

17th

International Conference on Environment and Electrical Engineering





1st Industrial and Commercial Power Systems Europe

FINAL PROGRAM

MILAN, ITALYPalazzo delle stelline
June 6th • 9th, 2017

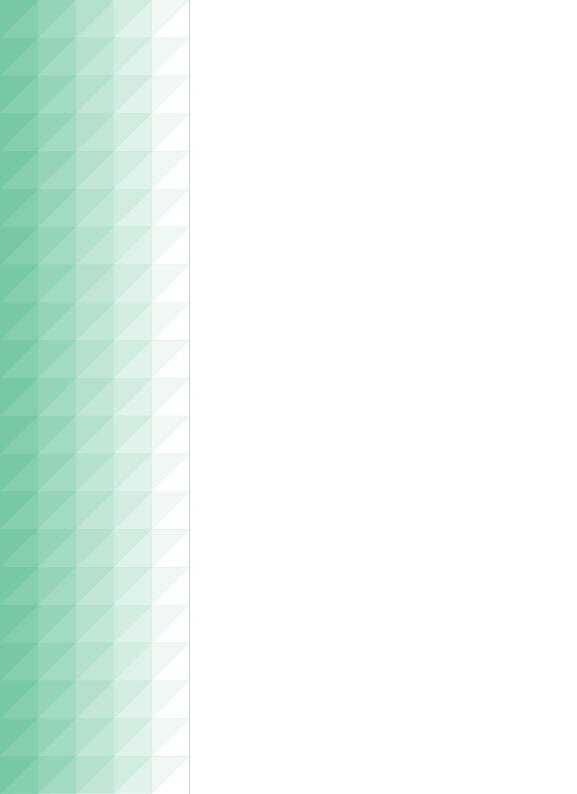












Dear colleagues

On behalf of the organizing committee, we are honored and delighted to welcome you to the 17th IEEE International Conference on Environment and Electrical Engineering.

We believe we have chosen a venue that guarantees a successful technical conference, charmed

with the culture and scenery of Milan.

The conference has received the technical co-sponsorship from three well-know IEEE international Societies

• the Electromagnetic Society (EMC),

• the Industrial Application Society (IAS) and the Power and Energy Society (PES), along with the financial support of the IAS. All those are gratefully acknowledged .

This year the EEEIC hosts the 1st edition of the Industrial and Commercial Power System Europe Conference, a classical annual meeting of the Industrial Application Society that is here revisited in a European fashion. Sharing the same platform and organization framework, the joined conferences are expected to become a flagship of the IEEE in Europe and represent currently one of the largest gatherings of researchers and industry professionals in the world.

This year's conference is no exception and brings together more than 500 delegates from almost 70 countries around the globe to discuss the latest advances in the vibrant and constantly evolving field of electrical and environment engineering. Electrical and environmental engineering plays a crucial role in the global economy, and is one of the most dynamic sectors across the globe.

Engineers and scientists are called to face hot-topics and far-reaching challenges in the present days, when industry demands more than ever economic and sustainable solutions for technological progress and process innovation that could reduce energy consumption and adverse effects on environment.

Therefore, the conference will address key issues pertaining to sustainable and renewable energy production, energy storage, smart grids management, smart buildings, energy conversion, sustainable transport systems, EMC control in lightning and grounding systems, novel materials

and nanotechnology.

In addition to the stimulating program of the conference, Milan, with its touristic attractions, the diversity and quality of its cuisine, and world-class facilities, is an unforgettable place to visit. It is our hope, therefore, that you get a chance to explore Milan and its surroundings, and enjoy the exotic and vibrant atmosphere of an Italian economic capital.

It has been a great privilege for us to serve as General Chairs of the Conference and it is our hope that you will find the conference stimulating, fulfilling and enjoyable. We thank you for your support of EEEIC and I&CPS Europe and your attendance, and wish you a pleasant experience in Milan.

experience in Milan.

Warmest Regards





RODOLFO ARANEO GENERAL CHAIR

DEPARTMENT OF ASTRONAUTICAL ELECTRICAL AND ENERGETIC ENGINEERING Sapienza University of Rome Via Eudossiana, 18 00184 Rome, Italy

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LUIGI MARTIRANO

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WELCOME MESSAGE FROM TP CHAIRS

Dear authors and attendees of the 17th IEEE International Conference on Environment and Electrical Engineering, and of the first edition of the IEEE Industrial and Commercial Power Systems Europe Conference: welcome!!!

This year conference again received the technical co-sponsorship of three worldwide renowned IEEE societies: Electromagnetic Society (EMC), Industrial Application Society (IAS), and Power and Energy Society (PES), along with the technical and the financial support of the IEEE Italy Section.

The Organizing Committee has planned and designed this edition with in mind the goal to ensure enriching technical and professional networking opportunities.

Four days of technical multi-track oral and poster sessions include the presentations of top-rated peer-reviewed papers by experts of Universities and the Industry. Special sessions have brought in a record number of technical papers on important and current topics. Poster Sessions for PhD students and undergraduate students have been arranged to encourage their active participation to the conference.

We would like to sincerely welcome you to IEEE EEEIC17 and I&CPS Europe Conference and look forward to meeting you during the event, which we hope will be a memorable experience.

Enjoy the conference! Best Regards

MARIA CARMEN FALVO TP CHAIR DEPARTMENT OF ASTRONAUTICAL, ELECTRICAL AND ENERGETIC ENGINEERING University of Rome Sapienza Via Eudossiana , 18 00184, Rome, Italy mariacarmen, falvo@uniroma L.it







I am honored and delighted to welcome authors and participant to Milan for attending the 17th IEEE International Conference on Environment and Electrical Engineering and the first edition of the IEEE Industrial and Commercial Power

Systems Europe.

Surrounded by a unique blend of history and modernity, that makes Milan one of the most famous cities for arts, education, fashion and business, you will enjoy a rich and intensive scientific program. An Opening Plenary Session and a Welcome Cocktail in the prestigious Politecnico di Milano, will introduce you to three full conference days in a charming location, right in the old city. Conference lunches will be set in the quadriportici Magnolia Courtyard and in the beautiful garden of Magnolia. The gala dinner will take place in the Diocesan Museum, located in the setting of the cloisters of Sant'Eustorgio, integral part of one of the most antique monumental complexes of Milan.

This Conference is the culmination of a joint effort and I would like to take this opportunity to express my appreciation to the Local Organizing Committee, who will contribute in managing the

My acknowledgments to the Politecnico di Milano for hosting us during the opening of the conference, guaranteeing a location symbol of scientific excellence in the world. Heartfelt thanks go to the General Chairs for having contributed with their experience, to the Technical Program Chair for her intense work and to all Colleagues who have participated in implementing the Conference. Sincere thanks to all Authors who did this conference possible by means of their participation and papers.

I sincerely wish that you will experience with a stimulating and profitable conference, enjoying Milan and its atmosphere.

Looking forward to meeting you.

Best Regards



FEDERICA FOIADELLI LOCAL CHAIR DEPARTMENT OF ENERGY Politecnico di Milano Via La Masa 34 20156, Milan, Italy federica foiadelli @polimi.it

SPECIAL SESSIONS CHAIRS

FABIO BISEGNA
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PUBLICITY AND PUBLIC RELATION CHAIR

PUBLICITY AND PUBLIC RELATION CHAIR DEPARTMENT OF ENERGY, INFORMATION ENGINEERING AND MATHEMATICAL MODELS University of Palermo Viale delle Scienze Ed. 9, 90128 Palermo gaetano.zizzo@unipa.it



INDUSTRIAL RELATION CHAIR

ALBERTO REATTI
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EEEIC is an international forum for the exchange of ideas and information on energy systems both today and in the future. The conference provides a unique opportunity for industry to interact directly with university researchers, manufacturers and distributors of energy equipment and to discuss a wide variety of topics related to energy systems and environmental issues. The conference is technically and financially sponsored and organized by IEEE Italy

The scope of the Conference is to promote a forum, where researchers and engineers involved with electrical power systems may exchange their experiences and present solutions found for present and future problems. The conference offers prominent academia and industrial practitioners from all over the world the forum for discussion about the future of electrical energy and environmental issues and presents a base for identifying directions for continuation of

research. The Conference has been technically co-sponsored by IEEE since 2008. Accepted and orally presented papers are submitted to IEEE Xplore, and will also be submitted for indexing through INSPEC®, El's engineering information index, COMPENDEX®, and ISI Thomson's scientific and technical proceedings®, ISTP®/ISI proceedings. The conference proceedings have been indexed by Scopus since 2010 and by Web of

and technical proceedings. ISTPW/IST proceedings. The conference proceedings have been indexed by Scopus since 2010 and by Web of Science (Thomson Reuters) since 2013. EEEIC 2017 is the 17th annual conference, making it one of the largest, longest-running, professional networking and educational event of its kind in Europe. The 17th edition will be held Milan, Italy. Since 2015 the conference is fully sponsored by IEEE.

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ENEA is the name for Italian National Agency for New Technologies, Energy and Sustainable Economic Development. Itis the second major Italian research organization, with around 2700 staff employees distributed in its 9 research centers all over the national territory. The Agency's activities are mainly focused on Energy Efficiency, Renewable Energy Sources, Nuclear Energy, Climate and the Environment, Safety and Health, New Technologies, Electric System Research.



ABB is a pioneering technology leader that is writing the future of industrial digitalization. For more than four decades, we have been at the forefront, innovating digitally connected and enabled industrial equipment and systems. Every day, we drive efficiency, safety and productivity in utilities, industry, transport and infrastructure globally. With a heritage spanning more than 130 years, ABB operates in more than 100 countries and employs around 132,000 people.



AEIT Society For Information and Communications Technology (AICT). The "AEIT – Italian Association of Electrical, Electronics, Automation, Information and Communication Technology" was established on 1 January 1897 with the original name of "Italian Electrical Association" and from 1 November 2013, following a referendum social, assumed the current name. Then AIIT – the Italian Association of Telecommunications Engineers, founded in 1962 merged into AEIT . Since 1910, per Royal Decree, AEIT received the recognition of "non-profit organization".

With High Patronage Of



Official Bank



The conference will be held in Palazzo delle Stelline (1), located in Corso Magenta 61 in Milan. In central Milan, right in front of Leonardo's Last Supper and Santa Maria delle Grazie, in a charming location, Palazzo delle Stelline is the ideal location for organizing your event in an atmosphere rich with history and culture. Indissolubly bound to Leonardo da Vinci, it is a location underpinning par excellence the values of reception and

hospitality.

The Foundation's headquarters are located precisely where the great Renaissance master's vineyards found fertile ground, the so-called "Orti di Leonardo", just a step away from the Santa Maria delle Grazie Church where we find his masterpiece "The Last Supper". The Palazzo delle Stelline Congress Center offers complete congress facilities and innovative technologies for your events in a unique and full of charm location: conventions and congresses, training seminars, reserved meetings, parties, gala dinners and cocktails. With its 8.000 mq of surface, 20 halls and meeting & training rooms, the garden of the Magnolia Cloister, Leonardo's Orti and a wide range of solution for every need, the Congress Center can host both big and small events and fairs, as well as conferences and meetings for a limited number of people. The Congress Center rooms overlook the Seventeenth Century cloister, all with natural light. The beautiful mosaic floor created in the seventies by Bobo Piccoli is considered a true work of art: 2,000 square meters of Seminato in multi-coloured marble.

Palazzo delle Stelline is within walking distance from the Cadorna Railway Station (4).

The opening plenary session of the Conference will be held in the Aula Osvaldo De Donato, which is located in the main and historical building of the Politecnico di Milano (2). The complex of buildings destined to house the university, designed by Gaetano Moretti and Augusto Brusconi, professors at the university, and built by a technical department made up by the engineers Francesco Belloni, Giannino Ferrini and Vittorio Verganti, all Politecnico graduates, consists of six buildings distributed with perfect symmetry and connected by characteristic shelters and large underground connected tunnels, occupies an area of 50,000 square meters. At the top of the building that houses the offices of the Rector and the boardroom is a clock tower that strikes the hours on two bells that originated from Palazzo della Canonica, one of which bears the inscription of the date: 1763.

Politecnico di Milano can be reached from the main Railway Stations (4, 5, 7) with subway line 2 (direction Gessate or Cologno Nord or Cascina

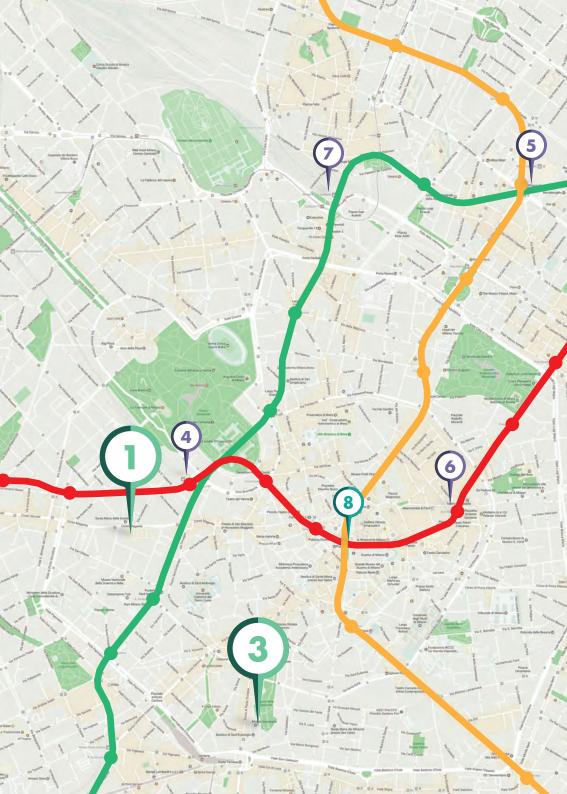
Gobba), stop Piola.



Palazzo delle Stelline



Politecnico di Milano





OTHER EVENTS

PHD POSTER SESSION AND AWARD EVENT

PRESENTATION OF POSTER: PHD POSTER SESSION Thursday, June 8th, 2017 | h. 11.00-13.00 Venue: Poster Area RooM Bramante

AWARD OF THE BEST PHD POSTERS Thursday, June 8th, 2017 h. 14.30 Venue: Lunch Area

IEEE POWER & ENERGY SOCIETY SCHOLARSHIP PLUS INITIATIVE REGION 8 ITALY SECTION

Wednesday, June 7th, 2017 h. 13.30-15.00 Venue: Lunch Area



IEEE Power & Energy Society SCHOLARSHIP PLUS INITIATIVE™

Preparing the Next Generation of Power & Energy Engineers

TUESDAY

June 6th 2017

h. 16.00 - 19.00 Venue: Politenico di Milano Leonardo Aula Osvaldo De Donato Building n. 3 Ground Floor (Entrance: Piazza Leonardo da Vinci 32)

WELCOME MESSAGE

Technical Program Chairs

Rodolfo Araneo and Luigi Martirano Federica Foiadelli Local Chair Donatella Sciuto Vice Rector of Politecnico di Milano Fabio Inzoli Head of Department of Energy of Politecnico di Milano Zbigniew Leonowicz Web and Publication Chair Maria Carmen Falvo and Massimo Mitolo

PLENARY SESSION TALKS

TALKS MODERATOR: Massimo Mitolo Irvine Valley College, Irvine, California (USA)



Massimo Mitolo (IEEE SM '03) received the Doctoral degree in Electrical Engineering from the University of Naples "Federico II," Napoli, Ifaly. He is a registered Professional Engineer in California and in Italy and is a Professor of Electrical Technology at the Irvine Valley College, in California (USA). Dr. Mitolo authored over 100 journal papers and the books Electrical Safety of Low-Voltage Systems (McGraw-Hill, 2009) and Laboratory Manual for Introduction to Electronics: A Basic Approach (Pearson Prentice-Hall, 2013). His research interests include the analysis and grounding of power systems. Dr. Mitolo is active within the Industrial and Commercial Power Systems Department of the IEEE Industry Application Society, where he is currently the Vice-Chair (papers), the Chair of the Power Systems Analysis Subcommittee, and the Chair of the Grounding Subcommittee. He also serves as an Associate Editor for the IEEE Power Systems Engineering with ScholarOne Manuscripts.

Dr. Mitolo has been the recipient of numerous awards, among which the 2012 IAS I&CPS Ralph H. Lee Department Prize Paper Award, and the IEEE Region 6 "2015 Outstanding Engineer Award".

Engineer Award".

Tomy Sebastian Director Motor Drive Systems at Halla Mechatronics, Michigan USA, and President of IEEE **Industry Applications Society**

IEEE Industry Applications Society - Looking Ahead

Frank Sabath **IEEE EMCS President** (Electromagnetic Compatibility Society)

The role of the **Electromagnetic Compatibility Society**



Tomy Sebastian received the B.Sc. (Eng.) degree from Regional Engineering College Calicut (presently National Institute of Technology, Calicut), India, the M.S. degree from Indian Institute of Technology Madras, M.A.Sc. and Ph.D. degrees from the University of Toronto, Canada. Currently he is the Director of Motor Drive Systems at Halla Mechatronics in Bay City, Michigan USA.

City, Michigan USA.

In 2003 he was elected as a Fellow of IEEE. During 2008-2009, he served as a distinguished Lecturer of IEEE Industry Applications Society. He is the recipient of the 2010 IEEE Industry Applications Society outstanding achievement award. He was the General Chair for the First IEEE Energy Conversion Congress and Exposition (IEEE ECCE 2009) held in San Jose, CA. He also served as Co-General Chair of the IEEE Power Electronics, Drives and Energy Systems (PEDES 2012) in Bengaluru, India. He is currently the President of the IEEE Industry Applications Society.



Frank Sabath (M'94–SM'04). He received the Dipl.-Ing. Degree in electrical engineering from the University of Paderborn, Germany, in 1993, and the Dr-Ing, degree from the Leibniz University of Hannover, Hannover, Germany, in 1998. Since 1998, he has been with the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw). From 2011 to 2017 he was head of the directorate on Nuclear Effects, High-Power Electromagnetics and Fire Protection of the Bundeswehr Research Institute for Protective Technologies and CBRN-Protection (WIS), Munster, Germany. In 2017 he took over responsibility as head of the directorate on Detection. Dr. Sabath is Senior Lecturer in the field EMI Risk Management at the Leibniz University Hannover, Germany. He is the author or coauthor of more than 150 papers published in international journals and conference proceedings (orcid.org/0000-0001-6702-3715). His research interests include investigations of electromagnetic field theory, High-Power Electromagnetics, investigations of short pulse interaction on electronics, and impulse radiation. Dr. Sabath served as Ultra Wide Band (UWB) co-chairman of the EUROEM 2004, Magdeburg, Germany as well of the EUROEM 2008, Lausame, Switzerland. Currently he is an Associate Editor of the IEEE Timasactions on EMC, member of the board of directors of the IEEE EMC Society and chair of the IEEE Effermany Section EMC Society presented him the Laurence G. Cumming Award in 2009 and the Honored Member Award in 2012. He is the current president of the IEEE Electromagnetic Compatibility (EMC) Society, and a member of Antennas and Propagation (AP), Microwaves Theory and Techniques (MTT) societies, and of URSI Commission E.

Alfredo Testa University of Campania, L. Vanvitelli IEEE PES (Power and Energy Society) **GUSEE** President

Activities of The Research Group of Italian Universities on Electrical Energy Carlo De Petris INAIL (National Institute for Assurance against accident at work)
Director of the Department of Innovation Technologies

The role of the **National Institute for Assurance** against accident at work



Alfredo Testa, (M'83–SM'03–F'08) was born in Naples, Italy, on March 10, 1950. He received the degree in electrical engineering from the University of Naples, Naples, Italy, in 1975. Currently, he is a Professor in Electrical Power Systems at the University of Campania, L. Vanvitelli, Italy. He is engaged in research on electrical power systems reliability and harmonic analysis. Dr. Testa is a Fellow member of the IEEE Power Engineering Society and the Italian Institute of Electrical Engineers (AEIT).



Carlo De Petris Graduated in Mechanical Engineering at the Faculty of Engineering of Rome "La Sapienza".

Since 1982 to 1990

He has been engaged on research activities on engines at FIAT
Research Center in Orbassano (IO), at the Engines Institute of
Naples of the Italian National Council of Research and T&N
Technology Research Center of Rugby (UK).
He has been professor at the Faculty of Engineering of the
University of Cassino (LT) for the machineries design. Since

1996 to 2014

He has carried out research on Non Destructive Testing for the safety of industrial plants.

Saice 2014
He is the Director of the Department of Innovation Technologies of INAIL (National Institute for Assurance against accident at work). He is author of many scientific papers, and inventor of industrial

patents.

PLENARY SESSION TALKS

Roberto Bacci CEI (Italian Electrical Committee) General Director

Standards as key factor in the globalized market. Smart grid applications

Luca Lo Schiavo AEEGSI (Italian Regulatory Authority for Electricity Gas and Water) Infrastructure Regulation dep't, deputy director

The role of the independent regulation to promote innovation in the Italian power system



Dr. Ing. Roberto Bacci born July 6, 1956 in Castelnuovo di Val Cecina (Pisa) Italy Education

University degree, electrotechnical engineering, 1981, Politecnico di Milano - MBA at ISTUD Professional history

1983-2005 Manager and General Manager of companies in Energy Distribution and services AEM SpA Public utilities group since 2006 Managing Director of CEI – Comitato Elettrotecni-co Italiano, Italian Standardization Organization External positions

Board member of ACCREDIA (Italian Quality Accreditation

Board member of IMO (Italian Institute for the Quality Mark)
Board member of AEIT (Electrical Engineering Association)
Board member of FOST (Federation of Scientific and Technical Associations)
Council member of IEC, International Electrotechnical

Commission

FINPOL (Financial Policy Committee of Member of CENELEC)



Luca Lo Schiavo is currently Deputy Director of the Infrastructure Regulation Department at the Italian Regulatory Authority for Electricity Gas and Water (AEEGSI), where he

Authority for Electricity Gas and Water (AEEGSI), where he works since 1997.

He is member of the ACER Electricity Working Group (Infrastructure TF) and of CEER Working Group on Distribution Systems (DS WG)

He is an expert of quality of service and smart grids. He is co-author of the book "Service quality regulation in electricity distribution and retail" (Springer 2007). In 2012 he was awarded with the ICER (International Confederation of Energy Regulators) Distinguished Scholar Award for the paper "Changing the regulation for regulating the change. Innovation-driven regulatory developments in Italy". In 1986 he obtained a degree in Industrial Engineering at the Technical University of Milan, Italy and in 1999 a post graduate qualification in public policy analysis at IDHEAP (Lausanne, CH).

Debora Stefani AEIT President (Italian Association of Electrical, Electronics, Automation, Information and Communication Technology)

The role of the Italian Association of Electrical, Electronics, Automation, Information and Communication Technology Wei Jen-Lee Department of Electrical Engineering, The University of Texas at Arlington

Trend of Smart Grid Development in the US



Debora Stefani Electronic Engineering Master's Degree at University of Florence in 1990.

Since 01/01/2016 Head of North Area of e-distribuzione S.p.A. (ENEL Group Company, Electricty Power Distribution)

Managing some 6500 people, 15 million customers, contractors. Managing network development, operations, maintenance, connections in the area (over 450.000 km MV and LV network) and operating processes certification.

General President of AEIT – Associazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni (IEEE Sister Society – its mission is to spread technical culture of engineering knowledge and innovation about electric energy, electronics, automation, computer science and telecommunications.)



Professor Wei-Jen Lee received the B.S. and M.S. degrees from National Taiwan University, Taipei, Taiwan, R.O.C., and the Ph.D. degree from the University of Texas, Arlington, in 1978, 1980, and 1985, respectively, all in Electrical Engineering. In 1986, he joined the University of Texas at Arlington, where he is currently a professor of the Electrical Engineering Department and the director of the Energy Systems Research Center.

Center.
He has been involved in the revision of IEEE Std. 141, 339, 551, 739, 1584, and dot 3000 series development. He is the Vice President of the IEEE Industry Application Society (IAS). He is an editor of IEEE Transactions on Industry Applications and IAS Magazine and editorial board member of Journal of Modern Power Systems and Clean Energy (MPCE) and CSEE Journal of Power and Energy Systems. He has been inducted as a member of Academy of Distinguished Scholar at the University of Texas at Arlington since 2012. He is the project manager of IEEE/NFPA Collaboration on Arc Flash Phenomena Research

Prof. Lee has been involved in research on utility deregulation, renewable energy, smart grid, microgrid, energy internet and virtual power plants (YPP), are flash hazards and electrical safety, load and wind capacity forecasting, power quality, distribution automation and demand side management, power systems analysis, online real-time equipment diagnostic and prognostic system, and microcomputer based instrument for power systems monitoring, measurement, control, and protection. He has served as the primary investigator (PI) or Co-PI of over one hundred funded research projects with the total amount exceed US\$15 million dollars. He has published more than one hundred and thirty journal papers and two hundred forty conference proceedings. He has provided on-site training courses for power engineers in Panama, China, Taiwan, Korea, Saudi Arabia, Thailand, and Singapore. He has refereed numerous technical papers for IEEE, IET, and other professional organizations.

nal organizations.

Prof. Lee is a Fellow of IEEE and registered Professional Engineer in the State of Texas.

PLENARY SESSION TALKS

Habib Gharagozloo Mazlaghan Electricity Market Deputy Director of Iran Grid management Company,

The state of art of electric power systems in Iran Frank Leferink University of Twente & THALES Netherlands

Conducted interference thanks to, or due to, power electronic systems





Dr. Habib Ghararagozloo works as Iran Electricity Market Deputy Director with Iran Grid Management Company (IGMC) in Tehran. He received his bachelor degree of science in electrical engineering from Sharif University of Technology, the most prominent technical university of Iran, in 1997. Following up the path of knowledge, he received his master and Ph.D. degree from University of Iran is and active in 2000 and 2006 respectively. He has published more 30 journals and conference papers in the field of electrical engineering. Before working with IGMC, he experienced different sectors of Iran electricity industry as an expert for more than 10 years. It was in 2004 that he started his cooperation with IGMC as the power system reliability expert. Currently his work focuses on managing and directing the Iran electricity market. Integration of renewable energies into electricity market, establishing the Intera-day and real time market, engaging the day ahead market with the ancillary service market, developing the data mining methods to enhance the market monitoring capabilities increasing the electricity trades in the power exchange and bilateral contracts, and establishing the regional electricity market with ECO countries are his main concerns.



Frank Leferink has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is responsible for the EMC activities for the development of new radar systems and naval platforms. He is also the Manager of Excellence on EMC of the THALES Group (65.000 employees), with over 100 EMC engineers spread over Europe, Asia, Australia and North-America, and 15 EMC laboratories.

EMC laboratories.

In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. The position is sponsored by THALES. Nine PhD researchers, a senior researcher and several master students are currently active in the EMC group. He published over 300 papers in peer reviewed journals and conferences, and owns 5 patents. Prof. dr. Leferink is chair of the IEEE EMC Benelux Chapter, member of the TPC Asia-Pacific EMC, member of the ISC EMC Europe, member of the Board of Directors of the IEEE EMC Society and associate editor of the IEEE Transactions on EMC.

Antonio De Bellis Country Business Development Manager - ABB S.p.A.

