claudiu; Ben Ayed, Ramzi; Gillon, Frédéric; Brisset, Stéphane; Brochet, Pascal
Ecole Centrale de Lille, France

PD9.7 (ID 830)
Permanent Magnet Geometry Optimization for Surface PM Motor with Maximum Power Density by using a Particular Vernier Technique
Laskaris, Konstantinos I.; Kladas, Antonios G.
National Technical University of Athens, Greece

PD9.8 (ID 834)
A Small Population based CSA/QPSO Hybrid Evolutionary Algorithm for High-Dimensional Multimodal Optimization Problems: MCQPHE
Santos, Guilherme (1,2); Carpes Jr., Walter Pereira (1,2)
1: Federal University of Santa Catarina, Brazil; 2: Grupo de Concepção e Análise de Dispositivos Eletromagneticos - GRUCAD

PD9.9 (ID 840)
Population Diversity Control in Genetic Algorithm Method using the Discrete Wavelet Transform and the k-means Clustering
1: Nove de Julho University, Brazil; 2: São Paulo University, USP, Brazil
Pereira, Fabio Henrique (1); Lopes, Elenice da Conceição (1); Nabeta, Silvio (2)

PD9.10 (ID 857)
A small population based CSA/QPSO Hybrid Evolutionary Algorithm for High-Dimensional Multimodal Optimization Problems: MCQPHE
Santos, Guilherme; Walter P. Carpes Jr.
Federal University of Santa Catarina, Brazil

PD9.12 (ID 872)
Shape Optimization of Multistage Depressed Collectors by Parallel Evolutionary Algorithm

Riganti Fulginei, Francesco (1); Salvini, Alessandro (1); Laudani, Antonino (2); Coco, Salvatore (2); Pulcini, Giuseppe (1)
1: Roma Tre University, Italy; 2: Catania University, Italy

PD9.13 (ID 883)
A Particle Swarm Optimization Algorithm with Novel Expected Fitness Evaluation for Robust Optimization Problems
Luan, Feng (1,2); Choi, Jong-Ho (1); Jung, Hyun-Kyo (1)
1: Seoul National University, Korea, South (Republic of); 2: Northeastern University, Shenyang, China

PD9.14 (ID 891)
A Multi-objective Evolutionary Algorithm with Decomposition for Optimal Design of Yagi-Uda Antennas
Carvalho, Rodrigo; Saldanha, Rodney R.; Gomes, Bruno N.; Lisboa, Adriano C.; Martins, A. X.
Universidade Federal de Minas Gerais, Brazil

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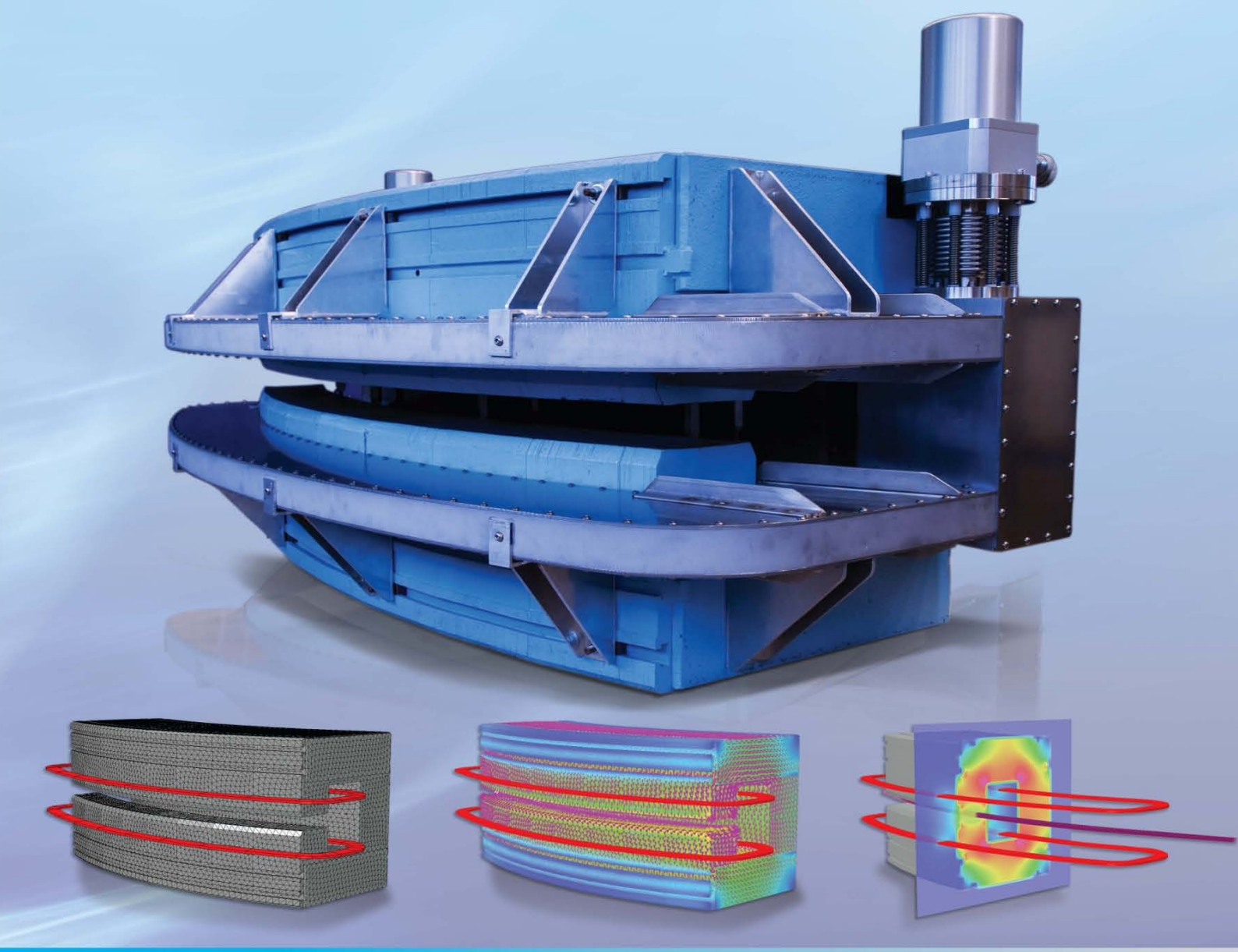

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