SmartLab: an ecosystem for writing the future



Antonio De Bellis Born in Milan, in 1963.
Graduated in electronic engineering in 1990, at Politecnico of Milan, after a first experience working at TXT SpA, he joined ABB Group, where he has developed his managerial career. At present, he is member of the Country Management Team, in ABB Italy, reporting to the Managing Director. In this position, his main goal is to develop the demand into the Country, by leveraging on the whole ABB portfolio and taking the momentum, due to the digital transformation. Previously, he covered several management roles in ABB, at global, regional and local levels, in the Service, Power Generation and Water, Network Management, Smart Grids and eMobility segments.
Antonio De Bellis is member of ANIE Automazione with the roles of Vice-President and President of a Working Group (Telecontrollo, Supervisione e Automazione delle Reti). Antonio De Bellis Born in Milan, in 1963.

Reti).

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WEDNESDAY June 7th 2017



NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC		
M1-TS1	Mariano Gallo	University of Salerno	Transport systems and sustainable mobility		
M1-TS2	Leonardo Sandrolini Flavia Grassi	University of Bologna Politecnico di Milano	New EMC challenges in the Smart Grid		
M1-TS3	Enrico Telaretti	University of Palermo	Energy storages for power systems application - 1		
M1-TS4	Simone Barcellona	Politecnico di Milano	Power electronics and smart grids - 1		
M1-TS5	Cristian Lazaroiu	University Politehica of Bucharest	Power system stability, security and resiliency - 1		
M1-TS6	Salvatore Favuzza	University of Palermo	Power systems: micro-grids components and operation - 1		
N1-TS1	Stefano De Luca	University of Salerno	Analysis and Assessment of Transportation System Externalities: methodological and technological advances		
N1-TS2	Ruggero Maialetti, Fausto di Tosto	INAIL	The Italian management of electrical safety at work		
N1-TS3	Norma Anglani	University of Pavia	Energy storages for power systems application - 2		
N1-TS4	Simone Barcellona	Politecnico di Milano	Power electronics and smart grids - 2		
N1-TS5	Carlo Alberto Nucci	University of Bologna	Power system stability, security and resiliency - 2		
N1-TS6	Enrico Tironi	Politecnico di Milano	Power systems: micro-grids components and operation - 2		
N1-PS	Michela Longo	Politecnico di Milano	Environmental phenomena related to the power systems		
	Samuele Grillo	Politecnico di Milano	Power systems: distribution grids components and operation - 1		
	Pierluigi Siano	University of Salerno	Renewable energy sources in power systems - 1		
A1-TS1	Vincenzo Di Dio Michela Longo	University of Palermo Politecnico di Milano	Hybrid and Electric Propulsion Systems: new developments and impact on the electric grid		
A1-TS2	Francesco Leccese Mojtaba Navvab	University of Pisa University of Michigan	Interior lighting and daylighting		

WEDNESDAY June 7th 2017



NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC
A1-TS3	Gaetano Zizzo Giorgio Graditi	University of Palermo ENEA	Energy storages for power systems application - 3
A1-TS4	Alessandro Lampasi	ENEA	Electrical Engineering for Nuclear Fusion
A1-TS5	Emanuele Ogliari	Politecnico di Milano	Models for power systems
A1-TS6	Fabio Massaro Salvatore Favuzza	University of Palermo	ICT for smart grid
A1-PS	Giorgio Graditi	ENEA	Materials: nanotechnology for renewable energy, novel materials for energy harvesting
	Roberto Perini	Politecnico di Milano	Measurements
	Hossein Hafezi	Politecnico di Milano	Power electronics and smart grids - 3

THURSDAY June 8th 2017



NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC		
M2-TS1	Fabien Imbault	Evolution Energie	Energy measurement and monitoring - 1		
M2-TS2	Guido Ala	University of Palermo	EMC - Applications and numerical modeling: Lightning, Grounding, EMI filter design		
M2-TS3	Gianhuigi Lo Basso	University of Rome Sapienza	Energy sustainability in small islands		
M2-T54	Paolo Visconti	University of Salento	Smart electronic systems for power consumption monitoring and home energy savings + Sensors, electronic design and testing, actuators for Building/Industrial automation		
M2-TS5	Claudia Daffara Giorgios Karagiannis	University of Verona, Ormylia Foundation - Art Diagnosis Centre (GR)	Advanced technologies for cultural heritage		

THURSDAY

June 8th 2017



NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC		
M2-TS6	Stefano Lauria	University of Rome Sapienza	Power systems: distribution grids components and operation - 1		
N2-TS1	Fabien Imbault	Evolution Energie	Energy measurement and monitoring - 2		
N2-TS2	Davide Poli	University of Pisa	Energy storage for smart grids		
N2-TS3	Renato Procopio	University of Genova	Lightning, environment and energy		
N2-T\$4	Antonio Paolozzi Erricos C. Pavlis	University of Rome Sapienza Joint Center for Earth Systems Technology – UMBC	Advanced technologies for cultural heritage		
N2-TS5	Prabhakar Karthikeyan Fabio Bisegna	University of Rome Sapienza	Smart Grids - Smart Cities - Transforming Life - Transforming the world - 1		
N2-TS6	Roberto Faranda	Politecnico di Milano	Power systems: distribution grids components and operation - 2		
N2-PS	Sergio Amedeo Pignari	Politecnico di Milano	POLIMI-XITU Joint Research Acivity in EE/Power Systems		
	Fabio Bisegna	University of Rome Sapienza	PhD Student		
A2-TS1	Giovanni Luca Amicucci Fabio Fiamingo	INAIL	Electrical Safety Engineering and Grounding		
A2-TS2	Silvano Vergura	University of Bari	Monitoring, diagnostics and reliability		
A2-TS3	Eleonora Riva Sanseverino	University of Palermo	Internet of energy		
A2-TS4	Morris Brenna	Politecnico di Milano	Sustainable transport systems: power infrastructure and electrical vehicles		
A2-TS5	Prabhakar Karthikeyan Fabio Bisegna	VIT University University of Rome Sapienza	Smart Grids - Smart Cities - Transforming Life - Transforming the world - 2		
A2-TS6	Gianfranco Chicco	Politecnico di Torino	Power systems: distribution grids components and operation - 3		
A2-PS	Alicia Triviño Michela Longo	Universidad de Málaga Politecnico di Milano	Wireless Power Transfer		
	Luca Pugi	University of Florence	Sustainable Developement of vehicles: design, power management, sensing and control		

THURSDAY

June 8th 2017



NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC	
A2-PS	Alberto Reatti	University of Florence	Electrical Machines and Power Converters - 1	
	Alberto Dolara	Politecnico di Milano	Renewable energy sources in power systems - 2	

FRIDAY June 9th 2017



NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC		
M3-TS1					
M3-TS2	Sonia Leva	Politecnico di Milano	Renewable energy sources in power systems, distributed generation - 3		
M3-TS3	Alberto Reatti	University of Florence	Electrical Machines and Power Converters - 2		
M3-TS4	Heiko Thimm	Pforzheim University	Maintenance, operation and safety in power systems		
M3-TS5	Hamed Jafari	Politecnico di Milano	Power systems: transmission grids components and operation - I		
M3-TS6	Gaetano Zizzo Marina Bonomolo	University of Palermo	Smart Buildings, Lighting, Metering, Demand Side Management - 1		
N3-TS1	Pierhiigi Siano	University of Salerno	Operation and Control of Emerging Resources in Smart Grids		
N3-TS2	Sonia Leva	Politecnico di Milano	Renewable energy sources in power systems, distributed generation -4		
N3-TS3	Alberto Reatti	University of Florence	Electrical Machines and Power Converters - 3		
N3-TS4	Heiko Thimm	Pforzheim University	Reliability and safety in operation of power systems		
N3-TS5	Hamed Jafari	Politecnico di Milano	Power systems: transmission grids components and operation - 2		
N3-TS6	Francesco Grimaccia	Politecnico di Milano	Smart Buildings, Lighting, Metering, Demand Side Management - 2		



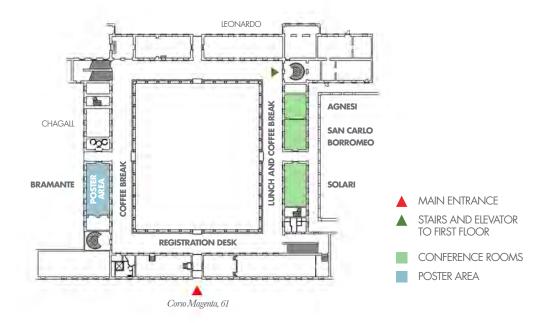


NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC
A3-TS1	Mazaher Haji Bashi	IGMC	Regulation and electricity markets
A3-TS2	Silvia Canevese	RSE	Renewable energy sources in power systems, distributed generation - 5
A3-TS3	Alberto Reatti	University of Florence	Electrical Machines and Power Converters - 4
A3-TS4	Alessandro Burgio	University of Calabria	Circuits, Sensors, Actuators, Electromagnetic Compatibility
A3-TS5	Yi Ding	Zhejiang University	Design and analysis of demand response in restructured retail electricity market
A3-TS6			

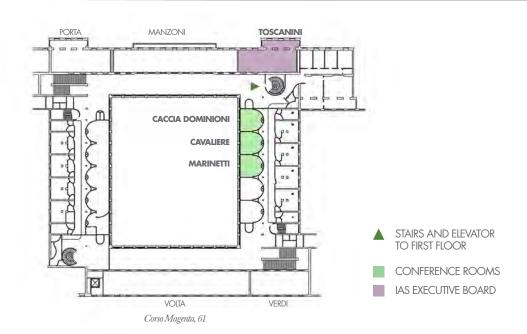
SATURDAY AND SUNDAY June 10|11th 2017

NUMBER AND CODE	NAME AND SURNAME	AFFILIATION	TOPIC
CRS	Zbigniew Leonowicz	Wroclaw University of Science and Technology	Chaired Remote Session

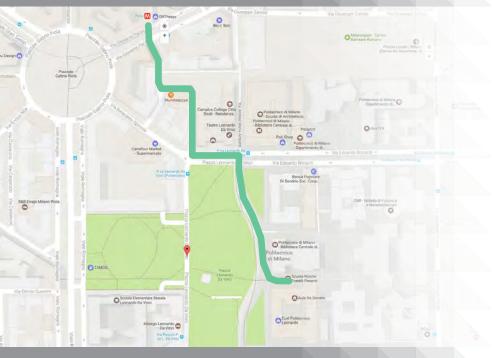
MEETING ROOMS FLOORS PLAN GROUND FLOOR



MEETING ROOMS FLOORS PLAN FIRST FLOOR



PLENARY SESSION AND WELCOME COCKTAIL



OTHER INFORMATIONS

Facilitations offers by VENERABLE FABBRICA DEL DUOMO to conference participants:

• 10% discount on ticket price for the purchase of DuomoPass (entrance to Duomo, Museum, Baptistery and Terraces)

Important: conference participants must present the conference official badge at the ticket office to take facilitation

• 50% discount on to rent the audioguide for visiting the Monumental Complex Standard price: € 9,00 Reserved price: € 4,50

INSTRUCTIONS FOR THE ORAL PRESENTATIONS

PRESENTATION TIME: Presentation time is critical; each paper is allocated about 15 minutes for technical sessions, including time for questions, session-chair introductions, and any set up that is not completed in advance. We recommend that the presentation of your slides leave minutes for introduction by the session chair and questions from the audience. To achieve appropriate timing, organize your slides around the points you intend to make, using no more than one slide per minute. A reasonable strategy is to allocate about 2 minutes per slide when there are equations or important key points to make, and one minute per slide when the content is less complex. Be prepared to begin your presentation as soon as the prior presenter has finished; it is important to keep on schedule.

PRIOR TO YOUR PRESENTATION: Come to the room during the break immediately prior to your session

and upload your presentation to the computer in the room. Note: the presentation computer has ONLY a USB port; there is no CD-ROM or other disc drive. You must also meet with your Session Chair at this time so that your Session Chair is aware that you are present; your Session Chair may also have last-minute

instructions for your presentation.

EQUIPMENT PROVIDED: All lecture rooms will be equipped with a computer, a video projector, and in some of them a microphone. Each computer will have a USB port; there will be no other equipment available. Each computer will have a recent version of the Windows OS installed as well as Acrobat Reader software. While PowerPoint will also be provided, presenters are strongly urged to use PDF for their presentations to avoid issues with fonts and other problems. Remember to embed all your fonts into your PDF presentation. Keep in mind that some of the oral presentations will be given in halls that are quite large. When preparing your slides, make sure that they will be legible for the entire audience (i.e., use fonts of sufficient size).

INSTRUCTIONS FOR POSTER PRESENTATIONS

DIMENSIONS: For your poster, a board will be provided; the board is oriented in a "portrait" format, for containing A0 posters (84,1 × 118,9 cm). Push tacks or Velcro fasteners will be provided at the conference to

mount your poster to the board.

ORGANIZING YOUR POSTER: Poster sessions are a good medium for authors to present papers and meet with interested attendees for in-depth technical discussions. In addition, attendees find the poster sessions a good way to sample many papers in parallel sessions. Thus it is important that you display your message clearly and noticeably to attract people who might have an interest in your paper. Carefully and completely prepare your poster well in advance of the conference. Try tacking up the poster before you leave for the conference to see what it will look like and to make sure that you have all of the necessary pieces. The title of your poster should appear at the top in CAPITAL letters about 25mm high. Below the title, put

the author(s)' name(s) and affiliation(s). The flow of your poster should be from the top left to the bottom right. Use arrows to lead your viewer through the poster. Use color for highlighting and to make your poster more attractive. Use pictures, diagrams, cartoons, figures, etc., rather than text wherever possible. Try to state your main result in 6 lines or less, in lettering about 15mm high so that people can read the poster from a distance. The smallest text on your poster should be at least 9mm high, and the important points should

be in a larger size.

PRESENTING YOUR POSTER: Prepare a short presentation of about 5 or 10 minutes that you can periodically give to those assembled around your poster throughout the poster session. If you need extra presentation materials, such as a video display or computer, you are required to bring them yourself, note that any equipment used in the poster area should be battery-operated, since power will not be provided on the floor. Each poster session is 2 hours long; a presenter must be present at your poster during the entirety of the session. If possible, more than one author should attend the session to aid in presentations and discussions, and to provide the presenters with the chance to rest or briefly view other posters.

PRIOR TO YOUR PRESENTATION: Please put up your poster during the break before your session starts,

and take it down immediately after your session ends. Please go to the poster session 30 minutes before the

session starting.
EQUIPMENT PROVIDED: Push tacks or Velcro fasteners will be provided at the conference to mount your poster to the board. No printers are available on site.

Important note: all the accepted papers have been assigned as an oral presentation in a Technical Session or a poster presentation in a Poster Session. Please consider that papers are scheduled into oral and poster sessions based on thematic coherence and not by paper quality. In either case, the full paper appears in IEEE Xplore, and there is no indication in Xplore as to whether the paper was presented orally or as a poster.

PROGRAM	AT GLANCE																	
DAY 0 - 6 JUNE TUESDA																		
		08:00		09:00		MORNING ORAL SESSIONS	Chair	09:00	11:00		NOON ORAL SESSIONS	Chair	11:30 13:30	13:				
			<u>'</u>		ROOM Solari	M1-TS1	Mariano Gallo	Transport systems and sustain	nable mobility		N1-TS1	Stefano De Luca	Analysis and Assessment of Transportation System Externalities: methodological and technological advances					
					ROOM S. Carlo Borromeo	M1-TS2	Leonardo Sandrolini, Flavia Grassi	New EMC challenges in the			N1-TS2	Ruggero Maialetti, Fausto di Tosto	The Italian management of electrical safety at work					
DAY 1 - 7 JUNE WEDNESDAY	Pakazzo Stelline, Corso Magenta, 61				ROOM Agnesi	M1-TS3	Enrico Telaretti	Energy storages for power syster			N1-TS3	Norma Anglani	Energy storages for power systems application - 2					
WEDN	Wage		NO NO		ROOM Caccia Dominioni	M1-TS4	Simone Barcellona	Power electronics and sma		EAK	N1-TS4	Simone Barcellona	Power electronics and smart grids - 2					
ž	Corso		REGISTRATION		ROOM Cavaliere	M1-TS5	Cristian Lazaroiu	Power system stability, security	and resiliency - 1	COFFEE BREAK	N1-TS5	Carlo Alberto Nucc	Power system stability, security and resiliency - 2					
7-17	telline,		REGI		ROOM Marinetti	M1-TS6	Salvatore Favuzza	Power systems: micro-grids compone	ents and operation - 1	00	N1-TS6	Enrico Tironi	Power systems: micro-grids components and operation - 2					
PA	S OZIZ										NOON POSTER SESSIONS	Chair	11:00 13:00					
	Pak				ROOM Bramante (POSTER AREA)							Michela Longo	Environmental phenomena related to the power systems					
					,						N1-PS	Samuele Grillo	components and operation - 1 TECHNICALLY SPONSORED BY IEEE DES FEAT V SECTION (PES)					
												Pierluigi Siano	Renewable energy sources in power systems - 1					
		08:00		09:00		MORNING ORAL SESSIONS	Chair	09:00	11:00		NOON ORAL SESSIONS	Chair	11:30 13:30	13:				
					ROOM Solari	M2/TS1	Fabien Imbault	Energy measurement and m			N2/TS1	Fabien Imbault	Energy measurement and monitoring - 2					
					ROOM S. Carlo Borromeo	M2-TS2	Guido Ala	EMC - Applications and numerical s Grounding, EMI filter	nodeling: Lightning, design		N2-TS2	Davide Poli	Energy storage for smart grids					
					ROOM Agnesi	M2-TS3	Gianluigi Lo Basso	Energy sustainability in sm	nall islands		N2-TS3	Renato Procopio	Lightning, environment and energy					
JRSDAY	penta, 61		REGISTRATION		ROOM Caccia Dominioni	M2-TS4	Paolo Visconti	Smart electronic systems for power co and home energy savings + Sensors, e testing, actuators for Building/Ind	nsumption monitoring electronic design and ustrial automation		N2:TS4	Antonio Paolozzi, Erricos C. Pavlis	Environmental monitoring using satellites					
DAY 2 - 8 JUNE THURSDAY	Polazzo Stelline, Corso Magenta, 61				ROOM Cavaliere	M2·TS5	Claudia Daffara, Giorgios Karagiannis	Advanced technologies for cu	Itural beritage	COFFEE BREAK	N2-TS5	Prabhakar Karthikeyan, Fabio Bisegna	Smart Grids - Smart Cities - Transforming Life - Transforming the world - 1					
DAY 2 - 1	rzo Stelline,	REGI		REGI		M2-TS6	Stefano Lauria	Power systems: distribution grids comp	onents and operation -	COFFE	N2-TS6	Roberto Faranda	Power systems: distribution grids components and operation - 2					
	Pala										NOON POSTER SESSIONS	Chair	11:00 13:00					
					ROOM Bramante (POSTER AREA)						N2-PS	Sergio Amedeo Pignari	POLIMI-XJTU Joint Research Acivity in EE/Power Systems					
												Fabio Bisegna	PhD Student					
		08:00		09:00		MORNING ORAL SESSIONS	Chair	09:00	11:00		NOON ORAL SESSIONS	Chair	11:30 13:30	13:				
					ROOM Solari	-		-			SESSIONS N3/TS1	Pierluigi Siano	Operation and Control of Emerging Resources in Smart Grids					
) AY	genta, 61				ROOM S. Carlo Borromeo	M3-TS2	Sonia Leva	Renewable energy sources in power generation - 3	systems, distributed		N3-TS2	Sonia Leva	Renewable energy sources in power systems, distributed generation - 4					
DAY 3 - 9 JUNE FRIDAY	e, Corso Ma						REGISTRATION		ROOM Agnesi	M3-TS3	Alberto Reatti	Electrical Machines and Power	Converters - 2	COFFE BREAK	N3-TS3	Alberto Reatti	Electrical Machines and Power Converters - 3	
DAY 3-	Palazzo Shelline, Corso Magenta, 61		REGIS		ROOM Caccia Dominioni	M3-TS4	Heiko Thimm	Maintenance, operation and safety	in power systems	OFFE	N3-TS4	Heiko Thimm	Reliability and safety in operation of power systems					
	4				ROOM Cavaliere	M3-TS5	Hamed Jafari	Power systems: transmission grids com	ponents and operation -		N3-TS5	Hamed Jafari	Power systems: transmission grids components and operation - 2					
					ROOM Marinetti	M3-TS6	Gaetano Zizzo, Marina Bonomolo	Smart Buildings, Lighting, Meter Management - 1	ing, Demand Side		N3-TS6	Francesco Grimaccia	Smart Buildings, Lighting, Metering, Demand Side Management - 2					

								_						
					14:30	15:30		16:00		19:00		19:00		20:30
					Registration	13.33	Politenico di Milano Leonardo, Piazza Leonardo da Vinci 32 - Aula Osvaldo De Donato, Building n. 3 Ground Floor		Plenary Wekome and Keynotes	17.00	Politenico di Milano Leonardo, Piazza Leonardo da Vised 32	7700	WELCOME COCKTAIL	25.00
30	15:00		AFTERNOON ORAL SESSIONS	Chair	15:00	17:00	17:15	17:30		19:00				
LUNGH - IEEE Power & Energy Society Scholarship Plus Initiative - Region 8 - Italy Socien		ROOM Solari	A1-TS1	Vincenzo Di Dio, Michela Longo	Hybrid and Electric Pr new developments as electric	ropulsion Systems: nd impact on the grid								
hip Plu		ROOM S. Carlo Borromeo	A1-TS2	Francesco Leccese, Mojtaba Navvab Gaetano Zizzo,	Interior lighting as									
olars ion		ROOM Agnesi ROOM Caccia	A1-TS3	Giorgio Graditi	application	on - 3								
y Sch ' Sect		Dominioni	A1-TS4	Alessandro Lampasi	Electrical Engineer Fusio				212					
Societ - Italy		ROOM Cavaliere	A1-TS5	Emanuele Ogliari	Models for pow		Meeting Point at Palazzo Stelline Main Entrance		TOUR EEEIC17					
on 8		ROOM Marinetti	A1-TS6	Fabio Massaro, Salvatore Favuzza	ICT for sma	art grid	Main Entrance		JO L					
& Enc Regic			AFTERNOON POSTER SESSIONS	Chair	14:30	16:30								
E Power		ROOM Bramante (POSTER AREA)		Giorgio Graditi	Materials: nanotechnol energy, novel mate harvest	logy for renewable rials for energy ing								
CH - IEE		(FOSTER AREA)	A1-PS	Roberto Perini	Measurer									
30	15:00		AFTERNOON ORAL SESSIONS	Hossein Hafezi Chair	Power electronics an	nd smart grids - 3						19:30		23:00
30	15:00			Giovanni Luca Amicucci, Fabio	15:00 Electrical Safety Es							19:30		23:00
		ROOM Solari ROOM S. Carlo	A2-TS1	Fiamingo	Ground	ling								
		Borromeo	A2-TS2	Silvano Vergura	Monitoring, diagnosti	ics and reliability								
IN		ROOM Agnesi	A2-TS3	Eleonora Riva Sanseverino	Internet of	energy								
LUNCH - PHD BEST POSTER AWARD EVENT		ROOM Caccia Dominioni	A2-TS4	Morris Brenna	Sustainable transpor infrastructure and el	t systems: power lectrical vehicles							_	
T POSTER		ROOM Cavaliere	A2-TS5	Prabhakar Karthikeyan, Fabio Bisegna	Smart Grids - Smart Ci Life - Transformin	ities - Transforming ig the world - 2					Museo Diocesano di Milano - Corso di Porta Ticinese, 95		SOCIAL DINNER	
PHD BES		ROOM Marinetti	A2-TS6	Gianfranco Chicco	Power systems: dis components and	tribution grids operation - 3							SOCIA	
NCH			AFTERNOON POSTER SESSIONS		14:30	16:30								
3				Alicia Triviño, Michela Longo	Wireless Powe									
		ROOM Bramante (POSTER AREA)	A2-PS	Luca Pugi	Sustainable Develope design, power manage contro	ment, sensing and ol								
		(POSTER AREA)	AL-13	Alberto Reatti	Electrical Machin Converte									
				Alberto Dolara	Renewable energy s systems	ources in power s - 2								
30	15:00		AFTERNOON ORAL SESSIONS	Chair	15:00	17:00								
		ROOM Solari	A3-TS1	Mazaher Haji Bashi	Regulation and elec	ctricity markets	·							
		ROOM S. Carlo Borromeo	A3-TS2	Silvia Canevese	Renewable energy s systems, distributes	ources in power d generation - 5								
IUNCH		ROOM Agnesi	A3-TS3	Alberto Reatti	Electrical Machin Converte									
IM		ROOM Caccia Dominioni	A3-TS4	Alessandro Burgio	Circuits, Sensor Electromagnetic	Compatibility								
		ROOM Cavaliere	A3-TS5	Yi Ding	Design and analysis of in restructured retail	demand response electricity market								
		ROOM Marinetti	***	-	-									



TECHNICAL SESSION 1 (M1-TS1)

TRANSPORT SYSTEMS AND SUSTAINABLE MOBILITY

Session Chair: **Mariano Gallo** University of Salerno

Wednesday, June 7th, 2017 | 9:00 – 11:00

Venue: Room Solari

M1-TS1 194 AN ANALYTICAL APPROACH FOR DETERMINING RESERVE TIMES ON METRO SYSTEMS

Luca D'Acierno, Marilisa Botte, Bruno Montella Federico II University of Naples

M1-TS1 181 THE POTENTIAL EFFECTS OF REAL-TIME PARKING (RTP) SYSTEMS ON CRUISING FOR PARKING AND GREENHOUSE GAS EMISSIONS

Mariano Gallo, Filippo Montone

Dipartimento di Ingegneria, Università del Sannio

ENHANCING ENERGY EFFICIENCY IN RAILWAY OPERATION THROUGH RCG-BASED RESCHEDULING M1-TS1 356

Ambra Toletti, Valerio De Martinis, Ulrich Weidmann Institute for Transport Planning and Systems ETH Zurich - Zurich, Switzerland

M1-TS1 374 THE EBSF 2 INNOVATIVE PREDICTIVE MAINTENANCE SYSTEM FOR BUSES

Maria Vittoria Corazza(1), Daniela Vasari(2), Silvia Magnalardo(2), Enrico Petracci (2),

Michele Tozzi (3)

(1) Sapienza University of Rome, (2) Pluservice srl Senigallia, Italy, (3) UTTP - International Association of Public Transport Brussels, Belgium

M1-TS1 384 ON-DEMAND DYNAMIC BI-/MULTI-MODAL RIDE-SHARING **USING OPTIMAL PASSENGER-VEHICLE ASSIGNMENTS**

Tai-Yu Ma

Department of Urban Development and Mobility LISER - Esch-sur-Alzette, Luxembourg

MATCHING MACRO- AND MICRO-SCOPIC APPROACHES FOR THE EVALUATION OF TRAFFIC MANAGEMENT IMPACTS M1-TS1 487

Stefano De Luca(1), Roberta Di Pace(1), Silvio Memoli(1), Luigi Pariota(2)

(1) University of Salerno, (2) University of Naples

M1-TS1 599

A SYSTEM OF INTEGRATED TECHNOLOGIES FOR THE HANDLING OF AUTOMATED FREIGHT WAGONS

Domenico GATTUSO(1), Gian Carla Cassone(1),

Antonio Lucisano(2), Francesco Lucisano(2), Maurizio Lucisano(2) (1) Mediterranea University, (2) COELDA Software S.r.l.

M1-TS1 192 THE IMPACT OF BATTERY ELECTRIC BUSES IN PUBLIC TRANSPORT

Gaetano Valenti(1), Carlo Liberto(1), Maria Lelli(1), Marina Ferrara(2), Marialisa Nigro(2), Carlo Villante(3) (1) ENEA - Rome, Italy, (2) Roma Tre University, (3) DIHE – University of L'Aquila





TECHNICAL SESSION 2 (M1-TS2)

NEW EMC CHALLENGES IN THE SMART GRID Session Chair: Leonardo Sandrolini, Flavia Grassi University of Bologna, Politecnico di Milano

Wednesday, June 7th, 2017 | 9:00 – 11:00 Venue: Room S. Carlo Borromeo

M1-TS2 642	CALCULATION OF COMPLEX PERMITTIVITY FOR SHIELDING EFFECTIVENESS EQUIVALENCE Ming-xiang Gao(1), Yan-zhao Xie(1), Qi Li(1), Yan-hong Miao(2) (1) Xi'an Jiaotong University, (2) Beijing institute of space launch technology
M1-T\$2 565	LIGHTNING PERFORMANCE OF DISTRIBUTION LINES DUE TO POSITIVE AND NEGATIVE INDIRECT LIGHTNING FLASHES Fabio Napolitano(1), Fabio Tossani(1), Alberto Borghetti(1), Carlo Alberto Nucci(1), Farhad Rachidi(2) (1) University of Bologna, (2) Swiss Federal Institute of Technology (EPFL)
M1-TS2 149	REDUCING COMMON MODE EMI GENERATION IN A BOOST CONVERTER USING THE IMBALANCE DIFFERENCE MODEL Arnold De Beer University of Johannesburg
M1-TS2 566	REPRODUCIBILITY OF CONDUCTED DISTURBANCE MEASUREMENTS Carlo Carobbi University of Florence
M1-TS2 316	DESIGN AND EVALUATION OF A KW-CLASS SMES-BES DVR SYSTEM FOR MITIGATION OF POWER QUALITY DISTURBANCES Zi-Xuan Zheng, Xian-Yong Xiao, Chun-Jun Huang, Chang-Song Li Sichuan University
M1-TS2 727	TIME DOMAIN MAGNETIC SHIELDING PERFORMANCE OF THIN SHIELDS Rodolfo Araneo, Salvatore Celozzi, Giampiero Lovat, Paolo Burghignoli Sapienza University of Rome
M1-TS2 644	MULTI-PHYSICS MODELING AND OPTIMIZED DESIGN OF ASYMMETRIC INTEGRATED OPTICAL SENSOR FOR ELECTROMAGNETIC PULSE MEASUREMENT Lu Wan(1), Yu Chen(1), Yonghong Yin(1), Yonghong Cheng(1), Flavia Grassi(2), Sergio Pignari(1) (1) Xi'an Jiaotong University, (2) Politecnico di Milano



TECHNICAL SESSION 3 (M1-TS3)

ENERGY STORAGES FOR POWER SYSTEMS APPLICATION - 1 Session Chair: Enrico Telaretti University of Palermo

University of Palermo

Wednesday, June 7th, 2017 | 9:00 – 11:00 Venue: Room Agnesi

M1-TS3 250

M1-TS3 450

REUSE EV BATTERY SYSTEM FOR RENEWABLE ENERGY INTRODUCTION TO ISLAND POWERGRID Yuki Matsuda, Kenji Tanaka Graduate School of Engineering, The University of Tokyo M1-TS3 440 **OPTIMAL MATCHING BETWEEN OPTICAL RECTENNAS AND HARVESTER CIRCUITS** Chiara Di Garbo(1), Patrizia Livreri(1), Gianpaolo Vitale(2) (1) University of Palermo, (2) CNR-ISSIA AN INNOVATIVE BESS MANAGEMENT FOR DYNAMIC FREQUENCY RESTORATION M1-TS3 701 Giorgio Graditi, Roberto Ciavarella, Maria Valenti ENEA, Centro Ricerche Portici M1-TS3 254 **CAPACITY OPTIMIZATION FOR HYBRID SMES-BES** USED IN DYNAMIC VOLTAGE RESTORER Chun-Jun Huang, Xian-Yong Xiao, Zi-Xuan Zheng, Chang-song Li Sichuan University LITHIUM-ION BATTERY DEGRADATION INDICATORS VIA INCREMENTAL CAPACITY ANALYSIS M1-TS3 564 David Anseán, Manuela González, Cecilio Blanco, Juan Carlos Viera, Yoana Fernández, Víctor García University of Oviedo STATIONARY BATTERY SYSTEMS IN THE MAIN WORLD MARKETS PART 1: OVERVIEW OF THE STATE-OF-THE-ART M1-TS3 602 Enrico Telaretti, Luigi Dusonchet University of Palermo STATIONARY BATTERY SYSTEMS IN THE MAIN WORLD MARKETS PART 2: M1-TS3 604 **MAIN TRENDS AND PROSPECTS** Enrico Telaretti, Luigi Dusonchet

MANAGING RES UNCERTAINTY AND STABILITY ISSUES IN DISTRIBUTION SYSTEMS

VIA ENERGY STORAGE SYSTEMS AND SWITCHABLE REACTIVE POWER SOURCES Mário P.S. Pereira (1), Desta Z. Fitiwi (2), S. F. Santos (2), João P.S. Catalão (1) (2) (3) (1) INESC TEC and FEUP, (2) C-MAST/UBI - Covilha, (3) INESC-ID/IST-UL-Lisbon

TECHNICAL SESSION 4 (M1-TS4)

POWER ELECTRONICS **AND SMART GRIDS - 1**

Session Chair: Simone Barcellona Politecnico di Milano

Wednesday, June 7th, 2017 | 9:00 – 11:00 Venue: Room Caccia Dominioni

M1-TS4 006 **CONCEPT, DESIGN AND IMPLEMENTATION OF POWER SYSTEM** COMPONENT SIMULATOR BASED ON THYRISTOR CONTROLLED TRANSFORMER AND POWER CONVERTER Bartosz Kedra(1), Robert Małkowski(2)

(1) Institute of Power Engineering - Research Institute Gdansk Division, (2) Gdańsk University of Technology

AN ANALYSIS OF DELAY-BASED AND INTEGRATOR-BASED SEQUENCE DETECTORS FOR GRID-CONNECTED CONVERTERS M1-TS4 189 Hesam Khazraj, Filipe Faria da Silva, Claus Leth Bak Aalborg universtity

INSTANTANEOUS CONDUCTION AND SWITCHING LOSSES IN TWO-LEVEL VOLTAGE SOURCE INVERTERS Mahdi Fakharmanesh(1), Christoph Hackl(2), Roberto Perini(1) M1-TS4 416 (1) Politecnico di Milano, (2) Technische Universität München

M1-TS4 439 LOSSES OF 4H-SIC DMOFET IN HIGH VOLTAGE POWER CONVERTERS Luigi Di Benedetto, Gian Domenico Licciardo University of Salerno

REALIZATION OF 5-BUS SYSTEM USING SOFT COMPUTING TECHNIQUE FOR FLEXIBLE ALTERNATING CURRENT TRANSMISSION SYSTEM (FACTS) DEVICES M1-TS4 732 Zade Ankit Ashokrao(1), Pachagade Ruchi(1), Sanjeevikumar Padmanaban(2), Mahajan Sagar Bhaskar(2), Luigi Martirano(3), Zbigniew Leonowicz(4) (1) Dept. of Electrical Engg. Jagadambha College of Engineering and Technology, (2) University of Johannesburg, (3) Sapienza University of Rome, (4) Wrocław University of Science and Technology

M1-TS4 726 CHARACTERIZATION OF A POWER LINE CABLE FOR CHANNEL FREQUENCY RESPONSE - ANALYSIS AND INVESTIGATION
Sheri Ashraf, Arnold De Beer, Sanjeevikumar Padmanaban, Allan Emleh, Hendrik C. Ferreira
University of Johannesburg

PERFORMANCE ANALYSIS OF MULTILEVEL INVERTER FED TWO INDUCTION MOTOR IN PARALLEL WITH ESTIMATED PARAMETER FOR TRACTION APPLICATION S. Usha(1); C. Subramani(1), S.S. Dash(1), Sanjeevikumar Padmanaban(2), Zbigniew Leonowicz(3) (1) Department of Electrical and Electronics Engineering, SRM University, (2) University of Laboration (3) Western University of Science (17); S. S. Dash(1), M1-TS4 731 Johannesburg, (3) Wrocław University of Science and Technology

M1-TS4 361 POWER HARDWARE IN THE LOOP SIMULATOR OF PHOTOVOLTAIC PLANT FOR SMART GRID INTERATION ANALYSIS Yujia Huo, Giambattista Gruosso, Luigi Piegari Politecnico di Milano

FLOW ACCELERATOR FOR WIND POWER INSTALLATIONS WITH THE VERTICAL ROTATION AXIS M1-TS4 017 Anton Bubenchikov, Tatyana Bubenchikova, Elena Artamonova, Alexandr Shepelev Omsk State Technical University



TECHNICAL SESSION 5 (M1-TS5)

POWER SYSTEM STABILITY SECURITY AND RESILIENCY - 1

Session Chair: Cristian Lazaroiu University Politehnica of Bucharest

Wednesday, June 7th, 2017 | 9:00 – 11:00

Venue: Room Cavaliere

M1-TS5 157 DEVELOPMENT AND INTEGRATION OF ADAPTIVE UNDERFREQUENCY LOAD

SHEDDING INTO THE SMART GRID Roman Petrichenko, Vladimir Chuvychin, Antans Sauhats, Vadims Strelkovs

Riga Technical University

RBF-FUZZY CONTROL OF A SMES UNIT: AN EFFECTIVE TOOL FOR ENHANCING TRANSIENT STABILITY LIMIT M1-TS5 347

Mojtaba Babaei(1), Mehrdad Eghlimi(2), Jamshid Aghaei(2) (1) Islamic Azad University, (2) Shiraz University of Technology

PREDICTION OF LATVIAN ELECTRICAL POWER SYSTEM FOR RELIABILITY EVALUATION INCLUDING WIND ENERGY M1-TS5 014

Aleksejs Sobolevskis, Inga Zicmane

Riga Technical University

M1-TS5 519 STATE ESTIMATION OF ACTIVE DISTRIBUTION SYSTEM BASED ON THE FACTOR

GRAPH ANALYSIS AND BELIEF PROPAGATION ALGORITHM Chenhui Yin, Dechang Yang, Xiaoyu Zhao

China Agricultural University

FAULT TOLERANT TRACTION DRIVE OF ELECTRICAL HELICOPTER WITH BATTERY ELECTRIC ENERGY STORAGE
Igor Bolvashenkov, Jörg Kammermann, Hans-Georg Herzog
Technical University of Munich (TUM) M1-TS5 031

M1-TS5 134

INTEGRATING DETERMINISTIC AND PROBABILISTIC TOOLS FOR VOLTAGE STABILITY ASSESSMENT WITH USING ONLINE DECISION TREES Nikita Tomin, Victor Kurbatsky, Dmitry Krupeney, Denis Sidorov

Melentiev Energy Systems Institute

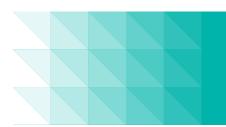
M1-TS5 669

OPTIMAL COMBINING SCHEME TO REDUCE POWER LOSS IN DISTRIBUTION SYSTEM BY CONSIDERING CARBON EMISSION

Tang Hongwei(1), Tang Wei(1), Wang Xianhu(1), Peng Jing(2), Jingjing Zheng(2), Wang Weizhou(2), Liu Fuchao(2)

(1) China Agricultural University, (2) Electric Power Research Institute of State Grid Gansu Electric Power Corporation - Lanzhou, China





M1-TS6 679

TECHNICAL SESSION 6 (M1-TS6)

POWER SYSTEMS: MICRO-GRIDS COMPONENTS AND OPERATION - 1

Session Chair: **Salvatore Favuzza** University of Palermo

Wednesday, June 7th, 2017 | 9:00 – 11:00 Venue: Room Marinetti

USING PID/FUZZY CONTROLLER BASED ON BATTERY ENERGY STORAGE Giuseppe Parise(1), Luigi Martirano(1), Mostafa Kermani(1), Morteza Kermani(2) (1) Sapienza University of Rome, (2) Islamic Azad University Neyshabur Branch, Iran M1-TS6 424 IMPROVING THE STABILITY OF SEIG BASED MICROGRIDS DURING OVERLOADS BY USING SUPERCAPACITOR-BASED STORAGE AND LOAD-SHEDDING Catalin Ion, Ioan Serban Transilvania University of Brasov REPLACING DIESEL GENERATORS WITH HYBRID RENEWABLE POWER PLANTS: GIANNUTRI SMART ISLAND PROJECT M1-TS6 436 Francesco Palone(1), Pierluigi Portoghese(1), Luca Buono(1), Andrea Necci(1), Claudio Rosati(2), Daniele Rosati(2) (1) TERNA, (2) Electro Power Systems REPLACING DIESEL GENERATORS WITH HYBRID RENEWABLE POWER PLANTS: GIGLIO SMART ISLAND PROJECT
Francesco Palone(1), Pierluigi Portoghese(1), Luca Buono(1), Andrea Necci(1), Fabio Massimo Gatta(2), Alberto Geri(2), Stefano Lauria(2), Marco Maccioni(2) M1-TS6 538 (1) TERNA. (2) Sapienza University of Rome A STABILITY-ORIENTED DESIGN METHOD FOR VIRTUAL IMPEDANCE LOOP IN DROOP-CONTROLLED CONVERTERS M1-TS6 395 Alberto Bolzoni(1), Roberto Perini(1), Luisa Frosio(2) (1) Politecnico di Milano, (2) EPS Elvi Energy M1-TS6 389 TECHNICAL ISSUES OF SOLAR- AND GAS ENGINE BASED MICROGRIDS -ASSESSMENT ON FEASIBILITY BY USING PRESENT TECHNOLOGIES Balint Gyorvari, Istvan Vokony

Budapest University of Technology and Economics

DESIGNING A POWER CONTROL STRATEGY IN A MICROGRID



TECHNICAL SESSION 7 (N1-TS1)

ANALYSIS AND ASSESSMENT OF TRANSPORTATION **SYSTEM EXTERNALITIES: METHODOLOGICAL AND** TECHNOLOGICAL ADVANCES
Session Chair: Stefano De Luca
University of Salerno

Wednesday, June 7th, 2017 | 11:30 – 13:30 Venue: Room Solari

N1-TS1 298	EXPLORING CROWDSOURCING INFORMATION TO PREDICT TRAFFIC-RELATED IMPACTS Pavlos Tafidis, João Teixeira, Behnam Bahmankhah, Eloísa Macedo, Margarida C. Coelho, Jorge Bandeira University of Aveiro
N1-TS1 346	CHARACTERISTICS OF HOUSEHOLD MOBILITY FOR MILAN: A STATISTICAL INVESTIGATION OF UNDERLYING DETERMINANTS Meng Xu(1), Lorenzo Mussone(2), Susan Grant-Muller(3), Leilei Liang(1) (1) Beijing Jiaotong University, (2) Politecnico di Milano, (3) University of Leeds
N1-TS1 368	ANALYSIS OF ENTERING FLOWS IN THE CONGESTION PRICING AREA C OF MILAN Lorenzo Mussone Politecnico di Milano
N1-TS1 447	IMPROVING GEOMETRIC CONFIGURATIONS AND LEVEL OF SERVICE OF INTERSECTIONS UNDER LOW-VOLUME CONDITIONS Francesca Russo, Salvatore Antonio Biancardo University of Naples Federico II
N1-TS1 491	THE USE OF THE ANALYTIC HIERARCHY PROCESS METHOD FOR SUPPORTING URBAN ROAD REGENERATION ACTIONS: THE CASE STUDY OF NAPLES Silvio Memoli(1), Mario Calabrese(1), Pasquale Di Pace(1), Nicola Pascale(1), Stefano De Luca(2) (1) Municipality of Naples, (2) University of Salerno
N1-TS1 515	TIME SERIES ANALYSIS TECHNIQUES APPLIED TO TRANSPORTATION NOISE Claudio Guarnaccia, Luigi Elia, Joseph Quartieri, Carmine Tepedino University of Salerno
N1-TS1 179	TRADITIONAL RANDOM UTILITY MODELS VS HYBRID CHOICE MODELS FOR ASSESSING ENVIRONMENTAL IMPACTS OF A NEW TECHNOLOGY: THE HYSOLAKIT CASE STUDY Stefano De Luca, Roberta Di Pace University of Salerno
N1-TS1 339	EXTERNAL COSTS ESTIMATION IN A COST-BENEFIT ANALYSIS: THE NEW FORMIA-GAETA TOURIST RAILWAY LINE IN ITALY Armando Carteni, Ilaria Henke University of Naples - Department of Civil, Construction and Environmental Engineering





TECHNICAL SESSION 8 (N1-TS2)

MANAGEMENT OF ELECTRICAL SAFETY AT WORK Session Chair: Ruggero Maialetti, Fausto Di Tosto INAIL

> Wednesday, June 7th, 2017 | 11:30 – 13:30 Venue: Room S. Carlo Borromeo

N1-TS2 716	ELECTRICAL RISKS ASSESSMENT AND MANAGEMENT AT WORK IN ITALY Ruggero Maialetti INAIL
N1-T\$2 717	PERIODIC INSPECTION AND TESTING OF ELECTRICAL INSTALLATIONS IN POTENTIALLY EXPLOSIVE ATMOSPHERES Fausto Di Tosto INAIL
N1-TS2 725	FIRE SAFETY CRITERIA IN ELECTRICAL INSTALLATIONS DESIGN Pierpaolo Gentile, Michele Mazzaro, Calogero Turturici Italian National Fire Corps - Ministry of Interiors
N1-TS2 650	ACCIDENTS WITH INJURIES OR DEATH DURING NON-ELECTRICAL WORK ACTIVITIES NEAR OVERHEAD POWER LINES Giovanni Luca Amicucci, Maria Teresa Settino INAIL
N1-TS2 728	ANALYSIS OF WORK ACCIDENTS WITH ELECTRICAL ORIGIN Paolo Panaro INAIL.



TECHNICAL SESSION 9 (N1-TS3)

ENERGY STORAGES FOR

POWER SYSTEMS APPLICATION - 2 Session Chair: Norma Anglani University of Pavia

Wednesday, June 7th, 2017 | 11:30 – 13:30

Venue: Room Agnesi

HOW TO CONTROL SUPERCAPACITORS AND TO ACCOUNT FOR THE CONSEQUENT EXTENSION OF BATTERY LIFETIME IN AN ISOLATED AC MICROGRID Norma Anglani(1), Giovanna Oriti(2), Alexander Julian(3), Vincenzo Catania(1) N1-TS3 262 (1) University of Pavia, (2) Naval Postgraduate School - Monterey, CA, USA, (3) Consultant - Seaside, CA, USA

N1-TS3 177 OPTIMIZATION OF THE MANUFACTURING PROCESS OF A STRANDED CABLE Ewa Napieralska-Juszczak(1), Piotr Napieralski(2) (1) LSEE - UA - Technoparc Futura, (2) Institute of Information Technology - Łódź University of Technology, Poland

VOLTAGE STABILIZATION AND EFFICIENCY IMPROVEMENTS ON DC RAILWAYS BY STAND ALONE ENERGY STORAGE SYSTEMS N1-TS3 422

Alessio Clerici; Enrico Tironi, Francesco Castelli Dezza Politecnico di Milano

STOCHASTIC RESERVE SCHEDULING IN SMART SYSTEMS INCORPORATING ENERGY STORAGE SYSTEM Amirhossein Khazali; Mohsen Kalantar N1-TS3 058

Iran University of Science and Technology

N1-TS3 286 ASSESSMENT OF N-1 CRITERIA USING ENERGY STORAGE

Zora Luburić (1), Hrvoje Pandžić (1), Tomislav Plavšić (2), Ljupko Teklić (2), Vladimir Valentić (2) (1) FER, University of Zagreb, Croatia, (2) Croatian TSO, HOPS

N1-TS3 077

ENERGY STORAGE DEVICE BASED ON FLYWHEEL POWER CONVERTERS AND SIMULINK REAL-TIME

Frede Blaabjerg(1), Bartosz Kędra(2), Robert Małkowski(3) (1) Aalborg University, (2) Institute of Power Engineering Gdansk, Poland,

(3) Gdansk University of Technology

RENEWABLES CONTRIBUTING TO PRIMARY CONTROL RESERVE: THE ROLE OF BATTERY ENERGY STORAGE SYSTEMS
Fabio Bignucolo(1), Roberto Caldo(1), Martino Pettinà(1), Fabio Pasut(2) N1-TS3 127

(1) University of Padova, (2) S.T.E. Energy SpA

N1-TS3 228 **OPTIMAL OPERATION STRATEGY OF A HYBRID PV-BATTERY SYSTEM**

UNDER GRID SCHEDULED BLACKOUTS

Mansour Alramlawi, Aouss Gabash, Pu Li Ilmenau University of Technology





N1-TS4 103

TECHNICAL SESSION 10 (N1-TS4)

POWER ELECTRONICS AND SMART GRIDS - 2 Session Chair: Simone Barcellona Politecnico di Milano

Wednesday, June 7th, 2017 | 11:30 – 13:30 Venue: Room Caccia Dominioni

N1-154 103	Hussein al-bayaty, Ali Hussein Al-Omari, Marcel Ambroze, Mohammed Zaki Ahmed School of Computing Electronics and Mathematics - Plymouth University, UK
N1-TS4 279	GRID INTERCONNECTION OF RENEWABLE ENERGY SOURCES BASED ON ADVANCED MULTI-LEVEL INVERTER Mamadou Beye(1), Moataz Elsied(1), Augustin Mpanda Mabwe(1), Charles Onambele(2) (1) ESIEE-Amiens, (2) University of Picardie Jules Verne (UPJV)
N1-TS4 471	A NOVEL TOPOLOGY FOR SINGLE PHASE ACTIVE PFC CIRCUIT Hussein al-bayaty, Ali Hussein Al-Omari, Marcel Ambroze, Mohammed Zaki Ahmed School of Computing Electronics and Mathematics - Plymouth University, UK
N1-TS4 598	CAPACITOR CURRENT FEEDBACK ACTIVE DAMPING FOR SHUNT ACTIVE POWER FILTER WITH OUTPUT LICL FILTER Mehmet Büyük, Mustafa İnci, Adnan Tan, Mehmet Tümay Mehmet Tümay Çukurova University, Electrical and Electronics Engineering - Adana, Turkey
N1-TS4 659	THIRD ORDER HARMONIC ELIMINATION TECHNIQUE FOR APFC CIRCUIT Hussein Al-Bayaty, Ali Hussein Al-Omari, Marcel Ambroze, Mohammed Zaki Ahmed School of Computing Electronics and Mathematics - Plymouth University, UK
N1-TS4 247	STUDY, ANALYSIS AND OPTIMIZATION OF MULTILEVEL INVERTERS BASED IN A HIGH STEPPING DC/DC CONVERTER FOR RENEWABLE ENERGIES Alejandro Zavala Bárcenas, Benjamin Vidales Luna, Domingo Torres Lucio, Manuel Madrigal Martinez Instituto Tecnológico de Morelia, ITM
N1-TS4 470	A HYBRID SWITCHING VSC CONVERTER FOR REACTIVE POWER COMPENSATION IN UTILITY GRID Amitkumar K.S., Mahmud G. Bijan, Tamanwe Payarou, Navjot Singh, Akshay K. Rathore, Pragasen Pillay Concordia University - Montreal, Canada

A NEW DESIGN FOR PEC CIPCLIT WITH PEDLICED SIZE INDUCTOR



TECHNICAL SESSION 11 (N1-TS5)

POWER SYSTEM STABILITY, SECURITY AND RESILIENCY - 2

Session Chair: **Carlo Alberto Nucci** University of Bologna

Wednesday, June 7th, 2017 | 11:30 – 13:30

Venue: Room Cavaliere

ANALYSING GRID IMPACT OF VOLTAGE FLUCTUATIONS FROM MULTIPLE SOURCES WITH/WITHOUT STATCOM George Cristian Lazaroiu(1), Nicolae Golovanov(1), Luminita Elefterescu(1), N1-TS5 452 Mariacristina Roscia(2), Dario Zaninell(3) (1) Univ. Politehnica Bucharest, (2) Università di Bergamo, (3) Politecnico di Milano N1-TS5 075 EFFECT OF CONTROLLABLE LOAD ON TRANSMISSION CAPACITY CONSTRAINTS Antans Sauhats, Sergey Kovalenko, Karlis Baltputnis, Zane Broka, Inga Zicmane Riga Technical University ALGORITHM FOR OUT-OF-STEP CONDITION DETECTION AND EARLY WARNING USING PHASOR MEASUREMENT UNIT DATA N1-TS5 204 Igor Ivankovic(1), Igor Kuzle(2), Ninoslav Holjevac(2) (I) Croatian Transmission System Operator Ltd, (2) University of Zagreb CONTRIBUTION OF ELECTRIC VEHICLES FOR FREQUENCY REGULATION IN PRESENCE OF DIVERSE POWER SOURCES AND TRANSMISSION LINKS Arunima Dutta, Sanjoy Debbarma, Shaik Affijulla National Institute of Technology Meghalaya - Shillong, India N1-TS5 350 CUCKOO SEARCH ALGORITHM FOR INTEGRATION WIND POWER GENERATION TO MEET LOAD DEMAND GROWTH
Saida Makhloufi(1), Saheb Djohra Koussa(1), Gobind Gopalakrishna Pillai(2)
(1) Centre de Développement des Energies Renouvelables,
(2) School of Science and Engineering Stephenson Building Teesside University N1-TS5 002 APPLICATION OF ADAPTIVE REGULATOR FOR STATIC VARIABLE COMPENSATOR Zhivko Grozdev(1), Nikolay Djagarov(1), Julia Djagarova(2)
(1) Nikola Vaptsarov Naval Academy - Varna, Bulgaria, (2) Technical University - Varna, Bulgaria N1-TS5 144 N1-TS5 469 STOCHASTIC LCOE IN PORTFOLIO SELECTION OF ELECTRICITY GENERATION **Jerzy Dzieża** AGH University of Science and Technology al. Mickiewicza Kraków





TECHNICAL SESSION 12 (N1-TS6)

POWER SYSTEMS: MICRO-GRIDS COMPONENTS AND OPERATION - 2

Session Chair: **Enrico Tironi** Politecnico di Milano

Wednesday, June 7th, 2017 | 11:30 – 13:30 Venue: Room Marinetti

INTEGRATED CONTROL STRATEGY FOR ISLANDED OPERATION IN SMART GRIDS: N1-TS6 495 VIRTUAL INERTIA AND ANCILLARY SERVICES Simone Negri(1), Enrico Tironi(1), Davide Sala Danna(2) (1) Politecnico di Milano, (2) Engineering Department Acrotecna srl N1-TS6 549 A PHIL SYSTEM DESIGNED FOR TESTING THE DYNAMIC RESPONSE OF MICROGRID UNIT Ioan Serban, Catalin Petrea Ion Transilvania University of Brasov N1-TS6 697 LOW VOLTAGE MICROGRID ISLANDING THROUGH ADAPTIVE LOAD SHEDDING Fabio D'Agostino(1), Stefano Massucco(1), Federico Silvestro(1), Antonio Fidigatti(2), Fabio Monachesi(2), Enrico Ragaini(2) (1) University of Genova, (2) ABB Sace N1-TS6 153 **OPTIMIZATION ALGORITHM FOR MICROGRIDS DAY-AHEAD** SCHEDULING AND AGGREGATOR PROPOSAL Elvira Amicarelli(1), Tuan Quoc Tran(1), Seddik Bacha(2) (1) National Institute of Solar Energy (INES), (2) Electric System Laboratory (G2ELab) A SMART WARD WITH A FALL DETECTION SYSTEM Mu-Chun Su(1), Jia-Wei Liao(1), Pa-Chun Wang(2), Chen-Hsu Wang(2) (1) National Central University, Taiwan, (2) Cathay General Hospital, Taiwan N1-TS6 190 DEVELOPMENT OF DESIGN PRINCIPLES OF MICROGRID ON THE BASIS OF RENEWABLE ENERGY SOURCES FOR RURAL SETTLEMENTS IN CENTRAL EUROPEAN PART OF RUSSIA
Pavel Bezrukikh(1), Sergey M. Karabanov(2), Dmitriy V. Suvorov(2)
(1) G.M. Krzhizhanovsky Power Engineering Institute JSC, N1-TS6 078

(2) Ryazan State Radio Engineering University



POSTER SESSION 1 (N1-PS)Wednesday, June 7th, 2017 | 11:00 – 13:00 Venue: Room Bramante (POSTER AREA)

ENVIRONMENTAL PHENOMENA RELATED TO THE POWER SYSTEMS Session Chair: Michela Longo Politecnico di Milano

N1-PS 021	COMPUTATION OF ELECTRIC FIELDS AROUND PARALLEL HV AND EHV OVERHEAD TRANSMISSION LINES IN EGYPTIAN POWER NETWORK Mohamed Samy(1), Ahmed Emam(2) (1) Beni-Suef University, (2) Cairo University
N1-PS 039	HARMONIC SPECTRUM ESTIMATION AND ANALYSIS OF THE VOLTAGE AT THE PCC OF THE DISTRIBUTION NETWORK CONNECTED TO SOLAR PLANT BASED ON PARAMETRIC ALGORITHM (MUSIC) Javad Behkesh Noshahr, Belal Mohamadi Kalesar APED Co.
N1-PS 061	CURRENT HARMONIC LOSSES RESULTING FROM FIRST AND SECOND GENERATION LED LIGHTS REPLACEMENT WITH SODIUM VAPOR LIGHTS IN A (LV) FEEDER Javad Behkesh Noshahr(1), Masoud Hamedi Meykhosh(1), Mostafa Kermani(2) (1) APED Co., (2) Sapienza University of Rome
N1-PS 723	DETERMINATION OF SOIL SUITABILITY FOR AGRICULTURE FARMING USING MICROWAVE ANALYSIS Lakhvinder Solanki(1), Surinder Sing(2), Nandini Garg(2) (1) SLIET (Deemed University), (2) Sant Longowal Institute of Engg. & Tech. Longowal, District Sangrur, Punjab, Ind
N1-P5 230	THE INFLUENCE OF THE MONOETHANOLAMINE CONCENTRATION ON THE PERFORMANCES OF THE COAL-FIRED THERMAL POWER PLANT WITH CO2 CAPTURE AND STORAGE Mihaela Norisor, Victor E. Cenusa University Politehnica of Bucharest
N1-PS 606	ON THE STRUCTURAL IMPLEMENTATION OF MAGNETIC LEVITATION WINDMILL Mahajan Sagar Bhaskar(1), Sanjeevikumar Padmanaban(1), Pierluigi Siano(2), Viliam Fedak(3), Harshal Vaidya(4), Aishwarya Taur(4) (1) University of Johannesburg, (2) University of Salerno, (3) Technical University of Košice - Košice (4) Marathwada Institute of Technology Aurangabad - Maharashtra, India
N1-PS 186	CARBON FOOTPRINT ALLOCATION AMONG CONSUMERS AND TRANSMISSION LOSSES Mahdi Pourakbari Kasmaei(1), Jose Roberto Sanches Mantovani(1), Masoud Rashidinejad(2), Mohammad Reza Habibi(2), Javier Contreras(3) (1) UNESP, (2) SBUK, (3) University of Castilla - La Mancha
N1-PS 734	ELECTRIC FIELD ANALYSIS OF EXTRA HIGH VOLTAGE (EHV) UNDERGROUND CABLES USING FINITE ELEMENT METHOD Mantosh Kumar(1), Mahajan Sagar Bhaskar(1), Sanjeevikumar Padmanaban(1), Pierluigi Siano(2), Frede Blaabjerg(3), Zbigniew Leonowicz(4) (1) University of Johannesburg, (2) University of Salerno, (3) Aalborg University - Denmark, (4) Wrocław University of Science and Technology



SIMULATION APPROACH OF INDOOR THERMAL COMFORT IMPROVEMENT WITH USE OF PHASE CHANGE MATERIALS Stephane Guichard(1), Beddiar Karim(1), Miranville Frédéric(2), Boyer Harry(2) (1) Cesi LINEACT Laboratory, (2) Université la Réunion N1-PS 199

N1-PS 200 PASSIVE MITIGATION OF STRAY MAGNETIC FIELDS GENERATED BY UNDERGROUND POWER LINES Aldo Canova(1), Luca Giaccone(1), Paolo Ribaldone(2), Giuseppe Lavecchia(2) (1) Politecnico di Torino, (2) Terna s.p.a.

AN EXPERIMENTAL STUDY ON RELATIONSHIP BETWEEN LED LAMP CHARACTERISTICS AND NON IMAGE-FORMING
Maria La Gennusa, Roberto Macaluso, Mauro Mosca,
Gianluca Scaccianoce, Fabio Massaro, Laura Cirrincione N1-PS 231 University of Palermo

POSTER SESSION 1 (N1-PS)

Wednesday, June 7th, 2017 | 11:00 – 13:00 Venue: Room Bramante (POSTER AREA)

POWER SYSTEMS: DISTRIBUTION GRIDS COMPONENTS AND OPERATION - 1 Session Chair: Samuele Grillo

Politecnico di Milano

N1-PS 311	OPTIMAL DESIGN AND ANALYSIS OF ANTI-RESONANCE C-TYPE HIGH-PASS FILTERS Ahmed Lamlom(1), Ahmed Ibrahim(1), Murat E. Balc(2), Alp Karadeniz(2), Shady H. E. Abdel Aleem(3) (1) Cairo University, (2) Balikesir University - Turkey, (3) 15th of May Higher Institute of Engineering
N1-PS 243	RECONFIGURATION OF SMART DISTRIBUTION NETWORK CONSIDERING VARIATION OF LOAD AND LOCAL RENEWABLE GENERATION Raoof Hasanpour(1), Belal Mohamadi Kalesar(1), Javad Behkesh noshahr(1), Payam Farhadi(2) (1) APED Co., (2) Islamic Azad University
N1-PS 578	IMPACT OF INTEGRATING PHOTOVOLTAIC BASED DG ON DISTRIBUTION NETWORK HARMONICS Jaser Sa'ed(1), Mahran Quraan(1), Qais Samara(1), Salvatore Favuzza(2), Gaetano Zizzo(2) (1) Birzeit University, (2) DEIM - University of Palermo
N1-PS 610	COMBINED SOLAR CHARGING STATIONS AND ENERGY STORAGE UNITS ALLOCATION FOR PLUG-IN ELECTRIC VEHICLES BY CONSIDERING UNCERTAINTIES Babak Yousefi Khanghah, Amjad Anvari-Moghaddam, Josep M. Guerrero, Juan C. Vasquez Aalborg University
N1-PS 240	SOLVING COMPANY COOPERATION TASKS IN THE CONSTRUCTION OF POWER TRANSMISSION LINES Igors Moskins, Jevgenijs Kucajevs Riga Technical University
N1-PS 525	COORDINATED DISTRIBUTION NETWORK RECONFIGURATION AND DISTRIBUTED GENERATION ALLOCATION VIA GENETIC ALGORITHM Marco R. M. Cruz(1), S. F. Santos(1), Desta Z. Fitiwi(1), João P.S. Catalão(1)(2)(3) (1) C-MAST/UBI - Covilha, (2) INESC TEC and FEUP, (3) INESC-ID/IST-UL - Lisbon



POSTER SESSION 1 (N1-PS)

Wednesday, June 7th, 2017 | 11:00 – 13:00 Venue: Room Bramante (POSTER AREA)

RENEWABLE ENERGY **SOURCES IN POWER SYSTEMS - 1**

Session Chair: **Pierluigi Siano** University of Salerno

N1-PS 131

N1-PS 575

PERFORMANCE ENHANCEMENT OF NEURAL NETWORK TRAINING USING HYBRID DATA DIVISION TECHNIQUE FOR PHOTOVOLTAIC POWER PREDICTION Subrahmanyam Pulipaka(1), Rajneesh Kumar(2) (1) SOREVA, (2) Birla Institute of Technology and Science, Pilani STUDY OF LOW-VOLTAGE DISTRIBUTION SYSTEM WITH INTEGRATION OF PV-BATTERY ENERGY STORAGE FOR URBAN AREA IN DEVELOPING COUNTRY Vannak Vai(1), Egor Gladkikh(1), Marie-Cecile Alvarez-Herault(1), N1-PS 594 Bertrand Raison(1), Long Bun(2) (1) Grenoble Institute of Technology (Grenoble-INP), (2) Institute of Technology of Cambodia (ITC) N1-PS 035 DISCRETE WAVELET TRANSFORM BASED PROTECTION FOR A WIND FARM DOUBLE FED INDUCTION GENERATOR Ahmed M. M. Abdelemam(1), Ali M. El-Rifaie(2), Sabry M. Moussa(1) (1) Helwan University, (2) American University of the Middle East COMPARATIVE ANALYSIS OF COMMON MPPT TECHNIQUES FOR SOLAR PV SYSTEM WITH SOFT SWITCHED, INTERLEAVED ISOLATED CONVERTER T. Anuradha(1), P. Deiya Sundari (2), P. Sanjeevikumar (3), N1-PS 736 I. Anuradna (1), F. Deiva Sundari (2), F. Sanjeevikumar (3),
Pierluigi Siano (4), Zbigniew Leonowicz (5)

(1) Dept. of Electrical and Electronics Engg. AHTT, Anna University,
(2) Dept. of Electrical and Electronics Engg. KCG Technology, Anna University,
(3) Dept. of Electrical & Electronics Engg., University of Johannesburg - Johannesburg, South Africa,
(4) Dept. of Industrial Engg., University of Salerno,
(5) Faculty of Electrical Engg., Wrocław University of Technology POTENTIAL APPLICATIONS OF CARBONIC PRODUCTS GENERATED BY BIOMASS CONVERSION N1-PS 114 Cora Bulmău, Iustina Stănciulescu, Vlad Capotă Univ. Politeh. of Bucharest OPTIMAL BYPASS DIODE CONFIGURATION FOR PV ARRAYS UNDER SHADING INFLUENCE N1-PS 206 Minh Quan Duong(1), Gabriela Nicoleta Sava(2), Gabriela Ionescu(2), Horia Necula(2), Sonia Leva(3), Marco Mussetta(3) (1) The University of Da Nang-University of Science and Technology Danang - Vietnam, (2) University Politehnica of Bucharest, (3) Politecnico di Milano OPTIMAL SELF-HEALING SOLUTION FOR ELECTRIC DISTRIBUTION NETWORKS WITH HIGH DISTRIBUTED ENERGY RESOURCES PENETRATIONS

Zitong Song(1), Qin Zhou(1), Jianhua Zhang(2)
(1) Accenture, (2) CEE Power N1-PS 255 N1-PS 335 ANALYSIS OF LARGE SCALE PV PENETRATION IMPACT ON IEEE 39-BUS POWER SYSTEM Gauray Bhatt; Shaik Affijulla, Rakesh Rov NIT Meghalaya - Shillong (India)

VOLTAGE STABILITY IMPROVEMENT OF

Gaurav Bhatt, Shaik Affijulla, Sanjoy Debbarma

NIT Meghalaya - Shillong (India)

TRANSMISSION NETWORK INTEGRATED WITH PV PLANTS

N1-PS 289	AN INSTRUMENTAL CONTRIBUTION TO INCLUDE THE IMPACT OF PV ON CAPACITY ADEQUACY IN LONG-TERM ENERGY MODELS Fabrizio Fattori, Norma Anglani University of Pavia
N1-PS 208	EFFICIENCY ANALYSIS OF A HYBRID POWER SYSTEM FOR A CAMPUS IN ROMANIA Gabriela Nicoleta Sava(1), Gabriela Ionescu(1), Horia Necula(1), Mircea Scripcariu(1), Minh Quan Duong(2), Sonia Leva(3), Marco Mussetta(3) (1) University Politehnica of Bucharest, (2) The University of Da Nang-University of Science and Technology Danang, (3) Politecnico di Milano
N1-PS 668	AN ANALYTICAL APPROACH FOR TRANSMISSION EXPANSION PLANNING WITH GENERATION VARIATIONS Raminder Kaur, Tarlochan Kaur, Maneesh Kumar (1) PEC University of Technology, (2) Indian Institute of Technology Roorkee
N1-PS 023	COST-BENEFIT ANALYSIS OF CHP PLANTS TAKING INTO ACCOUNT AIR COOLING TECHNOLOGIES Polina Ivanova, Olegs Linkevics, Antans Sauhats Riga Technical University
N1-PS 024	MATHEMATICAL DESCRIBTION OF COMBINED CYCLE GAS TURBINE POWER PLANTS' TRANSIENT MODES Polina Ivanova, Olegs Linkevics, Antans Sauhats Riga Technical University
N1-PS 455	OPTIMAL DEMAND RESPONSE SCHEME FOR POWER SYSTEMS INCLUDING RENEWABLE ENERGY RESOURCES CONSIDERING SYSTEM RELIABILITY AND AIR POLLUTION Marta Ribeiro(1), Miadreza Shafie-khah(2), Gerardo Osório(2), Neda Hajibandeh(2), João P. S. Catalão(1)(2)(3) (1) INESC TEC and FEUP, (2) C-MAST/UBI - Covilha, (3) INESC-ID/IST-UL - Lisbon
N1-PS 456	A NEW APPROACH FOR MARKET POWER DETECTION IN RENEWABLE-BASED ELECTRICITY MARKETS Neda Hajibandeh (1), Miadreza Shafie-khah (1), Gerardo Osório (1), João P. S. Catalão (1) (2) (3) (1) C-MAST/UBI - Covilha, (2) INESC TEC and FEUP, (3) INESC-ID/IST-UL - Lisbon
N1-PS 457	OPTIMAL BIDDING STRATEGY OF RESPONSIVE DEMANDS IN A NEW DECENTRALIZED MARKET-BASED SCHEME Tiago S. Garcia(1), Miadreza Shafie-khah(2), Gerardo Osório(2), Neda Hajibandeh(2), João P. S. Cataláco(1)(2)(3) (1) INESC TEC and FEUP, (2) C-MAST/UBI - Covilha, (3) INESC-ID/ISTUL - Lisbon
N1-PS 449	DYNAMIC RECONFIGURATION OF DISTRIBUTION NETWORK SYSTEMS: A KEY FLEXIBILITY OPTION FOR RES INTEGRATION F.V. Dantas(1), Desta Z. Fitiwi(2), S. F. Santos(2), João P. S. Catalão(1)(2)(3) (1) INESC TEC and FEUP, (2) C-MAST/UBI - Covilha, (3) INESC-ID/IST-UL - Lisbon
N1-PS 554	ENERGY OPTIMIZATION STRATEGY WITH MODEL PREDICTIVE CONTROL AND DEMAND RESPONSE Radu Godina(1), Eduardo M. G. Rodrigues(1), Miadreza Shafie-khah(1), Edris Pouresmaeil(2), João P.S. Catalão(1)(2)(3) (1) C-MAST/UBI - Covilha, (2) INESC TEC and FEUP - Porto, (3) INESC-ID/IST-UL - Lisbon
N1-PS 459	MODELING PRICE- AND INCENTIVE-BASED DEMAND RESPONSE STRATEGIES IN THE RENEWABLE-BASED ENERGY MARKETS Neda Hajibandeh (1) (2), Mehdi Ehsan (1), Soodabeh Soleymani (1), Miadreza Shafie-khah (2), João PS. Catalão (2) (3) (4) (1) Islamic Azad University - Tehran, (2) C-MAST/UBI - Covilha, (3) INESC TEC and FEUP - Porto, (4) INESC-ID/IST-UL - Lisbon
N1-PS 072	A PREDICTIVE CURRENT CONTROL FOR SOLAR PV FED VSI IN DISTRIBUTION SYSTEM Priyanka Chaudhary; Mohammad Rizwan Delhi Technological University - Delhi, India



TECHNICAL SESSION 13 (A1-TS1)

HYBRID AND ELECTRIC **PROPULSION SYSTEMS: NEW DEVELOPMENTS** AND IMPACT ON THE ELECTRIC GRID Session Chair: Vincenzo Di Dio, Michela Longo University of Palermo, Politecnico di Milano

Wednesday, June 7th, 2017 | 15:00 – 17:00 Venue: Room Solari

A1-TS1 460

ELECTROCHEMICAL ENERGY STORAGE MITIGATING IMPACT OF ELECTRIC VEHICLE ON THE ELECTRIC GRID: TWO ITALIAN CASE STUDIES Marco Ferraro(1), Laura Andaloro(1), Francesco Sergi(1), Davide Aloisio(1), Giorgio Dispenza(1), Giuseppe Napoli(1), Salvatore Micari(1), Giovanni Brunaccini(1), Nico Randazzo(1), Samuele Di Novo(1), Vincenzo Antonucci(1), Marco Beccali(2), Maurizio Cellura(2), Valerio Lo Brano(2) (1) CNR ITAE, (2) University of Palermo

A1-TS1 463

ECONOMIC ANALYSIS ON THE USE OF WIRED AND WIRELESS RECHARGING SYSTEMS
Michela Longo(1), Dario Zaninelli(1), Giovanni Cipriani(2), Vincenzo Di Dio(2), Rosario Miceli(2) (1) Politecnico di Milan, (2) University of Palermo

A1-TS1 500

COORDINATED CONTROL FOR THE INTEGRATION OF A LARGE SCALE ELECTRIC VEHICLE PARK WITH PV INTO THE MV GRID Hassan H. Eldeeb, Abla O. Hariri, Osama A. Mohammed

Florida International University

A1-TS1 501

DEPLOYMENT OF ELECTRIC VEHICLES IN AN ADAPTIVE PROTECTION TECHNIQUE FOR RIDING THROUGH CYBER ATTACK THREATS IN MICROGRIDS Hany F. Habib, Abla Q. Hariri, Ahmed Elsayed, Osama A. Mohammed

Florida International University

A1-TS1 187

AN ELECTRIC RAILWAY POWER CONDITIONING SYSTEM BASED ON ASYMMETRICAL CONNECTION BALANCE TRANSFORMER

Bonan An(1), Yong Li(1), Yijia Cao(1), Ye Ca(1), Fang Liu(2) (1) Hunan University Changsha - China, (2) Central South University Changsha - China





TECHNICAL SESSION 14 (A1-TS2)

INTERIOR LIGHTING AND DAYLIGHTING

Session Chair: Francesco Leccese, Mojtaba Navvab University of Pisa, University of Michigan

Wednesday, June 7th, 2017 | 15:00 – 17:00 Venue: Room S. Carlo Borromeo

A1-TS2 494 LIGHTING OF RECREATION GROUNDS AS A SOURCE OF SKY GLOW - THE INFLUENCE OF LUMINAIRE TYPE ON THIS PHENOMENON Irena Fryc(1), Fabio Bisegna(2), Przemysław Tabaka(3)
(1) Białystok University of Technology, (2) Sapienza University of Rome, (3) Łódź University of Technology EXPLORING THE DAYLIGHT SIMULATION OF FILTER PANELS IN A PRE-TUNNEL STRUCTURE A1-TS2 417 Dionysia Drakou, Chiara Burattini, Alessandro Mangione, Fabio Bisegna Sapienza University of Rome

A1-TS2 387 THE PEDESTRIAN'S PERSPECTIVE: HOW DO ILLUMINANCE VARIATIONS AFFECT REASSURANCE? Benedetta Mattoni(1), Chiara Burattini(1), Fabio Bisegna(1), Steve Fotios(2) (1) Sapienza University of Rome, (2) University of Sheffield

ARTIFICIAL LIGHTING IN LOW ENERGY BUILDINGS AS UNIQUE BACKUP HEATING SYSTEM Brunello Favilla(1), Fabio Fantozzi(1), Giacomo Salvadori(1), Peter Widerin(2) A1-TS2 221

(1) University of Pisa, (2) Consulting Engineers for Technical Physics Lustenau, Austria

ON THE VERTICAL ILLUMINANCE IN INDOOR SPORT FACILITIES - INNOVATIVE MEASUREMENT PROCEDURE TO VERIFY INTERNATIONAL STANDARD REQUIREMENTS IN FENCING HALLS A1-TS2 336 Martina Di Pede(1), Francesco Leccese(1), Giacomo Salvadori(1), Enrico Di Ciolo(2), Simone Piccini(2) (1) University of Pisa, (2) "Antonio Di Ciolo" Pisa Fencing Club

A1-TS2 266 ANALYSIS OF PAINTED ARTWORKS' COLOR APPEARANCE

UNDER VARIOUS LIGHTING SETTINGS
Francesca Feltrin(1), Francesco Leccese(1), Peter Hanselaer(2), Kevin Smet(2)
(1) University of Pisa, (2) ESAT/ Light & Lighting Laboratory KU Leuven

MEASUREMENT BASED METHODOLOGY FOR THE EXTRACTION OF LIGHTING USER PREFERENCES IN WORKING ENVIRONMENTS A1-TS2 305 Varvara Katsanou; Aggelos Bouhouras; Dimitrios Labridis Aristotle University of Thessaloniki



TECHNICAL SESSION 15 (A1-TS3)

ENERGY STORAGES FOR POWER SYSTEMS APPLICATION - 3

Session Chair: Gaetano Zizzo, Giorgio Graditi University of Palermo, ENEA

Wednesday, June 7th, 2017 | 15:00 – 17:00

Venue: Room Agnesi

A1-TS3 404

A1-TS3 465 **OPTIMAL PARAMETER ESTIMATION OF BATTERY MODEL** FOR PIVOTAL AUTOMOTIVE BATTERY MANAGEMENT SYSTEM
Venu Sangwan(1), Avinash Sharma(1), Rajesh Kumar(1), Akshay Kumar Rathorey(2)
(1) Department of Electrical Engineering MNIT Jaipur, (2) Concordia University - Montreal, Canada A1-TS3 112 **INFLUENCE OF ENERGY STORAGE SYSTEM ON LOAD** FREQUENCY CONTROL OF A DEREGULATED POWER SYSTEM WITH CONSIDERATION OF PHYSICAL CONSTRAINTS Arlene Rosaline, Ushakumari Somarajan College of Engineering Trivandrum MODELLING OF SINGLE CELL SOLID OXIDE FUEL CELLS USING COMSOL MULTIPHYSICS A1-TS3 583 Sasanka N. Ranasinghe, Peter Middleton University of Agder MANAGEMENT OF A MICRO-GRID WITH INTEGRATED LOGIC IN LOW VOLTAGE SYSTEMS Stefania Aramini(1), Morris Brenna(1), Samuele Grillo(1), Enrico Ragaini(2) A1-TS3 550 (1) Politecnico di Milano, (2) ABB PV OUTPUT POWER SMOOTHING USING FLYWHEEL STORAGE SYSTEM A1-TS3 675 Abdalkarim Awad, Iyad Tumar, Mohammed Hussein, Wasel Ghanem, A. Sa'ed Birzeit University - Ramallah, Palestine MIXED-INTEGER ALGORITHM FOR OPTIMAL DISPATCH OF INTEGRATED PV-STORAGE SYSTEMS Francesco Adinolfi, Francesco Conte, Fabio D'Agostino, Stefano Massucco, A1-TS3 064 Matteo Saviozzi, Federico Silvestro DITEN, Università degli Studi di Genova A1-TS3 261 INNOVATIVE ALGORITHMS FOR THE MANAGEMENT OF COMBINED RES-BESS SYSTEMS Luigi Cancilla(1), Luigi Dusonchet(1), Salvatore Favuzza(1), Mariano G. Ippolito(1), Diego La Cascia(1), Fabio Massaro(1), Gaetano Zizzo(1), Salah Ben Mabrouk(2)
(1) University of Palermo, (2) CRTEn - Centre de Recherches et des Technologies de l'Energie

OPTIMAL SIZING OF A HYBRID MINI-GRID CONSIDERING
THE FUEL PROCUREMENT AND A ROLLING HORIZON SYSTEM OPERATION
Davide Fioriti(1), Romano Giglioli(1), Davide Poli(1), Giovanni Lutzemberger(1),
Andrea Vanni(2), Pasquelle SIZ

(1) University of Pisa, (2) Enel Green Power S.p.A.



TECHNICAL SESSION 16 (A1-TS4)

FOR NUCLEAR FUSION
Session Chair: Alessandro Lampasi
ENEA

Wednesday, June 7th, 2017 | 15:00 – 17:00 Venue: Room Caccia Dominioni

INSTALLATION, COMMISSIONING AND ACCEPTANCE TESTS OF THE SWITCHING NETWORK UNITS FOR THE CENTRAL SOLENOIDS OF JT-60SA Filippo Burini(1), Giuseppe Taddia(1), Sandro Tenconi(1), Makoto Matsukawa(2), A1-TS4 502 Katsuhiro Shimada(2), Luca Novello(3), Antti Jokinen(3), Alessandro Lampasi(4) (1) OCEM, (2) QST, (3) Fusion for Energy (F4E), (4) ENEA Frascati A1-TS4 518 **BUSSARD-THE HIGH CURRENT HIGH BANDWIDTH MULTIPLE-PHASES INVERTER FOR ASDEX UPGRADE** Markus Teschke, Nils Arden, Horst Eixenberger, Michael Rott, Michael Schandrul, Wolfgang Max Planck Institute for Plasma Physics A1-TS4 672 SURVEY OF ELECTRIC POWER SUPPLIES USED IN NUCLEAR FUSION EXPERIMENTS Alessandro Lampasi(1), Simone Minucci(2) (1) ENEA Frascati, (2) University of Naples Federico II A1-TS4 676 THE EUROPEAN DEMO FUSION REACTOR: DESIGN STATUS AND CHALLENGES FROM BALANCE OF PLANT AND ELECTRICAL POWER SUPPLY SYSTEM POINT OF VIEW Sergio Ciattaglia(1), Luciana Barucca(1), Gianfranco Federici(3), Elena Gaio(4), Alessandro Lampasi(5), Simone Minucci(6) (1) EUROfusion, (2) Ansaldo, (3) Fusion for Energy, (4) RFX, A1-TS4 666 (5) ENEA Frascati, (6) University of Naples Federico II POWER DISTRIBUTION FOR THE SPIDER AND MITICA EXPERIMENTS AT THE ITER NEUTRAL BEAM TEST FACILITY: A SYSTEM DESCRIPTION AND ANALY-SES A1-TS4 281 Marco Bigi, Gabriele Lazzaro, Alberto Maistrello, Antonio De Lorenzi Consorzio RFX OPTIMAL PV ELECTRICAL ENERGY STORAGE IN OFFICE BUILDING'S COMMUNAL SPACE LIGHTING

Kristina Berzina, Inga Zicmane, Aleksejs Sobolevskis

Riga Technical university



TECHNICAL SESSION 17 (A1-TS5)

MODELS FOR POWER SYSTEMS Session Chair: Emanuele Ogliari Politecnico di Milano

Wednesday, June 7th, 2017 | 15:00 – 17:00 Venue: Room Cavaliere

A1-TS5 010	A MODEL FOR CLOUD-BASED LARGE SCALE SMART GRID TECHNOLOGIES Shanu Aziz, Meera K. Joseph, Hendrik C. Ferreira University of Johannesburg
A1-TS5 011	UTILITY BASED FUNCTION FOR OPTIMIZING FEMTOCELLS Akindeji O. Akinlabi, Meera K. Joseph University of Johannesburg
A1-TS5 366	DISTRICT HEATING DEMAND SHORT-TERM FORECASTING Roman Petrichenko, Karlis Baltputnis, Antans Sauhats, Dmitry Sobolevsky Riga Technical university
A1-TS5 462	GAME THEORY AND COMPETITIVE ASPECTS IN ELECTRICITY MARKETS George Cristian Lazaroiu(1), Virgil Dumbrava(1), Mihnea Costoiu(1), Mariacristina Roscia(2) (1) University Politehnica of Bucharest, (2) Università di Bergamo
A1-T\$5 402	TEMPERATURE CONTROL OF AN INNOVATIVE ALUMINIUM-STEEL MOLDS INDUCTION PREHEAT PROCESS PLACED ON AUTOMATED LASER GUIDED VEHICLES Mariorosario Prist, Paolo Cicconi, Francesco Ferracuti, Anna Costanza Russo, Andrea Monteriù, Emanuele Pallotta, Sauro Longhi Università Politecnica delle Marche
A1-T\$5 498	SENSITIVITY ANALYSIS OF SAMPLING AND CLUSTERING TECHNIQUES IN EXPANSION PLANNING MODELS Martin Kristiansen(1), Magnus Korpås(1), Philipp Härtel(2) (1) Norwegian University of Science and Technolgy, (2) Energy Economy and Grid Operation Fraunhofer IWES
A1-T\$5 291	THE REGULATION POSSIBILITY OF ENERGY-INTENSIVE ENTERPRISES ACCORDING TO THE MARKET PRICE CHANGE Renata Varfolomejeva(1), Aleksandrs Gavrilovs(2), Inga Iljina(3) (1) Riga Technical University, (2) JSC Sadales tikls, (3) Ministry of Economics of the Republic of Latvia
A1-T\$5 185	A BRANCH AND BOUND ALGORITHM TO SOLVE NONCONVEX MINLP PROBLEMS VIA NOVEL DIVISION STRATEGY: AN ELECTRIC POWER SYSTEM CASE STUDY Marcos Jesus Delgado(1), Mahdi Pourakbari Kasmaei(2), Marcos Rider(3) (1) UFMT, (2) UNESP, (3) UNICAMP Campinas





TECHNICAL SESSION 18 (A1-TS6)

FOR SMART GRID Session Chair: Fabio Massaro, Salvatore Favuzza University of Palermo

Wednesday, June 7th, 2017 | 15:00 – 17:00 Venue: Room Marinetti

A1-TS6 036 CLOUD-BASED IEC 61850 COMMUNICATION SIMULATION USING A STANDARDIZED NETWORK MODEL

Daniele Pala, Gianluigi Proserpio, Enea Bionda, Federico Belloni

RSE S.p.A.

A1-TS6 032 APPLYING DEMAND SIDE MANAGEMENT

USING A GENERALISED THREE PHASE GRID SUPPORTIVE APPROACH

Niels Blaauwbroek, Phuong Nguyen, Han Slootweg

Eindhoven University of Technology

ENERGY THEFT AND DEFECTIVE METERS DETECTION IN AMI USING LINEAR REGRESSION A1-TS6 531

Sook Chin Yip(1), Chia-Kwang Tan(2), Wooi-Nee Tan(1), Ming-Tao Gan(1), Ab Halim Bin Abu Bakar(2) (1) Multimedia University Persiaran Multimedia,

(2) Um Power Energy Dédicated Advanced Centre (UMPEDAC), University of Malaya

A1-TS6 375 ENHANCING THE PERFORMANCE OF WINPLC SMART GRID COMMUNICATIONS BY MIMO NB-PLC

Sadaf Moaveninejad(1), Ahmad Saad(2), Maurizio Magarini(1)

(1) Politecnico di Milano, (2) Fraunhofer ESK

A1-TS6 146 **COMPARISON BETWEEN TRADITIONAL AND POST-PROCESSING**

PMU-BASED STATE ESTIMATION TO DEAL WITH BAD DATA

Hesam Khazraj, Filipe Faria da Silva, Claus Leth Bak

Aalborg universtity

A1-TS6 256

ENERGY MANAGEMENT OPTIMIZATION SCHEME FOR SMART HOME CONSIDERING DIFFERENT TYPES OF APPLIANCES

Leehter Yao, Zolboo Damiran, Wei Hong Lim National Taipei University of Technology

A1-TS6 274 **MULTI-OBJECTIVE CONTROL OF CENTRAL AIR CONDITIONING SYSTEM**

Leehter Yao, Kebba Jaiteh

National Taipei University of Technology



POSTER SESSION 2 (A1-PS)

Wednesday, June 7th, 2017 | 14:30 - 16:30 Venue: Room Bramante (POSTER AREA)

MATERIALS: NANOTECHNOLOGY FOR RENEWABLE ENERGY, NOVEL MATERIALS FOR ENERGY HARVESTING Session Chair: Giorgio Graditi ENEA

A1-PS 028	HIGH DENSITY QUANTUM DOT SOLAR CELLS
711 10 020	FOR CONCENTRATING PHOTOVOLTAICS (CPV)
	Vashitaka Okada Vasushi Shaji Chao Vu Hung Danial I

a, Yasushi Shoji, Chao Yu Hung, Daniel J. Farrell, Tomah Sogabe University of Tokyo

STUDY OF INTERACTION OF A PLASMA JET WITH THE SILICON A1-PS 107

MELT SURFACE UNDER THE CONDITIONS OF ITS HIGH TURBULENCE Sergey M. Karabanov(1), Dmitriy V. Suvorov(1), Dmitriy Yu. Tarabrin(1), E.V. Slivkin(1),

Vladimir A. Korotchenko(1), Alexander N. Vlasov(1), Oleg Belyakov(2)

(1) Ryazan State Radio Engineering University, (2) National Research Mordovia State University

A1-PS 155 CROSSLINKING UV-CURABLE POLYMERS WITH ORGANIC DYES FOR HIGHLY STABLE, MULTIFUNCTIONAL, LIGHT-HARVESTING LUMINESCENT SOLAR CONCENTRATORS

Diego Pintossi(1), Stefano Turri(1), Gianmarco Griffini(1), Alessia Colombo(2), Claudia Dragonetti(2) (1) Politecnico di Milano, (2) Università degli Studi di Milano

A1-PS 551 **GROWTH AND CHARACTERIZATION OF ZINC OXIDE/POLYANILINE** NANOCOMPOSITES ON GLASS SUBSTRATE FOR SOLAR CELL APPLICATION

Arnold C. Alguno(1), Katherine M. Emphasis(1), Majvell Kay O. Vequizo(1), Reynaldo M. Vequizo(1), Roberto M. Malaluan(1), Arnold A. Lubguban(1), Blessie A. Basilia(2)

(1) Mindanao State University - Iligan Institute of Technology,

(2) ITDI Department of Science and Technology

STUDY OF THERMOMAGNETIC ENERGY CONVERSION DRIVEN BY RENEWABLE ENERGY A1-PS 297

Alessia Viola(1), Sergio Gama(1), Lucas Diego Rodrigue Ferreira(1),

Carlos Vinicius X. Bessa(1), Marco Trapanese(2)

(1) University Federal of São Paulo, (2) University of Palermo

A1-PS 373 A STUDY OF OIL IMPREGNATED PRESSBOARD INSULATION

BASED ON ESTER FLUIDS FOR AN APPLICATION IN HVDC INSULATION SYSTEM

Patrick Rumpelt, Frank Jenau University of Dortmund

AN EXPERIMENTAL PROCEDURE FOR ESTABLISHING THE OPTIMAL SINTERING A1-PS 267 **TEMPERATURE OF NEW METAL OXIDE VARISTORS**

Bogdan Filip(1), Flaviu Mihai Frigura-Iliasa(1), Doru Vatau(1), Mihaela Frigura-Iliasa(1),

Petru Andea(1), Florin Ionel Balcu(2)

(1) Politehnica University of Timisoara,

(2) National Institute for Research and Development in Electrochemistry and Condensed Matter

THE EXPERIMENTAL ASSESSMENT OF A NEW MATERIAL FOR METAL OXIDE VARISTORS A1-PS 276

Nicolae Tafulea(1), Flaviu Mihai Frigura-Iliasa(1), Doru Vatau(1),

Mihaela Frigura-Iliasa(1), Petru Andea(1), Florin Ionel Balcu(1)

(1) Politehnica University of Timisoara,

(2) National Institute for Research and Development in Electrochemistry and Condensed Matter



PHASE BEHAVIORS AND FUEL PROPERTIES OF PALM OIL-BASED MICROEMULSION BIOFUELS USING SUGAR-BASED SURFACTANTS
Chodchanok Attaphong(1), Nutthaporn Sorrasuchart(2), Noulkamol Arpornpong(3), Ampira Charoensaeng(2), Sutha Khaodhiar(2), David Sabatini(4)
(1) King Mongkut's Institute of Technology Ladkrabang, (2) Chulalongkorn University Bangkok, (3) Naresuan University Phitsanulok, (4) The University of Oklahoma A1-PS 074

EFFECT OF ADDITIVES ON FUEL PROPERTIES AND EMISSION CHARACTERISTICS OF MICROMULSION BIOFUELS FROM PALM OIL A1-PS 111

Chodchanok Attaphong(1), Sasiwimon Wichadee(2), Piampoom Sarikprueck(1), Pichit Lumyong(1), Sutha Khaodhiar(2), David Sabatini(3), The University of Oklahoma
(1) King Mongkut's Institute of Technology Ladkrabang, (2) Chulalongkorn University Bangkok, (3) The University of Oklahoma

DETECTION AND DISTINCTION OF PARTIAL DISCHARGES IN AIR AT DC VOLTAGE BY USING A NON-CONVENTIONAL APPROACH IN THE HIGH-FREQUENCY RANGEDaniel Wienold, Ulrich Lühring, Frank Jenau A1-PS 137

TU Dortmund University

POSTER SESSION 2 (A1-PS)

Wednesday, June 7th, 2017 | 14:30 – 16:30 Venue: Room Bramante (POSTER AREA)

MEASUREMENTS

Session Chair: **Roberto Perini** Politecnico di Milano

A1-PS 320	THE EFFICIENCY	OF THE RES INSTALLATIONS
	IN TYPICAL HOL	USEHOLD - A CASE STUDY

Romuald Masnicki, Janusz Mindykowski

Gdynia Maritime University

INFLUENCE OF HUMIDITY ON PULSE SHAPE PARAMETERS OF POSITIVE CORONA DISCHARGES IN AIR AT DC VOLTAGE A1-PS 425

Ulrich Lühring, Daniel Wienold, Frank Jenau TU Dortmund University

UAV APPLICATION IN SEARCH AND RESCUE MISSIONS WITHIN FORESTS: ANALYSIS OF THE VOICE-BASED TARGET DETECTION APPROACH Azhar Muhammad Hosenbocus, Girish Bekaroo, Aditya Santokhee Middlesex University - Mauritius Branch Campus A1-PS 216

A1-PS 362 RADIATED EMISSIONS MEASUREMENTS

OF A PORTABLE POWER BANK IN A GTEM CELL

Beata Palczynska

Gdynia Maritime University

A1-PS 584

PROXIMAL SOIL SENSING OF TRACE ELEMENTS. INTERFERENCES ON FIELD MEASUREMENTS USING XRF

Ricardo Urrutia-Goyes(1), Nancy Ornelas-Soto(2), Ariadne Argyraki(3) (1) Universidad de las Fuerzas Armadas ESPE, (2) Tecnológico de Monterrey, (3) National and Kapodistrian University of Athens

MODIFIED NEWTON TYPE ALGORITHM-BASED FREQUENCY AND PHASE ESTIMATION TECHNIQUE IN HARMONICS-POLLUTED GRID A1-PS 709

Eduardo M. G. Rodrigues(1), Radu Godina(1), Edris Pouresmaeil(2), João P.S. Catalão(1) (2) (3) (1) C-MAST/UBI - Covilha, (2) INESC-ID/IST-UL - Lisbon, (3) INESC TEC and FEUP - Porto

WEDNESDAY AFTERNOON SESSIONS A1

A1-PS 678 HYBRID TIME TRIGGERED PROTOCOL FOR HOME WIRELESS COMMUNICATIONS Eduardo M. G. Rodrigues(1), Radu Godina(1), Edris Pouresmaeil(2), João P.S. Catalão(1) (2) (3) (1) C-MAST/UBI - Covilha, (2) INESC-ID/IST-UL - Lisbon, (3) INESC TEC and FEUP - Porto **CORRELATION ANALYSIS OF PARTIAL DISCHARGE MEASUREMENT RESULTS** A1-PS 027 Michał Kunicki, Łukasz Nagi Opole University of Technology A1-PS 088 **IONIZING RADIATION GENERATED BY THE ELECTRICAL DISCHARGES** FROM MEDIUM AND HIGH VOLTAGE IN THE AIR Łukasz Nagi, Michał Kunicki Opole University of Technology DETERMINATION OF THE EFFECT OF SHORT-TERM INTERRUPTIONS IN MAINS VOLTAGE ON THE RELIABILITY OF CONSUMER ELECTRONICS PRODUCTS

Murat Demir(1), Murat lltir(1), Ali Bekir Yıldız(2)
(1) Vestel Electronics HE, (2) Kocaeli University A1-PS 237 USING ARTIFICIAL NEURAL NETWORKS TO ENHANCE THE ACCURACY OF THE PHOTOVOLTAIC SIMULATION MODEL

Kamal Al Khuffash(1), Lisa Lamont(1), Youssef Lotfy Abdel-Magid(1)
(1) GASCO - Abu Dhabi, (2) Mott Macdonald - Glasgow, (3) The Petroleum Institute - Abu Dhabi A1-PS 108 EFFECT OF AGING ON C/LFP BATTERY IMPEDANCE. OPERATING CONDITIONS TO WHICH THE IMPEDANCE HAS MINIMAL VARIATIONS Yoana Fernández Pulido, Cecilio Blanco, Víctor García, David Anseán, A1-PS 126 Manuela González; Juan Carlos Viera University of Oviedo

POSTER SESSION 2 (A1-PS)

Wednesday, June 7th, 2017 | 14:30 – 16:30 Venue: Room Bramante (POSTER AREA)

POWER ELECTRONICS AND SMART GRIDS - 3 Session Chair: Hossein Hafezi Politecnico di Milano

A1-P5 655

SMART INVERTER ARC FAULT PROTECTION FOR PHOTOVOLTAIC POWER SYSTEMS
Benjamin Vidales Luna(1)(2), Serge Weber(1), Patrick Schweitzer(1),
Domingo Torres Lucio(2), Manuel Madrigal Martinez(2)
(1) Université de Lorraine, (2) Technological Institute of Morelia

A1-P5 110

TEST STAND FOR OBTAINING POWER TRANSISTORS
SWITCHING CHARACTERISTICS DURING AGING
Jan Knobloch(1), Jan Martis(1), Radoslav Cipin(1), Ziad Nouman(2)
(1) Brno University of Technology, (2) Tishreen University, Latakia

A1-P5 522

EXPERIMENTAL VALIDATION OF A THIRTEEN LEVEL
H-BRIDGE PHOTOVOLTAIC INVERTER CONFIGURATION
AbdelHamid Loukriz(1), Sandra Dudley(1), Terence Quinlan(2), Stuart Walker(2), Robert

(1) London South Bank University, (2) University of Essex

A1-P5 217	FOR A COMMON SOLUTION IN LY DISTRIBUTION NETWORK Hossein Hafezi, Roberto Faranda Politecnico Di Milano
A1-PS 657	START-UP, FUNCTIONALITIES AND PROTECTION ISSUES FOR CHB-BASED SOLID STATE TRANSFORMERS Jose Maria Cuartas Alonso(1), Fernando Briz del Blanco(2), Mario Lopez(2), Antonio de la Cruz(1) (1) INAEL - Toledo, (2) University of Oviedo
A1-PS 264	EVALUATING VOLTAGE FLUCTUATIONS AND FLICKER USING HALF-CYCLE RMS VALUES Daniel Geiger, Maria Arechavaleta, S. Mark Halpin Auburn University
A1-PS 287	DC-BUS VOLTAGE RIPPLE MINIMIZATION OF DISTRIBUTED DC-DC CONVERTERS BASED ON PHASE SHIFTING THEORY Tarek Youssef(1), Moataz Elsied(2), Amrane Oukaour(3), Hamid Gualous(3), Osama Mohammed(1) (1) Florida International University, (2) ESIEE-Amiens, (3) University of Caen Normadie
A1-PS 730	A HEXAGONAL HYSTERESIS SPACE VECTOR CURRENT CONTROLLER FOR SINGLE Z-SOURCE NETWORK MULTILEVEL WITH CAPACITOR BALANCING Bharatiraja Chokkalingam(1), Sanjeevikumar Padmanaban(2), Pierluigi Siano(3), Atif Iqbal(4), Zbigniew Leonowicz(5) (1) SRM University - Chennai, (2) University of Johannesburg, (3) University of Salerno, (4) Qatar University - Doha, Qatar, (5) Wrocław University of Technology - Wrocław, Poland
A1-PS 160	A SIMPLIFIED FIRST HARMONIC MODEL FOR THE SAVONA CAMPUS SMART POLYGENERATION MICROGRID Alessandro Labella, Daniele Mestriner, Renato Procopio, Federico Delfino University of Genoa
A1-PS 438	ANALYSIS OF THE PERFORMANCES OF A FULLY 4H-SIC INSULTATED DC/AC CONVERTERS Luigi Di Benedetto(1), Gian Domenico Licciardo(1), Alfredo Rubino(1), Emilio Lanzotti(2), Eduardo Piccirilli(2) (1) University of Salerno, (2) Ansaldo STS
A1-PS 600	AN LCL FILTER WITH AN ACTIVE COMPENSATION FOR A FAST CHARGER STATION Saeid Haghbin, Torbjörn Thiringer, Mikael Alatalo, Robert Karlsson Chalmers Uniersity of Technology
A1-PS 129	PROVISION OF FREQUENCY REGULATION BY A RESIDENTIAL MICROGRID INTEGRATING PVS, ENERGY STORAGE AND ELECTRIC VEHICLE Adamantios Bampoulas, Athanasios Karlis Democritus University of Thrace
A1-PS 178	A CONTROL ARCHITECTURE TO COORDINATE DG INVERTERS AND A SERIES-LC-FILTERED HYBRID ACTIVE FILTER FOR POWER QUALITY IMPROVEMENT IN MICRO-GRID Mingmin Zhang(1), Yong Li(1), Yanjian Peng(1), Wenguo Li(1), Fang Liu(2) (1) Hunan University - Changsha, (2) Central South University - Changsha
A1-PS 553	HOME HVAC ENERGY MANAGEMENT AND OPTIMIZATION WITH MODEL PREDICTIVE CONTROL Radu Godina(1), Eduardo M. G. Rodrigues(1), Edris Pouresmaeil(2), João P. S. Catalão(1)(2)(3) (1) C-MAST/UBI - Covilha, (2) INESC-ID/IST-UL - Lisbon, (3) INESC-TEC and FEUP - Porto
A1-PS 555	SIMULATION STUDY OF A PHOTOVOLTAIC CELL WITH INCREASING LEVELS OF MODEL COMPLEXITY Eduardo M. G. Rodrigues(1), Radu Godina(1), Edris Pouresmaeil(2), João P.S. Catalão(1)(2)(3) (1) C-MAST/UBI - Covilha, (2) INESC-ID/IST-UL - Lisbon, (3) INESC TEC and FEUP - Porto



TECHNICAL SESSION 19 (M2-TS1)

ENERGY MEASUREMENT

AND MONITORING - 1Session Chair: Fabien Imbault
Evolution Energie

Thursday June 8th, 2017 | 9:00 – 11:00 Venue: Room Solari

M2-TS1 115		RICAL ENERGY

MONITORING SYSTEM IN THAILAND HOSPITAL

Piampoom Sarikprueck(1), Pichit Lumyong(1), Chodchanok Attaphong(1), Bandit Ngamwatthanasilpa(2)

(1) King Mongkut's Institute of Technology Ladkrabang (Bangkok), (2) Innovation Technology Co., Ltd., Ngamwong-wan Rd.

M2-TS1 169 OPTIMIZED STATISTICAL TEST FOR EVENT DETECTION IN NON-INTRUSIVE LOAD MONITORING

Leen De Baets, Joeri Ruyssinck, Chris Develder, Tom Dhaene, Dirk Deschrijver Ghent University - imec

M2-TS1 212

TOWARDS A UNIFIED APPROACH FOR DISTRIBUTED MEASUREMENT SYSTEM TECHNOLOGIES Francesco Lamonaca(1), Domenico Luca Carnì(2), Domenico Grimaldi(2), Paolo Francesco Sciammarella(2), Luigi Martirano(3) (1) University of Sannio, (2) University of Calabria, (3) University of Rome Sapienza

ON THE CHOICE OF WAVELET BASED FEATURES IN POWER QUALITY DISTURBANCES CLASSIFICATION M2-TS1 285

Marija Markovska, Dimitar Taskovski

Faculty of Electrical Engineering and Information Technologies

BETTER ENERGY MANAGEMENT BY IMPLEMENTING AN ENERGY MEASUREMENT AND MONITORING PLAN M2-TS1 337

Marie Swiatek, Fabien Imbault Evolution Energie - Paris, France

M2-TS1 338 THE GREEN BLOCKCHAIN

Fabien Imbault(1), Rodolphe De Beaufort(2), Robert Plana(3), Marie Swiatek(4) (1) Evolution Energie, (2) GE Grid Solutions - Paris, (3) GE Digital - Paris

AIR QUALITY GRID TO ENABLE ENERGY SAVINGS M2-TS1 351

Saketaram Soussilane(1), Maria Restrepo(1), Lyndon Wheeler(1), Fabien Imbault(2)

(1) MEO, (2) Evolution Energie

METERING FOR ENERGY MANAGEMENT - A PRACTICAL APPROACH TO METERING M2-TS1 394 Kris Szajdzicki

ND Metering/ESTA

M2-TS1 089 DESIGN AND CALIBRATION OF AN INNOVATIVE ULTRASONIC.

ARDUINO BASED ANEMOMETER

Benedetto Alotta, Luca Pugi, Enrico Boni, Francesco Guidi, Marco Montagni, Tommaso Massai

University of Florence



TECHNICAL SESSION 20 (M2-TS2)

EMC - APPLICATIONS AND NUMERICAL MODELING: LIGHTNING, GROUNDING, EMI FILTER DESIGN

Session Chair: **Guido Ala** University of Palermo

Thursday June 8th, 2017 | 9:00 – 11:00 Venue: Room S. Carlo Borromeo

OVERALL PERFORMANCE OF A SURGE PROTECTION DEVICE SYSTEM IN PROTECTING EQUIPMENT AGAINST LIGHTNING SURGES
Tomasz Kisielewicz(1), Giovanbattista Lo Piparo(2), Carlo Mazzetti(2) (1) Warsaw University of Technology, (2) Sapienza University of Rome M2-TS2 136 **NUMERICAL MODELING IN EMC PROBLEMS** OF ELECTRIC POWER SUBSTATIONS WHEN LIGHTNING STRIKES Dmitrii Shishigin, Sergey Shishigin Vologda State University EXPERT SYSTEM FOR SELECTING OF REGIONS THAT REQUIRING PROTECTION IMPROVEMENT LIGHTNING AGAINST IN DISTRIBUTION FEEDERS M2-TS2 344 Marcel Araujo University of São Paulo M2-TS2 184 LIGHTNING-CURRENT DISTRIBUTION IN MV GRIDS INTERCONNECTED EARTHING SYSTEMS Guido Ala, Elisa Francomano, Graziella Giglia, Gaetano Zizzo University of Palermo AN EBG STRUCTURE TO PROTECT THE BODY TISSUES AGAINST RADIATION DUE TO THE LEAKAGE FROM THE MICROWAVE CAVITIES M2-TS2 056 Ali Bostani American University of the Middle East, Egaila, Kuwait M2-TS2 508 **ANALYTICAL MODELS OF EMI SOURCES FOR POWER ELECTRONIC CONVERTERS** A. Ales, M.A. Cheurfi Belhadj, A. Zaoui Ecole Militaire Polytechnique STUDY ON CHARACTERISTICS OF GROUNDING IMPEDANCE OF LARGE GROUNDING GRID
Zhizhong Li(1), Sen Wang(1), Feng Guo(1), Bo Zhang(2) M2-TS2 174

(1) Shanxi Electric Power Research Institute, (2) Tsinghua University

M2-TS2 390



TECHNICAL SESSION 21 (M2-TS3)

ENERGY SUSTAINABILITY IN SMALL ISLANDS

Session Chair: **Gianluigi Lo Basso** University of Rome Sapienza

Thursday June 8th, 2017 | 9:00 – 11:00 Venue: Room Agnesi

BUILDING SMART ENERGY SYSTEMS ON CROATIAN ISLANDS M2-TS3 015

BY INCREASING INTEGRATION OF RENEWABLE ENERGY SOURCES AND ELECTRIC VEHICLES

Antun Pfeifer, Fran Bošković, Viktorija Dobravec, Nikola Matak, Goran Krajačić, Neven Duić; Tomislav Pukšec University of Zagreb

IMPROVED WIND ENERGY PRODUCTION PREDICTION FOR REMOTE AEGEAN SEA ISLANDS John K. Kaldellis, Dimitrios Zafirakis, Emilia Kondili Piraeus University of Applied Sciences M2-TS3 526

AN ADVANCED MICROGRID SIMULATOR FOR STAND-ALONE AND MARKET-DEPENDENT ENERGY STRATEGIES
Dimitrios Zafirakis, Georgios Tzanes, John Kaldellis
Piraeus University of Applied Sciences M2-TS3 355

M2-TS3 168

THE USE OF LOCAL MATERIALS FOR LOW-ENERGY SERVICE BUILDINGS IN TOURISTIC ISLANDS. THE CASE STUDY OF FAVIGNAMA ISLAND

Federico Cinquepalmi(1), Giuseppe Piras(2), Elisa Pennacchia(2), Federica Barbanera(2) (1) Miur, (2) Sapienza University of Rome

M2-TS3 507

IMPEDANCE ESTIMATION OF FEA'S GRID IN FUI ISLANDS BY V-I MEASUREMENT BY USING THE SYNCHRONOUS REFERENCE FRAME-PLL Gianpaolo Vitale(1), Maurizio Cirrincione(2), F. M. Rabiul Islam(2), Paolo Nogara(3) (1) CNR-ISSIA, (2) School of Engineering and Physics, The University of the South Pacific, (3) University of Palermo

M2-TS3 385

LOCAL ENERGY PLANNING: POTENTIAL AND PERSPECTIVES OF TRANSPORT SECTOR IN SUSTAINABLE ENERGY ACTION PLANS (SEAPS) OF FOUR SMALL ITALIAN ISLANDS

Daniele Bruschi, Saverio Berghi Sapienza University of Rome





TECHNICAL SESSION 22 (M2-TS4)

SMART ELECTRONIC SYSTEMS FOR POWER CONSUMPTION MONITORING AND HOME ENERGY SAVINGS + SENSORS, ELECTRONIC DESIGN AND TESTING, ACTUATORS FOR BUILDING, INDUSTRIAL **AUTOMATION**

Session Chair: Paolo Visconti University of Salento

Thursday June 8th, 2017 | 9:00 – 11:00 Venue: Room Caccia Dominioni

SCORBOT-ER III ROBOTIC ARM DETECTION AND CONTROL WITH COLOR RECOGNITION WITH THE POSSIBILITY FOR USING IN SUN TRACKER APPLICATIONS M2-TS4 381

Roland Szabo, Aurel Gontean Politehnica University Timisoara

M2-TS4 580 A PRINTED CIRCUIT BOARD SUITABLE FOR CONTROLLING A 22.8KVA IGBT'S THREE-PHASE INVERTER

FOR DC NANOGRID IN A LABORATORY SETUP

Giuseppe Barone, Alessandro Burgio, Daniele Menniti, Michele Motta, Anna Pinnarelli, Nicola Sorrentino

University of Calabria

M2-TS4 057 **DESIGN AND FABRICATION A SMART MICROWAVE OVEN**

Ali Bostani, Amro Nour

American University of the Middle East - Egaila, Kuwait

ENERGY FLEXOMETER: AN EFFECTIVE IMPLEMENTATION OF INTERNET OF THINGS FOR MARKET-BASED DEMAND RESPONSE IN AN ENERGY MANAGEMENT SYSTEM Muhammad Babar(1)(2), Jakub Grela(1), Andrzej Ozadowicz(1), Phuong Nguyen(2), M2-TS4 048

Z. Hanzelka(1), I.G. Kamphuis(2)

AGH University of Science and Technology - Krakow, Poland,

(1) AGH University of Science and (2) Eindhoven University of Technology

REMOTE CONTROL OF NANOGRIDS: A COST-EFFECTIVE SOLUTION IN A LABORATORY SETUP M2-TS4 714

Giuseppe Barone, Alessandro Burgio, Daniele Menniti, Michele Motta, Anna Pinnarelli, Nicola Sorrentino

University of Calabria

USING ARDUINO DEVELOPMENT PLATFORM IN THE DIAGNOSIS OF AC ELECTRICAL MACHINES Fabrice Morganti(1), Mohamed Omar Younsi(1), Mauricio Cuevas Salvatierra(1), M2-TS4 415

Jean-Philippe Lecointe(1), Thierry Jacq(2) (1) Laboratoire Systémes Electrotechnique et Environnement (LSEE), (2) Electricité de France EDF Lab.



TECHNICAL SESSION 23 (M2-TS5)

ADVANCED TECHNOLOGIES

FOR CULTURAL HERITAGE Session Chair: Claudia Daffara, Giorgios Karagiannis University of Verona, Ormylia Foundation - Art Diagnosis Centre (GR)

Thursday June 8th, 2017 | 9:00 – 11:00 Venue: Room Cavaliere

ON THE POTENTIAL OF SIMULATION ENHANCED CONSERVATION OF CH ARTIFACTS Evdoxia Taka, Konstantinos Papachristou, Nikolaos Dimitriou, M2-TS5 443

Anastasios Drosou, Dimitrios Tzovaras Centre for Research & Technology Hellas - Thessaloniki, Greece

M2-TS5 453

A MOBILE COMPUTED TOMOGRAPHY SYSTEM FOR ON SITE CULTURAL HERITAGE ANALYSIS
Matteo Bettuzzi(1), Maria Pia Morigi(1), Rosa Brancaccio(1),
Eva Peccenini(2), Franco Casali(2)
(1) University of Bologna and INFN Bologna,
(2) Physics History Museum, Study and Research Center "Enrico Fermi", Centro Fermi Rome

M2-TS5 557

ALTERATION PROCESSES OF PIGMENTS EXPOSED TO ACETIC AND FORMIC ACID VAPORS

Marco Malagodi, Maurizio Licchelli, Silvia Bottigliero, Chiara Milanese, Pacifico Cofrancesco, Tommaso Rovetta

University of Pavia

IR THERMOGRAPHY AS A PRELIMINARY TOOL M2-TS5 658

IN ACOUSTICAL INSPECTION OF ANCIENT HISTORICAL STRUCTURES
Fabio Bisegna(1), Dario Ambrosin(2)
(1) Sapienza University of Rome, (2) University of L'Aquila

M2-TS5 683

MEASURING THE PROTECTIVE ROLE OF CLAY-BASED RENDERS IN ADOBE MASONRY USING THERMAL IMAGING AND ULTRASONIC VELOCITY IMAGING Georgios Karagiannis(1), Georgios Apostolidis(1), Maria Stefanidou(2) (1) Diagnostic Centre "Ormylia" Foundation - Chalcidice, Greece,

(2) Faculty of Engineering, AUTh Thessaloniki

M2-TS5 567 CONOSCOPIC LASER MICROPROFILOMETRY FOR 3D DIGITAL RECONSTRUCTION

OF SURFACES WITH SUB-MILLIMETER RESOLUTION

Nicola Gaburro, Giacomo Marchioro, Claudia Daffara

University of Verona





TECHNICAL SESSION 24 (M2-TS6)

POWER SYSTEMS: DISTRIBUTION GRIDS COMPONENTS AND OPERATION - 1 Session Chair: Stefano Lauria University of Rome Sapienza

Thursday June 8th, 2017 | 9:00 – 11:00 Venue: Room Marinetti

M2-136 44 I	METHOD BASED ON UNBALANCED CAPACITANCE INJECTION Yin Zili(1), Chen Yuxing(1), Huang Wenying(1), Zhang Wei(2), Li Jichang(2) (1) Fujian Electric Power Dispatch Control Center State Grid Fujian Electric Power Company, (2) Power Grid & Distribution Department Jicheng Electronics Co., Ltd
M2-TS6 451	OPTIMIZING DISCOS PLANNING FOR NETWORKS WITH DISTRIBUTED ENERGY RESOURCES George Cristian Lazaroiu, Virgil Dumbrava, Mihnea Costoiu, Catalina Alexandra Sima, Sonia Leva (1) University Politehnica of Bucharest, (2) Politecnico di Milano
M2-TS6 357	IMPACT OF SMART ELECTRIC THERMAL STORAGE ON DISTRIBUTION GRID Lubov Petrichenko, Zane Broka, Antans Sauhats Riga Technical University
M2-TS6 232	PEAK SHAVING AND POWER LOSSES MINIMIZATION BY COORDINATION OF PLUG-IN ELECTRIC VEHICLES CHARGING AND DISCHARGING IN SMART GRIDS Somayyeh Khatiri-Doost, Meysam Amirahmadi Islamic Azad University
M2-TS6 119	CONTROL STRATEGIES FOR RESIDENTIAL BATTERY ENERGY STORAGE SYSTEMS COUPLED WITH PV SYSTEMS Iromi Ranaweera, Ole-Morten Midtgård, Magnus Korpås, Hossein Farahmand Norwegian University of Science and Technolgy
M2-TS6 121	SCADA SINGLE LINE DIAGRAM ACCESS FOR ENTERPRISE USERS Sayed Abdel Aziz, Muhammad Rizwan Dubai Electricity & Water Autority
M2-TS6 122	BUS BAR TO BUS BAR DISPLAY. A SPECIAL PURPOSE SINGLE LINE DIAGRAM FOR ADVANCED DISTRIBUTION MANAGEMENT Sayed Abdel Aziz, Muhammad Rizwan Dubai Electricity & Water Autority
M2-TS6 210	DC OD AC DISTRIBUTIONS AN ECONOMIC EVALUATION

Roberto Faranda(1), Hossein Hafezi(1), Luigi Martines(2) (1) Politecnico Di Milano, (2) Onda Energia



TECHNICAL SESSION 25 (N2-TS1)

ENERGY MEASUREMENT

AND MONITORING - 2Session Chair: Fabien Imbault
Evolution Energie

Thursday June 8th, 2017 | 11:30 – 13:30 Venue: Room Solari

N2-TS1	396	MEASUR	ING &	MAIN	ITAINING	ENERGY	EFFICIENCY.
		SMADT A	DDDO	ACH T	O IMPLE	MENTING	ISO 50001

Kris Szajdzicki ND Metering/ESTA

N2-TS1 437

A COMPENSATION METHOD FOR AN OPTICAL DIRECT CURRENT SENSOR USING RIPPLE Florian Lessmann, Lars Vogelsang, Frank Jenau

TU Dortmund University

ENERGY MEASUREMENT FOR TELECOMMUNICATION OPERATORS. THE VODAFONE USE CASE N2-TS1 468

Eric Estrade(1), Fabien Imbault(1) (1) Vodafone, (2) Evolution Energie

N2-TS1 576

TAKAGI-SUGENO FUZZY SYSTEMS APPLIED TO VOLTAGE PREDICTION OF PHOTOVOLTAIC PLANTS Antonello Rosato, Rosa Altilio, Rodolfo Araneo, Massimo Panella University of Rome Sapienza

ENERGY CONSUMPTION IN AN ITALIAN OPERA HOUSE: ANALYSIS AND POSSIBLE REDUCTION N2-TS1 579

Massimo Mitolo (1), Michel Noussan (2), Enrico Pons (2), Davide Portè (2), Michele Tartaglia (2) (1) ESI - Foothill Ranch, CA, USA, (2) Politecnico di Torino

N2-TS1 620

STANDARDIZATION FRAMEWORK ON ENERGY EFFICIENCY AND MONITORING Franco Bua(1), Loredana Cristaldi(2), Cristina Lavecchia(3), Michele Liziero, Luigi Martirano(4), Luca Mongiovi(5), Michele Liziero(6) (1) ECD – Engineering Consulting and Design. (2) Politecnico di Milano, (3) Fondazione Osservatorio Metereologico Milano Duomo – Milan, (4) Sapienza University of Rome, (5) Energy and ICT consultant, (6) Energy Team SpA - Milan

N2-TS1 623

ASSESSMENT CRITERIA FOR A DISTRIBUTED ENERGY MEASUREMENT AND MONITORING SYSTEM Luigi Martirano(1), Luigi Borghi(2), Franco Bua(3), Loredana Cristaldi(4), Daniele Forni(5), Giulia Frattini(6), Giacomo Grigis(7) (1) Sapienza University of Rome, (2) Didelme Sistemi srl, (3) Engineering and Consulting - Pavia, Italy, (4) Politecnico di Milano, (5) Fire - Italy, (6) Energy Team SpA - Milan, (7) Schneider Electric S.p.A.

N2-TS1 653

ENERGY CONSUMPTION MODELLING AND FORECASTING IN AUTOMOTIVE PAINT SHOP Aldo Canova(1), Francesco Baglivo(2), Giuseppe Laudicina(1), Vincenzo Di Lago(2) (1) Politecnico di Torino, (2) FCA Manufacturing CRF WCM Research & innovation - Turin

N2-TS1 667

ARCHITECTURAL CRITERIA FOR A DISTRIBUTED ENERGY MONITORING SYSTEM Luca Guido Mongiovi(1), Franco Bua(2), Luigi Aurelio Borghi(3), Giacomo Grigis(4), Loredana Cristaldi(5), Enrico Tironi(5), Michele Liziero(6), Giulia Frattini(6), Cristina Lavecchia(7), Luigi Martirano(8) (1) Energy & ICT Consultant – Expert in Energy Management – Milan, (2) ECD – Engineering Consulting and Design, (3) Didelme Sistemi srl, (4) Schneider Electric S.p.A., (5) Politecnico di Milano, (6) Energy Team SpA, (7) Fondazione Osservatorio Meteorologico Milano Duomo, (8) Sapienza University of Rome



TECHNICAL SESSION 26 (N2-TS2)

ENERGY STORAGE FOR SMART GRIDS

Session Chair: Davide Poli University of Pisa

Thursday June 8th, 2017 | 11:30 – 13:30 Venue: Room S. Carlo Borromeo

N2-TS2 352 **OPTIMAL OPERATION OF STORAGE SYSTEMS INTEGRATED WITH** MV PHOTOVOLTAIC PLANTS, USING JMODELICA Stefano Barsali, Romano Giglioli, Giovanni Lutzemberger, Davide Poli, Giacomo Valenti

University of Pisa

N2-TS2 353 MODELLING HEAT DEMAND IN BUILDINGS WITH AN EXPERIMENTAL APPROACH

Jevgenijs Kozadajevs, Zane Broka, Antans Sauhats Riga Technical University

N2-TS2 581 SIMULATION OF ENHANCED FREQUENCY RESPONSE BY BATTERY STORAGE

SYSTEMS: THE UK VERSUS THE CONTINENTAL EUROPE SYSTEM

Silvia Canevese, Diego Cirio, Antonio Gatti, Enrica Micolano, Luigi Pellegrino, Marco Rapizza RSE S.p.A.

N2-TS2 245 FOSTERING INNOVATION COOPERATIVE ENERGY STORAGE SYSTEMS: THE STORAGE4GRID PROJECT

Riccardo Tomasi (1), Jinyong Fu (1), Maurizio Fantino (1), Maurizio A. Spirito (1), Mihai Sanduleac (2), Veronika Krauß (3), João F. Martins (4), Massimo Minighini (5), Rasmus Rode Mosbækk (6) (1) Istituto Superiore Mario Boella (ISMB), (2) Politehnica University of Bucharest, (3) Fraunhofer Institute for Applied Information Technology (FIT), (4) Uninova - Caparica, Portugal, (5) Alperia Group - Bolzano, Italy, (6) Lithium Balance A/S - Smørum, Denmark

N2-TS2 398

MODIFIED CONTROL FOR THE OPTIMAL MANAGEMENT DROOP OF THE BATTERY SYSTEMS IN ISOLATED MICROGRIDS Luisa Frosio(1), Gabriele Marchegiani(1), Alberto Bolzoni(2), Roberto Perini(2) (1) EPS Elvi Energy - Electro Power System Group Milano, (2) Politecnico di Milano

N2-TS2 414 FEASIBILITY ANALYSIS OF STORAGE SYSTEMS

IN WIND PLANTS - AN ITALIAN APPLICATION

Enrico Casalini, Sonia Leva Politecnico di Milano

N2-TS2 562

IOT- MANAGEMENT OF DISTRIBUTED ENERGY ORIENTED STORAGE FOR THE PRIMARY FREQUENCY CONTROL Davide Falabretti(1), Matteo Moncecchi(1), Claudio Brivio(1), Maurizio Delfanti(1), Marco Merlo(1), Vincenzo Musolino(2) (1) Politecnico di Milano, (2) CSEM PV-Center

OPTIMAL SINGLE TUNED DAMPED FILTER FOR MITIGATING HARMONICS USING N2-TS2 226

MIDACO

Nor H. B. Abdul Kahar, Ahmed F. Zobaa

Brunel University - London



TECHNICAL SESSION 27 (N2-TS3)

LIGHTNING, ENVIRONMENT AND ENERGY

Session Chair: Renato Procopio University of Genova

Thursday June 8th, 2017 | 11:30 – 13:30 Venue: Room Agnesi

N2-TS3 317	THE INFLUENCE OF PYROLYSIS TEMPERATURE ON THE CHEMICAL COMPOSITION
	AND THE ENERGY PROPERTIES OF CHAR FROM TETRAPAK

Jana Růžičková, Marek Kucbel, Petr Pavlik, Helena Raclavská, Hana Škrobánková, Konstantin Raclavský, Barbora Švédová, Veronika Sassmanová, Dagmar Juchelková VŠB – Technical University of Ostrava

N2-TS3 476 INFLUENCE OF THE SOIL RESISTIVITY UNCERTAINTY ON BFR COMPUTATION

Maria Teresa Correia de Barros(1), Margarida Simões Alves(1) (1) IST-Universidade de Lisboa, (2) Labelec-Energias de Portugal

N2-TS3 503

AN IMPROVEMENT OF MODIFIED TRANSMISSION LINE MODELS OF LIGHTNING STROKES

Vesna Javor University of Niš

CALCULATION OF LIGHTNING-INDUCED OVERVOLTAGES ON URBAN OVERHEAD N2-TS3 558

LINES ABOVE A LOSSY GROUND PLANE - APPRAISAL OF THE SHIELDING EFFECT OF NEARBY BUILDINGS

Fabio Tossani(1), Alberto Borghetti(1), Fabio Napolitano(1), Diego Rios Penaloza(1), Alexandre Piantini(2), Carlo Alberto Nucci(1) (1) University of Bologna, (2) University of Sao Paulo

N2-TS3 595 MODELLING OF MEASURED LIGHTNING DISCHARGE CURRENTS TO TALL TOWERS

Vesna Javor(1), Karl Lundengård(2), Milica Rančić(2), Dario Javor(1), Sergei Silvestrov(2) (1) University of Niš, (2) Mälardalen University, UKK Västerås

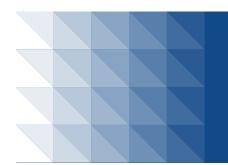
EVALUATION OF LIGHTNING-INDUCED OVERVOLTAGES ON A DISTRIBUTION SYSTEM: VALIDATION OF A DEDICATED CODE USING EXPERIMENTAL RESULTS ON A REDUCED-SCALE MODEL N2-TS3 371

Massimo Brignone(1), Erica Ginnante(1), Daniele Mestriner(1), Ilaria Ruggi(1), Renato Procopio(1), Alexandre Piantini(2), Farhad Rachidi(3)
(1) University of Genoa, (2) University of Sao Paulo,
(3) Swiss Federal Institute of Technology, EPFL-STI-LRE Station 11

DESIGN APPROACHES FOR EHV OHL "COMPACT" TOWER GROUNDING SYSTEMS N2-TS3 536

Fabio Massimo Gatta(1), Alberto Geri(1), Marco Maccioni(1), Stefano Lauria(1), Francesco Palone(2), Giuseppe Pelliccione(2) (1) Sapienza University of Rome, (2) TERNA Rete Italia S.p.A.





TECHNICAL SESSION 28 (N2-TS4)

ENVIRONMENTAL MONITORING USING SATELLITES

Session Chair: Antonio Paolozzi, Erricos C. Pavlis University of Rome Sapienza, Joint Center for Earth Systems Technology – UMBC

Thursday June 8th, 2017 | 11:30 – 13:30 Venue: Room Caccia Dominioni

SPACE DEBRIS SCIENCE AT THE SATELLITE LASER RANGING STATION GRAZ Michael Steindorfer, Georg Kirchner, Franz Koidl, Peiyuan Wang, Daniel Kucharski N2-TS4 377 Space Research Institute, Graz

EL NINO EFFECTS ON EARTH ROTATION PARAMETERS FROM LAGEOS AND LARES ORBITAL ANALYSIS N2-TS4 630

Erricos C. Pavlis (1), Giampiero Sindoni (2) (3), Antonio Paolozzi (2), Ignazio Ciufolini (3) (4), Claudio Paris (2) (3), Magdalena Kuzmicz-Cieslak (1), Alessandro Gabrielli (5) (1) [CET/UMBC - University of Maryland, (2) SIA - Sapienza University of Rome, (3) Museo Storico della Fisica e Centro Studie Ricerche Enrico Fermi, (4) Università del Salento, (5) ASI, Agenzia Spaziale Italiana

N2-TS4 510

CONTRIBUTION OF RADAR METEOR SCATTER TECHNOLOGY TO NEO AND OZONE LAYER MONITORING Claudio Paris(1)(2), Vincenzo Gagliarducci(3), Antonio Gerardi(3) (1) SIA - Sapienza University of Rome, (2) Museo Storico della Fisica e Centro Studi e Ricerche Enrico Fermi, (3) Osservatorio Astronomico di Gorga, Roma

N2-TS4 624 FIRST OBSERVATIONAL CAMPAIGN OF SPACE DEBRIS FROM OAG OBSERVATORY Giampiero Sindoni(1)(2), Vincenzo Gagliarducci(3), Tommaso Di Sabato(4) (1) SIA - Sapienza University of Rome, (2) Museo Storico della Fisica e Centro Studi e Ricerche

Enrico Fermi, (3) Osservatorio Astronomico di Gorga, Roma, (4) Università del Salento

N2-TS4 628 DATA EFFICIENCY FOR THE SATELLITE LARES

Antonio Paolozzi(1), Claudio Paris(1), Giampiero Sindoni(1), David Arnold(2), Erricos C. Pavlis(3), Ignazio Ciufolini(4); Ludwig Grunwaldt(5); Reinhart Neubert(5) (1) SIA - Sapienza University of Rome, (2) Smithsonian Astrophysical Observatory (retired) Cambridge, (3) JCET - University of Maryland, (4) Università del Salento, (5) GFZ German Research Centre for Geosciences Potsdam, Germany



TECHNICAL SESSION 29 (N2-TS5)

SMART GRIDS - SMART CITIES -TRANSFORMING LIFE -TRANSFORMING THE WORLD - 1 Session Chair: Prabhakar Karthikeyan, - Fabio Bisegna VIT University, Sapienza University of Rome

Thursday June 8th, 2017 | 11:30 – 13:30 Venue: Room Cavaliere

COOL FACADE OPTIMIZATION: A NEW PARAMETRIC METHODOLOGY FOR THE URBAN HEAT ISLAND PHENOMENON (UHI). N2-TS5 426

Roberta Cocci Grifoni, Simone Tascini, Ernesto Cesario, Graziano Enzo Marchesani

University of Camerino

INSPIRED BY THE ATMOSPHERE. A PROCEDURAL PROTOCOL THAT DEFINES A META-PROJECT BASED ON ATMOSPHERIC FORCES: SOLAR RADIATION AND WIND FIELD N2-TS5 428

Roberta Cocci Grifoni, Mariano Pierantozzi, Graziano Enzo Marchesani, Marco Rosa University of Camerino

N2-TS5 473 **ANALYSIS OF NOISE IN IN-HOME CHANNELS FOR** MARROWBAND POWER LINE COMMUNICATIONS
Mauro Tucci(1), Marco Raugi(1), Li Bai(1), Sami Barmada(1), Tao Zheng(2)
(1) University of Pisa, (2) Xi'an Jiaotong University

POWER QUALITY ENHANCEMENT OF UPQC CONNECTED WECS USING FFA WITH RNN
Senthil Vadivu U, B K Keshavan
Pes Institute Of Technology N2-TS5 257





TECHNICAL SESSION 30 (N2-TS6)

POWER SYSTEMS: DISTRIBUTION GRIDS COMPONENTS AND OPERATION - 2 Session Chair: Roberto Faranda Politecnico di Milano

Thursday June 8th, 2017 | 11:30 – 13:30 Venue: Room Marinetti

INTEGRATING TIDAL ENERGY TO SOLVE DYNAMIC ECONOMIC LOAD DISPATCH PROBLEM USING IWO N2-TS6 025 Michael Nagib(1), Adel A. Naiem(2), Mahmoud M. Othman(2), Y. G. Hegazy(1) (1) German University in Cairo, (2) Ain Shams University N2-TS6 124 **BEST PRACTICES FOR UTILIZING SCADA AND ITS APPLICATIONS** Syed Abrar Ali(1), Muhammad Rizwan(2) (1) Al Othman Consultancy Ltd, (2) Dubai Electricity and Water Authority CAPACITOR BANK STEP STATE OPTIMIZATION UNDER LOAD ALTERATION IN SMART DISTRIBUTION NETWORKS N2-TS6 123 Farhad Ahbab(1), Belal Mohamadi Kalesar(1), Javad Behkesh Noshahr(1), Payam Farhadi(2) (1) Ardabil Province Electricity Distribution Company APED Co., (2) Islamic Azad University Parsabad Moghan Branch A NOVEL IMPROVED PARTICLE SWARM OPTIMIZATION FRAME WORK N2-TS6 147 FOR RECONFIGURATION OF RADIAL DISTRIBUTION SYSTEM Dusharla Venkata Sunil, Narri Yadaiah Jawaharlal Nehru Technological University Hyderabad A CASE STUDY ON THE INTEROPERABILITY OF THE DIRECT TRANSFER TRIP (DTT) TECHNIQUE WITH CARRIER SIGNAL PROTECTION SCHEMES (PTT AND DEF) AND SCADA SYSTEM BETWEEN TWO UTILITIES IN THAILAND N2-TS6 241 Chotiwanaporn Naradon, Chompoo-inwai Chai, Monthon Leelajindakrairerk, Chompoo-inwai Chow King Mongkut's Institute of Technology Ladkrabang N2-TS6 391 EXTRAPOLATION OF VARISTOR WATT LOSS ENERGY **USING ARRHENIUS LIFE MODEL** Pitshou Bokoro University of Johannesburg N2-TS6 540 **IDENTIFICATION OF ESTONIAN WEAK LOW VOLTAGE GRID TOPOLOGIES** Kaija Vill, Argo Rosin Tallinn University of Technology **REDUCTION OF CAPACITOR AGING BY THE USE** N2-TS6 711 OF TRANSIENT-FREE DIODE-BASED SYNCHRONOUS SWITCH Enrico Ragaini(1), Francesco Viaro(1), Gian Carlo Montanari(2), Claudio Mastromauro(3) (1) ABB, (2) Università di Bologna, (3) Politecnico di Milano VOLTAGE CONTROL IN LOW VOLTAGE GRIDS: A COMPARISON BETWEEN THE USE OF DISTRIBUTED PHOTOVOLTAIC CONVERTERS OR CENTRALIZED DEVICES Alessandro Ciocia(1), Gianfranco Chicco(1), Paolo Di Leo(1), Marco Gai(1), Andrea Mazza(1), Filippo Spertino(1), Nouredine Hadj-Said(2) (1) Politecnico di Torino, (2) G2Elab Grenoble INP N2-TS6 621



POSTER SESSION 3 (N2-PS) Thursday, June 8th, 2017 | 11:00 – 13:00 Venue: Room Bramante (POSTER AREA)

POLIMI-XJTU JOINT RESEARCH ACIVITY IN EE/POWER SYSTEMS Session Chair: Sergio Amedeo Pignari Politecnico di Milano

N2-P5 608	AN IMPROVED SA-PSO GLOBAL MAXIMUM POWER POINT TRACKING METHOD OF PHOTOVOLTAIC SYSTEM UNDER PARTIAL SHADING CONDITIONS Tong Guan, Fang Zhuo Xi'an Jiaotong University
N2-PS 637	A SECOND ORDER CONE BASED RELAXATION AND DECOMPOSITION ALGORITHM FOR MULTI-PERIOD REACTIVE POWER OPTIMIZATION CONSIDERING UNCERTAIN PV INTEGRATION IN ACTIVE DISTRIBUTION NETWORKS Shiyu Liu(1), Tao Ding(1), Zhaohong Bie(1), Yang Hong(1), Alberto Berizzi(2) (1) Xi'an Jiaotong University, (2) Politecnico di Milano
N2-PS 718	MONTE CARLO SIMULATION AND HARDWARE-IN-THE-LOOP TESTING FOR EVALUATION OF RELIABILITY OF INTEGRATED ENERGY SYSTEMS Enrico Ragaini(1), Mattia Bettinelli(1), Yuxiong Huang(2), Gengfeng Li(2) (1) Politecnico di Milano, (2) Xi'An Jiaotong University
N2-P5 721	HARDWARE-IN-THE-LOOP SIMULATION FOR TESTING LOW VOLTAGE CIRCUIT BREAKERS SELECTIVITY Enrico Ragaini(1), Jinjun Liu(2), Luca Bertoletti(1) (1) Politecnico di Milano, (2) Xi'An Jiaotong University
N2-PS 591	A NEW TWO-STEP MATCHING METHOD AND LOSS-ALLOCATION METHOD BASED ON THE PROFIT PROPORTIONAL SHARING PRINCIPLE APPLIED IN THE POWER TRANS-REGIONAL TRANS-ACTION Tianxing Qi(1), Xiuli Wang(1), Haihua Cheng(2), Wei Zhang(1) (1) Xi'an Jiaotong University, (2) China Electric Power Research Institute - Nanjing
N2-PS 592	A NEW STRATEGY OF TRANS-REGIONAL ELECTRICITY CENTRALIZED TRADE AND RENEWABLE GENERATION RIGHT TRANSACTION BASED ON NETWORK FLOW PATH OPTIMIZATION MODEL Tianxing Qi, Bike Xue, Wei Zhang, Xiuli Wang Xi'an Jiaotong University
N2-PS 614 N2-PS 641	IMPACTS OF GAS NETWORK EMERGENCIES ON POWER SYSTEM THROUGH GAS TURBINE Feng Ma, Zaibin Jiao, Zongbo Li, Yifei Wang Xi'an Jiaotong University
NZ-P3 04 I	RESEARCH ON INDOOR MULTIPOINT DATA ACQUISITION WITH A MICRO UAV Yonghong Yin, Yu Chen, Lu Wan, Yuqi Zhang, Yuxin Yang Xi'an Jiaotong University



THE INTEGRATED RELIABILITY EVALUATION OF DISTRIBUTION SYSTEM CONSIDERING THE SYSTEM VOLTAGES ADJUSTMENT N2-PS 652 Yang Hong(1), Zhaohong Bie(1), Alberto Berizzi(2), Gengfeng Li(1), Shiyu Liu(1) (1) Xi'an Jiaotong University, (2) Politecnico di Milano

N2-PS 612 A REVIEW ON CONTROL STRATEGIES OF AC/DC MICRO GRID Zhenghong Chen, Kangda Wang, Zhengyuan Li, Tao Zheng Xi'an Jiaotong University

N2-PS 420

CLOCKS SYNCHRONIZATION MECHANISM FOR RADIO INTERFEROMETER NETWORK El Houssain Ait Mansour(1), Karl-Ludwig Klein(2), Bruno Da Silva(1), Stéphane Bosse(1) (1) Station de Radioastronomie de Nançay, (2) Observatoire de Meudon

POSTER SESSION 3 (N2-PS)

Thursday, June 8th, 2017 | 11:00 – 13:00 Venue: Room Bramante (POSTER AREA)

PhD STUDENT

Session Chair: Fabio Bisegna Sapienza University of Rome

N2-PS 724 IRAN ELECTRICITY MARKET POTENTIAL AND OBSTACLE Arsalan Bayatmakoo Sapienza University of Rome, Iran Electrical Syndicate A TWO-PHASE THREE-WIRE QUASI-Z-SOURCE BASED RAILWAY POWER QUALITY COMPENSATOR FOR AC RAIL NETWORKS Hamed Jafari Kaleybar (1), Hossein Madadi Kojabadi (1), N2-PS 475 Federica Foiadelli(2), Morris Brenna(3), Seyed Saeed Fazel(3) (1) Sahand University of Technology, (2) Polytechnic University of Milan, (3) Iran University of Science and Technology EFFICIENCY OPTIMIZATION OF SMALL HYDRO POWER PLANT IN LOW POWER OPERATION N2-PS 193 Ondrej Rubes, Dalibor Cervinka Brno University of Technology N2-PS 284 APPLICATION OF ACCELERATION METHOD FOR EVALUATION OF INDUCTION MOTOR TORQUE-SPEED CHARACTERISTICS Marek Toman, Radoslav Cipin, Martin Mach, Pavel Vorel Brno University of Technology

FULL BRIDGE THREE PORT CONVERTER POWER FLOW CONTROL USING FUZZY LOGIC CONTROLLER N2-PS 712

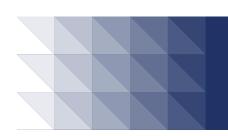
Sarab Jwaid AL-Chlaihawi(1), Aurelian Craciunescu(1), Mohamed Louzazni(2), Ammar Ghalib Al-Gizi(1) (1) University Politehnica of Bucharest,

(2) Laboratory of Innovative Technologies, National School of Applied Sciences

PHOTOVOLTAIC SYSTEM EQUIPPED WITH A SOLAR CONCENTRATOR AND TWO-AXIS TRACKING SYSTEM N2-PS 239 Kamil Plachta Wrocław University of Science

N2-PS 505	ECONOMIC ANALYSIS OF NET METERING REGULATIONS FOR RESIDENTIAL CONSUMERS IN PAKISTAN Waqas Ur Rehman(1), Intisar Ali Sajjad(1), Dr. Tahir Nadeem Malik(1), Luigi Martirano(1), Matteo Manganelli(1) (1) University of Engineering & Technology, Taxila, Pakistan, (2) Sapienza University of Rome
N2-PS 037	INFLUENCE OF A D PUNITIZATION IN THE FAST, AND ACCUPAITE GRID SIGNAL Dariusz Kania, Józef Borkowski Wrocław University of Technology
N2-PS 486	A QUANTITATIVE EVALUATION OF THE MUTUAL INFLUENCES AMONG SMART STRATEGIES APPLIED AT DISTRICT LEVEL Benedetta Mattoni, Fabio Nardecchia, Alessio Benelli, Stefano Buscaglione, Francesca Pagliaro, Chiara Burattini Sapienza University of Rome
N2-PS 563	FLEXIBILITY ASSESSMENT INDICATOR FOR AGGREGATE RESIDENTIAL DEMAND Muhammad Waseem(1), Intisar Ali Sajjad(1), Luigi Martirano(2), Matteo Manganelli(2) (1) University of Engineering & Technology, Taxila, Pakistan, (2) Sapienza University of Rome
N2-PS 191	HEALTH AND WELL-BEING IN INDOOR WORK ENVIRONMENTS. A REVIEW OF LITERATURE Michele Rocca University of Pisa
N2-PS 490	STUDY OF ENERGY PERFORMANCE AND ANALYSIS OF THE PROPERTY OF THE COMMENT OF THE PROPERTY OF THE
N2-PS 661	OPTIMIZATION OF COMPACT OVERHEAD LINES OF 138/230KV: OPTIMAL SELECTION AND ARRANGEMENT OF CABLES AND DEFINITION OF THE BEST TRANSMISSION LINE TOWER TOPOLOGY Marcos Felipe Ribeiro (1), João Vasconcelos (1), Douglas Teixeira (1)(2) (1) Federal University of Minas Gerais, (2) IF MMG - Federal Institute of the North of Minas Gerais
N2-PS 218	GEOLOCATION FOR LPT - USE OF GEOLOCATION TECHNOLOGIES FOR PERFORMANCE IMPROVEMENT AND TEST OF LOCAL PUBLIC TRANSPORT Fabio Pompei CESC, GL Group
N2-PS 270	A REVIEW OF THERMAL CONDUCTIVITY OF EPOXY COMPOSITES FILED WITH ALN OR BN Josef Samek(1), Cestmir Ondrusek(1), Jiri Kurfuerst (1) Brno University of Technology, (2) Baumüller Brno, s.r.o.
N2-PS 141	MODELLING BOND GRAPH OF A THERMAL SOLAR WATER HEATER FOR THERMAL COMPANY AND ADVIDING Aboina Gerard(1)(2), A. Mahamat Tahir(1), M. Abdou Tankari(2), G. Lefebvre(2) (1) High Institute of Sahel and Sahara at Iriba, Chad, (2) CERTES Lab., University of Paris Est Creteil
N2-PS 509	ENVIRONMENTALLY COMMITTED SHORT-TERM PLANNING OF ELECTRICAL DISTRIBUTION SYSTEMS CONSIDERING RENEWABLE BASED DG SITING AND SIZING Ozy Daniel Melgar Dominguez(1), Mahdi Pourakbari Kasmaei(1), Marina Lavorato(1), Jose Sanches Mantovani(1) (1) Universidade Estadual Paulista, (2) PUC-Campinas
N2-P5 433	TWO-SWITCH FORWARD CONVERTER EFFICIENCY OPTIMIZATION Jan Martis, Pavel Vorel, Jan Knobloch Brno University of Technology
N2-PS 474	OPTIMIZING DROOP COEFFICIENTS FOR MINIMUM COST OPERATION OF ISLANDED MICRO-GRIDS Eleonora Riva Sanseverino(1), Quynh T.T. Tran(1), Gaetano Zizzo(1), Maria Luisa Di Silvestre(1), Binh Van Doan(2), Ninh Quang Nguyen(2), Josep M. Guerrero(3) (1) University of Palermo, (2) Vietnam Academy of Science and Technology, (3) University of Aalborg
N2-PS 722	NONLINEAR DROOP CONTROL FOR MINIMUM POWER LOSSES OPERATION IN ISLANDED MICROGRIDS Ouynh T.T. Tran, H. Shehadeh, Eleonora Riva Sanseverino, S. Favuzza, Maria Luisa Di Silvestre University of Palermo





TECHNICAL SESSION 31 (A2-TS1)

ELECTRICAL SAFETY
ENGINEERING AND GROUNDING
Session Chair: Giovanni Luca Amicucci, Fabio Fiamingo
INAIL

Thursday June 8th, 2017 | 15:00 - 17:00 Venue: Room Solari

A2-131 237	Massimo Mitolo(1), Salvatore Favuzza(2), Gaetano Zizzo(2) (1) Irvine Valley College, (2) University of Palermo
A2-TS1 613	EXPERIMENTAL INVESTIGATION ON THE BREAKAGE IN EARTH WIRE SUSPENSION STRING WITH WINDING PREFORMED ARMOR RODS Gang Liu(1), Yang Li(1), Yuanjian Zhang(2), Deming Guo(3), Haixia Qi(3), Hui Ma(4) (1) South China University of Technology, (2) Dongguan Power Supply Bureau Co. Ltd, (3) South China Agricultural University, (4) The University of Queensland Australia
A2-TS1 083	LOW-FREQUENCY TRIPPING CHARACTERISTICS OF RESIDUAL CURRENT DEVICES Stanislaw Czapp, Krzysztof Dobrzynski, Jacek Klucznik, Zbigniew Lubosny Gdansk University of Technology
A2-TS1 341	DISTINGUISHING SHORT CIRCUIT AND NORMAL OPERATION CURRENTS IN DC URBAN LIGHT RAILWAY SYSTEMS Enrico Pons(1), Pietro Colella(1), Roberto Rizzoli(2), Riccardo Tommasini (3) (1) Politecnico di Torino, (2) Infratrasporti. To Srl, Torino, (3) Passed away on January 20th, 2017
A2-TS1 180	ON THE HAZARDOUS SITUATIONS DUE TO THE PRESENCE OF HV/MV SUBSTATIONS IN URBAN AREAS Jaser Sa'ed(1), Maria Luisa Di Silvestre(2), Eleonora Riva Sanseverino(2), Gaetano Zizzo(2), Pietro Colella(3), Enrico Pons(3) (1) Birzeit University, (2) University of Palermo, (3) Politecnico di Torino
A2-TS1 354	MV GROUND FAULT CURRENT DISTRIBUTION: AN ANALYTICAL FORMULATION OF THE REDUCTION FACTOR Pietro Colella(1), Enrico Pons(1), Riccardo Tommasini(2) (1) Politecnico di Torino, (2) Passed away on January 20th, 2017
A2-TS1 382	EARTH RESISTANCE MEASUREMENTS IN URBAN CONTEXTS: PROBLEMS AND POSSIBLE SOLUTIONS Pietro Colella(1), Enrico Pons(1), Riccardo Tommasini(3), Eleonora Riva Sanseverino(2), Maria Luisa Di Silvestre(2), Gaetano Zizzo(2) (1) Politecnico di Torino, (2) University of Palermo, (3) Passed away on January 20th, 2017
A2-TS1 648	PROTECTION OF GROUP 2 MEDICAL LOCATIONS (OPERATING ROOMS) FROM ATMOSPHERIC SURGES Giovanni Luca Amicucci, Fabio Fiamingo INAIL
A2-TS1 651	USAGE OF RFID IN SAFETY APPLICATIONS Giovanni Luca Amicucci, Fabio Fiamingo INAIL



TECHNICAL SESSION 32 (A2-TS2)

MONITORING, DIAGNOSTICS AND RELIABILITY Session Chair: Silvano Vergura University of Bari

Thursday June 8th, 2017 | 15:00 - 17:00 Venue: Room S. Carlo Borromeo

AZ-152 040	BUCK/BUCK-BOOST CONVERTER WITH ENERGY STORAGE Saima Siouane, Slaviša Jovanović, Philippe Poure University of Lorraine
A2-TS2 383	SUN TRACKER ROBOTIC ARM OPTICAL DISTANCE MEASURING ALGORITHM EVALUATION USING SIX SIGMA METHODS Roland Szabo, Aurel Gontean Politehnica University Timisoara
A2-TS2 334	APPLICATION OF S TRANSFORM FOR DETECTION OF EXTERNAL INTERFERENCES IN ONLINE TRANSFORMER IMPULSE FREQUENCY RESPONSE ANALYSIS Bahar Mohseni, Naser Hashemnia, Syed Islam Curtin University - Perth
A2-TS2 109	A POWER TRANSMISSION LINE FAULT LOCATOR BASED ON THE ESTIMATION OF SYSTEM MODEL PARAMETER Ivars Zalitis, Aleksandrs Dolgicers, Jevgenijs Kozadajevs Riga Technical University
A2-TS2 401	INRUSH AND FAULT CURRENT DISCRIMINATION USING WAVELET TRANSFORM AND AUTOREGRESSIVE MODELING Pooria Norouzi, Negar Dashti Istanbul Technical University
A2-TS2 569	PV PENETRATION IN DISTRIBUTION LINES OF SMART GRIDS Silvano Vergura, Mario Carpentieri Polytechnic University of Bari
A2-TS2 607	RELIABILITY EVALUATION OF PLUG-IN HYBRID ELECTRIC VEHICLE CHARGERS Mohsen Ghavami, Chanan Singh Texas A&M University



TECHNICAL SESSION 33 (A2-TS3) **INTERNET** OF ENERGY Session Chair: Eleonora Riva Sanseverino University of Palermo Thursday June 8th, 2017 | 15:00 - 17:00 Venue: Room Agnesi

SMART DISTRICT ENERGY OPTIMIZATION OF FLEXIBLE ENERGY UNITS FOR THE INTEGRATION OF LOCAL ENERGY STORAGE Vincenzo Croce(1), Marilena Lazzaro(1), Giuseppe Paternò(1), Denisa Ziu(1), Eleonora Riva Sanseverino(2), Antonello Monti(3) (1) Engineering Ingegneria Informatica S.p.A., (2) University of Palermo, (3) RWTH Aachen University OPTIMAL SCHEDULING OF A MULTI-CARRIER ENERGY HUB SUPPLEMENTED BY BATTERY ENERGY STORAGE SYSTEMS Mohammad Sadegh Javadi(1), Amjad Anvari-Moghaddam(2), Josep M. Guerrero(2) (1) Islamic Azad University – Shiraz, (2) University of Aalborg A2-TS3 195 A TWO-END TRAVELING WAVE FAULT LOCATION SYSTEM FOR MV CABLES BASED ON LORA TECHNOLOGY Vincenzo Li Vigni(1), Eleonora Riva Sanseverino(2), Antonio Di Stefano(1), Roberto Candela(1) A2-TS3 164 (1) Prysmian Electronics - Palermo, Italy, (2) University of Palermo A2-TS3 159 OPTIMAL OPERATION OF DGS IN ISLANDED MICROGRID USING DROOP CONTROL Mohamad Abedini Bu-Ali Sina University ACTIVE LOAD SHARING TECHNIQUE FOR ON-LINE EFFICIENCY OPTIMIZATION IN DC MICROGRIDS Eleonora Riva Sanseverino(1), Gaetano Zizzo(1), Valeria Boscaino(1), Josep M. Guerrero(2), Lexuan Meng(2) (1) University of Palermo, (2) Aalborg University A2-TS3 260

CHARGING ELECTRIC VEHICLES USING OPPORTUNISTIC STOPOVERS

A2-TS3 301

A2-TS3 647

Pierluigi Gallo University of Palermo



TECHNICAL SESSION 34 (A2-TS4)

SUSTAINABLE TRANSPORT SYSTEMS: POWER INFRASTRUCTURE AND ELECTRICAL VEHICLES Session Chair: Morris Brenna Politecnico di Milano

Thursday June 8th, 2017 | 15:00 - 17:00 Venue: Room Caccia Dominioni

MODELLING 2×25 KV – 50 HZ TRACTION SYSTEMS FOR POWER FREQUENCY STUDIES A2-TS4 283

Alfonso Capasso(1), Regina Lamedica(1), Alessandro Ruvio(1), Giovanni Aloisio(1), Massimo Čeraolò(2), Giovanni Lutzemberger(2), Luca Sani, (2), Paolo Bolognesi(1) (1) Sapienza University of Rome, (2) University of Pisa

A2-TS4 570 ELECTRIC VEHICLE BATTERY CHARGER CONTROLLED BY MAGNETIC CORE REACTOR TO WIRELESS POWER TRANSFER SYSTEM

Luis Romba(1), Stanimir Valtchev(1), Rui Melício(1), M.V. Mudrov(2), Anatolii Ziuzev(2) (1) Universidade Nova de Lisboa, (2) Ural Federal University - Yekaterinburg, Russia

A2-TS4 520 STATISTICAL CHARACTERIZATION

OF LITHIUM-ION BATTERIES USING SYSTEMC-WMS Simone Orcioni, Adriana Ricci, Luca Buccolini, Massimo Conti Università Politecnica delle Marche

AN AHP-BASED METHOD TO ASSESS THE INTRODUCTION OF ELECTRIC CARS IN A PUBLIC ADMINISTRATION
Cristian Giacomini, Giovanni Longo, Elio Padoano, Michela Zornada A2-TS4 227

University of Triesté

A2-TS4 432

AN ACTIVE RAILWAY POWER QUALITY COMPENSATOR FOR 2×25KV HIGH-SPEED RAILWAY LINES Hamed Jafari Kaleybar(1), Hossein Madadi Kojabadi(1), Morris Brenna(2),

Federica Foiadelli(2), Seyed Saeed Fazel(3)
(1) Sahand University of Technology, (2) Politecnico di Milano, (3) Iran University of Science and Technology

A2-TS4 202

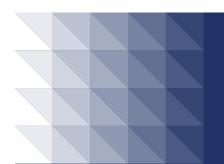
COMPARATIVE STUDY BETWEEN RULE-BASED AND FREQUENCY SEPARATION ENERGY MANAGEMENT STRATEGIES WITHIN FUEL-CELL/BATTERY ELECTRIC VEHICLE Hamza Alloui(1), Farid Khoucha(1), Nassim Rizoug(2), Mohamed Benbouzid(3), Abdelaziz Khelou(1)

(1) Ecole Militaire Polytechnique Algiers, (2) S2ET-ESTACA Laval, (3) Université de Brest

OPTIMAL SCHEDULING STRATEGY IN INSULAR GRIDS CONSIDERING SIGNIFICANT SHARE OF RENEWABLES A2-TS4 454

Marcos D.B. Silva(1), Gerardo J. Osório(2), Miadreza Shafie-khah(2), Juan M. Lujano-Rojas(3), João P.S. Catalão(1)(2)(3) (1) INESC TEC and FEUP, (2) C-MAST/UB - Covilha, (3) INESC-ID/ISTUL - Lisbon





TECHNICAL SESSION 35 (A2-TS5)

SMART GRIDS - SMART CITIES TRANSFORMING LIFE
TRANSFORMING THE WORLD - 2
Session Chair: Prabhakar Karthikeyan, Fabio Bisegna
VIT University, University of Rome Sapienza

Thursday June 8th, 2017 | 15:00 - 17:00 Venue: Room Cavaliere

SAPIENZA SMART CAMPUS - FROM THE MATRIX APPROACH TO THE APPLICATIVE ANALYSIS OF AN OPTIMIZED GARBAGE COLLECTION SYSTEM A2-TS5 484

Francesca Pagliaro, Benedetta Mattoni, Vito Ponzo, Giulio Corona, Fabio Nardecchia,

Fabio Bisegna, Franco Gugliermetti Sapienza University of Rome

A2-TS5 427

IEC EN 60825-1 3TH EDITION VS 2TH EDITION:
DIFFERENT CLASSIFICATION DUE TO MAXIMUM ANGULAR SUBTENSE
AND REMOVAL OF MEASURING CONDITION 2
Alessandra Tomaselli, Dante Milani
University of Pavia

RISK ASSESSMENT ARISING FROM EXPOSURE TO ARTIFICIAL OPTICAL RADIATION - RESULTS OF AN EXTENSIVE EVALUATION CAMPAIGN IN THE HOSPITALS OF TUSCANY (ITALY) A2-TS5 086

Fabio Fantozzi, Francesco Leccese, Michele Rocca, Giacomo Salvadori University of Pisa



TECHNICAL SESSION 36 (A2-TS6)

POWER SYSTEMS: DISTRIBUTION GRIDS COMPONENTS AND OPERATION - 3 Session Chair: Gianfranco Chicco Politecnico di Torino

Thursday June 8th, 2017 | 15:00 - 17:00 Venue: Room Marinetti

A2-TS6 664	RESEARCH ON CASE LIBRARY CONSTRUCTION OF ENERGY LOSS IN RURAL DISTRIBUTION NETWORKS WITH REGIONAL DIFFERENTIATION THEORY Ze Yuan(1), Jianhua Yang(1), Weizhou Wang(2), Jing Peng(2), Jingjing Zheng(2), Fuchao Liu (1) China Agricultural University, (2) State Grid Gansu Electric Power Company
A2-TS6 691	DESIGN OF ACTUAL APPLICATION SOFTWARE FOR POWER LOSS EVALUATION IN DISTRIBUTION SYSTEM Xiaoyu Zhao(1), Dechang Yang(1), Chenhui Yin(1), Jing Peng(2), Fuchao Liu(2), Weizhou Wang (1) China Agricultural University, (2) State Grid Gansu Electric Power Company
A2-TS6 446	FULL DIGITAL ARCHITECTURE FOR SELECTIVE PROTECTION COORDINATION IN LOW VOLTAGE ELECTRICAL INSTALLATIONS Massimo Belometti, Paolo Bettinelli, Antonio Fidigatti, Enrico Ragaini ABB
A2-TS6 183	NONSY LOAD FLOW: SMART GRID LOAD FLOW USING NON-SYNCHRONIZED MEASUREMENTS Alireza Bahmanyar(1), Abouzar Estebsari(2), Amin Bahmanyar(3), Ettore Bompard(2) (1) Iran University of Science and Technology, (2) Politecnico di Torino, (3) Islamic Azad University
A2-TS6 458	METHODOLOGY FOR ISLANDING OPERATION OF DISTRIBUTED SYNCHRONOUS GENERATORS Ahda P. G. Pavani, Patry Colorado Universidade Federal do ABC
A2-TS6 128	BREAK-EVEN DISTANCE ANALYSIS OF RESIDENTIAL SOLAR PHOTOVOLTAIC SYSTEM AND LINE EXTENSION FOR OFF-GRID ELECTRIFICATION METHODOLOGY IN THE PHILIPPINES John Mark Napao, Christian Angelo Yap, Russel John Gallano University of the Philippines Diliman
A2-TS6 224	REVIEW OF TECHNICAL ISSUES AND CHALLENGES IN THE DEVELOPMENT OF COMMUNITY GRIDS Sebastian P. Rosado, Shafiuzzaman K. Khadem International Energy Research Centre - Tyndall National Institute, Cork (Ireland)
A2-TS6 080	COMPREHENSIVE ANALYSIS OF OPTIMAL ALLOCATION OF CAPACITOR BANKS IN VARIOUS DISTRIBUTION NETWORKS USING DIFFERENT HYBRID OPTIMIZATION ALGORITHMS Mohamed A. Tolba(1), Vladimir N. Tulsky(1), Artem S. Vanin(1), Ahmed A. Zaki Diab(2) (1) Moscow Power Engineering Inst., (2) Minia University



POSTER SESSION 4 (A2-PS) Thursday, June 8th, 2017 | 14:30 – 16:30 Venue: Room Bramante (POSTER AREA)

WIRELESS POWER TRANSFER Session Chair: Alicia Triviño, Michela Longo Universidad de Málaga, Politecnico di Milano

A2-PS 229	SYSTEM IDENTIFICATION AND TUNING OF WPT SYSTEMS Johan, Winges(1), Thomas Rylander(1), Carl Petersson(2), Christian Ekman(2), Lars-Ake Johansson(2), Tomas McKelvey(1) (1) Chalmers University of Technology, (2) Qrtech AB
A2-PS 309	CONTROLLER DESIGN AND EXPERIMENTAL VALIDATION OF A POWER CHARGING STATION FOR E-BIKE CLEVER MOBILITY Laura Celentano(1), Luigi Rubino(2), Diego lannuzzi(1) (1) University of Naples Federico II, (2) University of Campania Luigi Vanvitelli
A2-PS 448	MULTIPHASE WPT-SYSTEM BASED ON PHASE SHIFTED RESONANT TOPOLOGIES Faical Turki; Marc Detweiler Paul Vahle GmbH & Co. KG
A2-PS 698	FLEXIBLE SECONDARY PAD DESIGN FOR WIRELESS POWER TRANSFER PROVIDING PUBLIC INTEROPERABILITY Olaf Simon, Thomas Krempel, Harald Wolf, Jochen Mahlein SEW-EURODRIVE GmbH & Co. KG
A2-PS 467	EVALUATION OF LOSSES IN A BIDIRECTIONAL WIRELESS POWER TRANSFER SYSTEM FOR ELECTRIC VEHICLES Alicia Trivio, José M. González-González, José A. Aguado Sánchez University of Málaga
A2-PS 545	POWER PAD DESIGN AND OPTIMIZATION FOR CONTACTLESS ELECTRIC VEHICLE BATTERY CHARGING SYSTEM Alberto Dolara, Sonia Leva, Michela Longo, Francesco Castelli-Dezza, Marco Mauri Politecnico di Milano
A2-PS 544	ANALYSIS OF CONTROL STRATEGIES FOR COMPENSATED INDUCTIVE POWER TRANSFER SYSTEM FOR ELECTRIC VEHICLES CHARGING Alberto Dolara, Sonia Leva, Michela Longo, Francesco Castelli-Dezza, Marco Mauri Politecnico di Milano
A2-PS 521	DISTORTION ANALYSIS AND EQUIVALENT IMPEDANCE ESTIMATION OF A CLASS-D FULL-WAVE RECTIFIER Maria Cristina Piccirilli(1), Alberto Reatti(1), Fabio Corti(1), Marian Kazimierczuk(2), Aghasthya Ayachit(2), Piero De La Pierre(3), Andrea Nepote(3) (1) University of Florence, (2) Wright State University, (3) Magneti Marelli S.p.A.
A2-PS 699	COMPARATIVE ANALYSIS OF DIFFERENT TOPOLOGIES FOR WIRELESS POWER TRANSFER SYSTEMS Ioana-Gabriela Sirbu, Lucian Mandache University of Craiova

THURSDAY AFTERNOON SESSIONS A2

OPTIMIZATION OF THE COUPLING FACTOR CURVE FOR LATERAL OFFSET OF A COIL PAIR FOR CONTACTLESS INDUCTIVE CHARGING TO GENERATE POSITIONING TOLERANCE A2-PS 388

Mike Böttigheimer, Nejila Parspour, Michael Armbruster

Universität Stuttgart

MULTIVARIABLE AUTOMATIC COMPENSATION METHOD FOR INDUCTIVE POWER TRANSFER SYSTEM A2-PS 399

Rodrigo Porto, Lucas Murliky, Gustavo Oliveira, Valner J. Brusamarello

Federal University of Rio Grande do Sul

A2-PS 635 FIBER-BASED WIDE FIELD-OF-VIEW OPTICAL ANTENNA

FOR NON-LINE-OF-SIGHT WIRELESS OPTICAL COMMUNICATION

Feras AbouGalala

American University of the Middle East

POSTER SESSION 4 (A2-PS)

Thursday, June 8th, 2017 | 14:30 - 16:30 Venue: Room Bramante (POSTER AREA)

SUSTAINABLE DEVELOPEMENT OF VEHICLES: DESIGN, POWER MANAGEMENT, SENSING AND CONTROL Session Chair: **Luca Pugi** University of Florence

TOWARDS THE DEVELOPMENT A2-PS 238

OF RESIDENTIAL SMART DISTRICTS: THE ROLE OF EVS

Michela Longo, Federica Foiadelli, Simone Franzò, Federico Frattini, Vito Manfredi Latilla

Politecnico di Milano

A2-PS 066 DESIGN AND SIMULATION OF A MULTIROLE ELECTRIC VEHICLE

Luca Pugi(1), Francesco Grasso(1), Bartolomei Argeo(2)

(1) University of Florence, (2) Argos Engineering

A2-PS 140 WIRELESS POWER RECHARGE FOR UNDERWATER ROBOTICS

Benedetto Alotta, Luca Pugi, Alberto Reatti, Fabio Corti

University of Florence

A2-PS 067 **DEVELOPMENT OF AN INNOVATIVE AND SUSTAINABLE SAIL-DRONE**

Benedetto Alotta, Luca Pugi, Marco Montagni, Andrea Corrieri, Daniele Masti, Lorenzo Vanni

University of Florence



POSTER SESSION 4 (A2-PS)

Thursday, June 8th, 2017 | 14:30 – 16:30 Venue: Room Bramante (POSTER AREA)

ELECTRICAL MACHINES AND POWER CONVERTERS - 1 Session Chair: Alberto Reatti University of Florence

A2-PS 053 A MAXIMUM POWER POINT TRACKER BASED THE WHALE OPTIMIZATION ALGORITHM FOR CONTROLLING THE PERFORMANCE OF INDUCTION MOTOR FED BY A PHOTOVOLTAIC SYSTEM Osama El-baksawi Faculty of Engineering, Port-Said A2-PS 152 MODELING OF INCREMENTAL CONDUCTANCE MPPT WITH PID CONTROLLER FOR PHOTOVOLTAIC SYSTEM USING BUCK-BOOST CONVERTER Osama El-baksawi Faculty of Engineering, Port-Said

A2-PS 211 **EXPERIMENTAL EVALUATIONS OF GLOBAL MAXIMUM POWER POINT** TRACKING APPROACHES IN PARTIAL SHADING CONDITIONS Mustafa Başoğlu, Bekir Çakir

Kocaeli University

A VARIABLE SWITCHING FREQUENCY CONTROL METHOD FOR ACTIVE FRONT END MULTILEVEL RECTIFIER
Saeed Ouni(1), Masih Khodabandeh(1), Mohammad Reza Zolghadri(1), Jose Rodriguez(2)
(1) Sharif University of Technology, (2) Universidad Andres Bello A2-PS 574

DESIGN AND PARAMETER ANALYSIS OF SHORT-FLUX PATH SWITCHED RELUCTANCE MOTOR IN ELECTRICAL VEHICLES A2-PS 151 Milan Diko(1), Pavol Rafajdus(1), Pavol Makys(1), Vladimir Vavrus(1), Juraj Makarovic(1); Julius Saitz(2) (1) University of Žilina, (2) Ansys, Inc.

A2-PS 616 **ANALYSIS OF A THREE-PHASE DUAL ACTIVE BRIDGE CONVERTER DURING THE DEADBAND** Farzad Yazdani(1), Saeid Haghbin(2), Torbjorn Thiringer(1), Mohammad Reza Zolghadri(1) (1) Sharif University of Technology, (2) Chalmers University of Technology

A2-PS 004 A GRID CONNECTION SCHEME OF A SWITCHED RELUCTANCE GENERATOR USING P+RESONANT CONTROLLER Ghunter P. Viajante(1), Eric N. Chaves(1), Carlos Antunes Queiroz(1), Marcos Antonio Freitas(1), Luiz Carlos Miranda(1), D.P.A. Silva(1), S. B. Silva(1), Luciano Coutinho Gomes(2), Ricardo Tirone Fidelis(2) (1) Federal Institute of Goiás, (2) Federal University of Uberlândia

THURSDAY AFTERNOON SESSIONS A2

POSTER SESSION 4 (A2-PS) Thursday, June 8th, 2017 | 14:30 – 16:30 Venue: Room Bramante (POSTER AREA)

RENEWABLE ENERGY SOURCES IN POWER SYSTEMS - 2 Session Chair: Alberto Dolara Politecnico di Milano

A2-PS 477	A DISTRIBUTED APPROACH FOR DG INTEGRATION AND POWER QUALITY MANAGEMENT IN RAILWAY POWER SYSTEMS Weijie Pan, Surya Chandan Dhulipala, Arturo S. Bretas University of Florida
A2-PS 516	AN IMPROVED PSO ALGORITHM FOR HIGH ACCURATE PARAMETER IDENTIFICATION OF PV MODEL Lili Gong, Wu Cao, Jianfeng Zhao Southeast University – Nanjing, China
A2-PS 729	INVESTIGATING THE EFFECTS OF SELECTING DIFFERENT SLACK BUS ON POWER SYSTEMS Ashghar Sabati (1), Kivanc Basaran (2), Ramazan Bayindir (1), Sanjeevikumar Padmanaban (3), Pierluigi Siano (4), Zbigniew Leonowicz (5) (1) Gazi University, (2) Manisa Celal Bayar University, (3) University of Johannesburg, (4) University of Salerno, (5) Wrocław University of Technology
A2-PS 113	DECENTRALIZED GENERATION IN URBAN DISTRICTS: OPTIMAL PLANNING CONSIDERING UNCERTAINTIES Mansueto Rossi, Stefano Bracco, Federico Delfino, Michela Robba, Luisa Pagnini University of Genoa
A2-PS 532	IMPROVING THE HOSTING CAPACITY OF PHOTOVOLTAIC DISTRIBUTED GENERATORS IN LOW VOLTAGE DISTRIBUTION SYSTEMS BY USING DEMAND RESPONSE Saulo Moreira(1), Dionízio Paschoareli Jr.(2), Nadya Kalache(1) (1) Universidade Federal de Mato Grosso do Sul (UFMS), (2) Universidade Estadual Paulista (UNESP)
A2-PS 696	VEHICLE ELECTRIFICATION: A FURTHER VARIABLE TOWARD INTEGRATED INTELLIGENT ENERGY SYSTEMS Dario Marra, Gianfranco Rizzo, Miadreza Shafie-khah, Pierluigi Siano, Francesco A. Tiano University of Salerno
A2-PS 081	OPTIMAL APPLICATION ORDER OF NETWORK RECONFIGURATION AND ODGP FOR LOSS REDUCTION IN DISTRIBUTION NETWORKS Aggelos S. Bouhouras(1), Paschalis Gkaidatzis(2), Dimitrios Labridis(2) (1) Western Macedonia University of Applied Sciences, (2) Aristotle University of Thessaloniki (AUTH)
A2-PS 665	SOME ASPECTS OF STEADY STATE SIMULATIONS OF AC/DC HYBRID TRANSMISSION LINES Alexander Novitskiy, Dirk Westermann Ilmenau University of Technology
A2-PS 033	MARKET TRANSACTIONS OF PEV PARKING LOTS IN THE PRESENCE OF WIND GENERATION Ehsan Heydarian-Forushani(1), Mohammad Esmail Hamedani Golshan(1), Pierluigi Siano(2) (1) Isfahan University of Technology, (2) University of Salerno
A2-PS 082	COMPARATIVE ANALYSIS OF HEURISTIC TECHNIQUES APPLIED TO ODGP

Paschalis Gkaidatzis(1), Aggelos Bouhouras(2), Dimitrios Doukas(1), Dimitrios Labridis(1) (1) Aristotle University of Thessaloniki, (2) University Of Applied Sciences Of Western Macedonia



A2-PS 504

CONTRACTED GENERATION VERIFICATION IN HYDRO-DOMINATED ELECTRICITY MARKETS
Fu Chen(1), Rui Cao(1), Chuntian Cheng(1), Gang Li(1), Xiufeng Li(2)
(1) Dalian University Of Technology, (2) Dispatching Center Yunnan Power Grid

A2-PS 289 AN INSTRUMENTAL CONTRIBUTION TO INCLUDE THE IMPACT OF PV ON CAPACITY ADEQUACY IN LONG-TERM ENERGY MODELS Fabrizio Fattori, Norma Anglani

University of Pavia

RISK-BASED SELF-SCHEDULING OF GENCOS IN SMART GRIDS CONSIDERING A NEW METHOD FOR BILATERAL CONTRACTS A2-PS 445

Miadreza Shafie-khah(1), Gerardo J. Osório(1), Desta Zahlay Fitiwi(1), João P.S. Catalão(1)(2)(3), Pierluigi Siano(4)
(1) C-MAST/UBI - Covilha, (2) INESC TEC and FEUP - Porto,
(3) INESC-ID/IST-UL - Lisbon, Portugal, (4) University of Salerno

A2-PS 587

CORDINATED DTC AND VOC CONTROL FOR PMSG BASED GRID CONNECTED WIND ENERGY CONVERSION SYSTEM Sanjeevikumar Padmanaban(1), Ramesh Babu(2), Ramiji Tiwari(2), Pierluigi Siano(3), Luigi Martirano(4)

(1) University of Johannesburg, (2) VIT University,
(3) University of Salerno, (4) Sapienza University of Rome



TECHNICAL SESSION 37 (M3-TS2)

RENEWABLE ENERGY SOURCES IN POWER SYSTEMS, DISTRIBUTED GENERATION - 3 Session Chair: Sonia Leva Politecnico di Milano

Friday June 9th, 2017 | 9:00 – 11:00 Venue: Room S. Carlo Borromeo

M3-TS2 223	ENERGY MANAGEMENT OF HYBRID PV-STORAGE SYSTEMS FOR IMPROVED GRID INTEGRATION Maria Carmela Di Piazza, Massimiliano Luna, Giuseppe La Tona, Annalisa Di Piazza CNR-ISSIA
M3-TS2 327	A SINGLE PANEL PV MICROINVERTER BASED ON COUPLED INDUCTOR DC-DC Pierluigi Guerriero, Marino Coppola, Pasquale Cennamo, Davide Lauria, Santolo Daliento University of Naples Federico II
M3-TS2 359	MITIGATION OF POWER FLUCTUATION IN VARIABLE-SPEED WIND TURBINE WITH DFIG Babak Ganji, Marziye Rashidian, Mohsen Rahimi University of Kashan
M3-TS2 603	REACTIVE POWER CONTROL FOR VOLTAGE REGULATION IN THE PRESENCE OF MASSIVE PERVASION OF DISTRIBUTED GENERATORS Haleema Qamar(1), Hafsa Qamar(1), Alfredo Vaccaro(1), Nisar Ahmed(2) (1) University of Sannio, Italy, (2) G1K Institute of Engineering Sciences and Technology - Topi
M3-TS2 478	EVALUATION OF THE EFFECT OF WIND FARMS WITH DOUBLY-FED INDUCTION GENERATORS ON STEADY STATE VOLTAGE STABILITY Yaser Bigonah Burki(1), Naser Nourani Esfetanaj(2), Milad Gheydi(3), Mehrdad Mostafavi(4), Payam Farhadi(5) (1) Islamic Azad University - Shiraz (2) Sahand University of Technology, (3) Islamic Azad University - Tehran, (4) Islamic Azad University - Arak, (5) Islamic Azad University - Parsabad Moghan
M3-TS2 561	PARAMETER TRANSLATION FOR SINGLE-DIODE PV MODELS BASED ON EXPLICIT IDENTIFICATION

Maria Carmela Di Piazza(1), Massimiliano Luna(1), Giovanni Petrone(2), Giovanni Spagnuolo(2) (1) CNR-ISSIA, (2) University of Salerno



TECHNICAL SESSION 38 (M3-TS3)

ELECTRICAL MACHINES
AND POWER CONVERTERS - 2
Session Chair: Alberto Reatti
University of Florence
Friday June 9th, 2017 | 9:00 – 11:00
Venue: Room Agnesi

M3-TS3 046	PERFORMANCE PREDICTION OF SWITCHED RELUCTANCE MOTOR UNIVERSE ECCENTRICITY FAULT Sayed Reza Afzali Arani, Babak Ganji University of Kashan
M3-TS3 156	A MODIFIED SELECTIVE HARMONIC ELIMINATION METHOD FOR BALANCING CAPACITOR VOLTAGE IN MODULAR MULTILEVEL CONVERTER Abdelrahman Elwakeel, Mohamed Tawfik, Ibrahim El-Arabawy Alexandria University
M3-TS3 176	THE INFLUENCE OF TECHNICAL CHANGES ON THE PRODUCT SELLING PRICE Eva Vitkova, V. Hajek Brno University of Technology
M3-TS3 326	ANALYTICAL APPROACH TO MAXIMIZE THE TORQUE DENSITY WITH SIZE CONSTRAINTS FOR PMSM Kidoek Lee Korea Electronics Technology Institute
M3-TS3 511	INDUCTIVE POWER TRANSFER: THROUGH A BONDGRAPH ANALOGY, AN INNOVATIVE MODAL APPROACH Luca Pugi, Alberto Reatti, Fabio Corti, Rosa Anna Mastromauro University of Florence
M3-TS3 263	A SIMPLIFIED LOAD SHARING CONTROL FOR PARALLEL INVERTERS IN MICROGRID Teymoor Ghanbari, Vahid Azarm, Farzad Iraji, Ebrahim Farjah Shiraz University, Iran
M3-TS3 265	STAND ALONE PHOTOVOLTAIC SYSTEM WITH INTEGRATED ONLINE UPS TO SMOOTH OUTPUT FLUCTUATIONS Teymoor Ghanbari, Mohammad Azma, Ehsan Bagheri, Nima Tashakor, Ebrahim Farjah Shiraz University
M3-TS3 360	DESIGN OPTIMIZATION OF SWITCHED RELUCTANCE GENERATOR TO MAXIMIZE EFFICIENCY AND GEN-POWER RATIO Mahdi Heidarian, Babak Ganji University of Kashan



TECHNICAL SESSION 39 (M3-TS4)

MAINTENANCE, OPERATION AND SAFETY IN POWER SYSTEMS Session Chair: Heiko Thimm Pforzheim University

Friday June 9th, 2017 | 9:00 – 11:00 Venue: Room Caccia Dominioni

	Subrahmanyam Pulipaka(1), Rajneesh Kumar(2) (1) Soreva Energy Private Limited - New Delhi, (2) Birla Institute of Technology and Science - Pilani
M3-TS4 615	CONSIDERING VARIATIONS OF NETWORK TOPOLOGY IN OPTIMAL RELAY COORDINATION USING TIME-CURRENT-VOLTAGE CHARACTERISTIC Navid Bayati(1), Akbar Dadkhah(1), Seved Hesamedin Sadeghi(1), Behrooz Vahidi(1), Ali Eftekhari Milani(2) (1) Amirkabir University of Technology, (2) Politecnico di Milano
M3-TS4 049	DESIGN AND IMPLEMENTATION OF REAL-TIME SYNCHRONOUS GENERATOR SIMULATOR FOR TEST FIELD Reza Farid Ghasemnia(1), Mohamadreza Faridghasemnia(2), Davoud Gharedaghi, (1), Zahra Arabkhazaeli(3) (1) MAPNA Group - Karaj, Iran, (2) Sapienza University of Rome, (3) T. F. Bina Ltd Tehran, Iran
M3-TS4 041	USING IOT ENABLED MULTI-MONITORING DATA FOR NEXT-GENERATION EHS COMPLIANCE MANAGEMENT SYSTEMS Heiko Thimm Pforzheim University
M3-TS4 172	COMPARISON ANALYSIS OF THE VOLTAGE VARIATION RANGES FOR DISTRIBUTION NETWORKS Jinsik Lee, Gi Hyun Kim Korea Electric Association
M3-TS4 051	GENETIC ALGORITHM FOR OPTIMIZATION OF POWER SWITCH ALLOCATION IN DISTRIBUTION NETWORK Laila Zemite, Mihails Gorobecs, Arturs Smats, Aivo Jasevics, Anatolijs Levchenkovs Riga Technical University
M3-TS4 514	SELF-ADAPTIVE PROTECTION STRATEGIES FOR DISTRIBUTION SYSTEM WITH DGS AND FCLS BASED ON DATA MINING AND NEURAL NETWORK Wenjun Tang, Hong-Tzer Yang Research Center for Energy Technology and Strategy

M3-TS4 132 COMPARISON OF SOM AND CONVENTIONAL NEURAL NETWORK



TECHNICAL SESSION 40 (M3-TS5)

POWER SYSTEMS: TRANSMISSION GRIDS COMPONENTS AND OPERATION - 1 Session Chair: Hamed Jafari Politecnico di Milano

Friday June 9th, 2017 \mid 9:00 – 11:00 Venue: Room Cavaliere

DURING SUB SYNCHRONOUS RESONANCE Salman Rezaei Kerman Power Generation Management Co. COST EVALUATION OF CURRENT UPRATING OF OVERHEAD TRANSMISSION LINES USING ACSR AND HTLS CONDUCTORS M3-TS5 321 Somboon Nuchprayoon(1), Artitaya Chaichana(2) (1) Chiang Mai University, (2) The Electricity Generating Authority of Thailand (EGAT) SAVING ENVIRONMENTAL IMPACT OF ELECTRICAL ENERGY TRANSMISSION BY EMPLOYING EXISTING/PLANNED TRANSPORT CORRIDORS M3-TS5 367 Roberto Benato(1), Sebastian Dambone Sessa(1), Luca Guizzo(2), Massimo Rebolini(2) (1) University of Padova, (2) TERNA PROGRESS TOWARDS INTELLIGENT TRANSMISSION LINES BASED ON THE MONITORING AND MEASUREMENTS OF ELECTROMAGNETIC TRANSIENT Ke Wang(1), Hongwen Liu(1), Hao Li(1), Junhui Zhao(2) (1) Yunnan Electric Power Research Institute, (2) University of New Haven M3-TS5 376 MATHEMATICAL MORPHOLOGY BASED INRUSH BLOCKING SCHEME IN TRANSFORMER PROTECTION Balamurugan Saravanan, Ananthanaryanan Rathinam M3-TS5 106 SRM University

BEHAVIOR OF PROTECTIVE RELAYS

M3-TS5 150





TECHNICAL SESSION 41 (M3-TS6)

SMART BUILDINGS, LIGHTING, METERING, DEMAND SIDE MANAGEMENT - 1 Session Chair: Gaetano Zizzo, Marina Bonomolo University of Palermo

Friday June 9th, 2017 | 9:00 – 11:00 Venue: Room Marinetti

M3-TS6 073	OPTIMAL RESIDENTIAL LOAD SCHEDULING MODEL IN SMART GRID ENVIRONMENT Fady Melhem(1)(2), Olivier Grunder(1), Zakaria Hammoudan(3), Nazih Moubayed(4) (1) Nanonedicine Lab, Univ. Bourgogne Franche-Comté, UTBM, (2) Electrical Laboratory, Industrial Research Institute, IRI, (3) Université Libano-Francaise (ULF), (4) Lebanese University (UL)
M3-TS6 233	OUTDOOR POWER STATIONS CCTV SYSTEMS THAT WORK SYNERGISTICALLY WITH THE SECURITY LIGHTING Petr Bos, Richard Baleja, Karel Sokansky, Tomas Novak Technical University of Ostrava
M3-TS6 364	AGGREGATION OF SMALL LOADS FOR DEMAND RESPONSE PROGRAMS - IMPLEMENTATION AND CHALLENGES: A REVIEW Amin Rajabi, Li Li; Jiangfeng Zhang, Jiangou Zhu University of Technology - Sydney
M3-TS6 272	THERMAL LOAD MANAGEMENT. EXPERIMENTAL INVESTIGATION OF VOLTAGE VARIATION EFFECT ON LOADS BEHAVIOR Roberto Faranda(1), Hossein Hafezi(1), Zeinab Shafizadeh(1), Alfio Fontana(2) (1) Politecnico Di Milano, (2) Gruppo Carrefour Italia
M3-TS6 539	DAY-AHEAD NATURAL GAS FORECASTING USING NONSEASONAL EXPONENTIAL SMOOTHING METHODS Mustafa Akpinar, Nejat Yumusak Sakarya University
M3-TS6 030	INTELLIGENT HOUSING DEVELOPMENT BUILDING MANAGEMENT SYSTEM (HDBMS) FOR OPTIMIZED ELECTRICITY BILLS Weixian Li, Thillainathan Logenthiran, Van Tung Phan, Wai Lok Woo School of Electrical and Electronic Engineering, Newcastle University, Singapore Campus
M3-TS6 306	ON THE EFFECTS OF BAC SYSTEMS AND LOAD CONTROL PROGRAMS ON THE UTILITY GRID Salvatore Favuzza, Diego La Cascia, Mariano G. Ippolito, Fabio Massaro, Gaetano Zizzo University of Palermo
M3-TS6 296	EXPERIMENTAL VALIDATION OF THE BAC FACTOR METHOD FOR LIGHTING SYSTEMS Marco Beccali, Marina Bonomolo, Mariano G. Ippolito, Valerio Lo Brano, Gaetano Zizzo University of Palermo







N3-TS1 084	PROBABILISTIC LOADFLOW METHODS FOR ENERGY MANAGEMENT SCHEMES IN DISTRIBUTION GRIDS Benjamin Matthiss, Patrick Gaedke, Martin Felder, Jann Binder, ZSW Zentrum für Sonnenenergie- und Wasserstoff-Forschung - Stuttgart, Germany
N3-TS1 102	AN EFFECTIVE TECHNIQUE TO IMPROVE GENERATOR-SET EFFICIENCY FOR CHARGING BATTERY USING IPMSG Pichit Lumyong, Piampoom Sarikprueck King Mongkut's Institute of Technology Ladkrabang Bangkok
N3-TS1 559	MODAL EXTRACTION FOR POWER SYSTEMS USING AMBIENT DATA Morteza Khosravi, Turaj Amraee, Koorosh Shomalzadeh K.N. Toosi University of Technology
N3-TS1 423	CONTROL OF WIND TURBINE BY LPV GAIN SCHEDULING WITH TOWER LOAD REDUCTION Mourad Djamai USTHB
N3-TS1 282	EVALUATION OF NB-PLC IN RAILWAY ENVIRONMENTS Gian Domenico Licciardo(1), Luigi Di Benedetto(1), Alfredo Rubino(1), Emilio Lanzotti(2), Eduardo Piccirilli(2) (1) University of Salerno, (2) Ansaldo STS
N3-TS1 435	IMPACT OF CUSTOMERS FLEXIBILITY IN HEAT PUMPS SCHEDULING FOR DEMAND SIDE MANAGEMENT Marco Pau, Jochen Cremer, Ferdinanda Ponci, Antonello Monti RWTH Aachen University



TECHNICAL SESSION 43 (N3-TS2)

RENEWABLE ENERGY SOURCES IN POWER SYSTEMS, DISTRIBUTED GENERATION - 4 Session Chair: Sonia Leva Politecnico di Milano

Friday June 9th, 2017 | 11:30 – 13:30 Venue: Room S. Carlo Borromeo

N3-TS2 715	RELIABILITY AND MAINTENANCE IN HIGH-POWER GRID-CONNECTED PHOTOVOLTAIC SYSTEMS: A SURVEY OF CRITICAL ISSUES AND FAILURES Giulia Piantoni, Rodolfo Araneo Sapienza University of Rome
N3-TS2 201	RECENT DEVELOPMENTS IN PHOTOVOLTAIC ELECTRICITY IN TURKEY AND A SITE DEPENDENT ANALYSIS Mustafa Başoğlu, Bekir Çakir Kocaeli University
N3-TS2 412	FUZZY LOGIC BASED INERTIAL DISPATCH STRATEGY FROM WIND POWER PLANT Santanu Paul, Zakir Hussain Rather Indian Institute of Technology - Bombay
N3-TS2 079	OPTIMAL SITTING AND SIZING OF RENEWABLE DISTRIBUTED GENERATIONS IN DISTRIBUTION NETWORKS USING A HYBRID PSOGSA OPTIMIZATION ALGORITHM Mohamed Tolba(1), Ahmed Zaki Diab(2), Vladimir Tulsky(1) (1) National Research University "MPEI" - Moscow, (2) Minia University - Egypt
N3-TS2 299	NUMERICAL SIMULATION OF WAVE ENERGY PRODUCTION THROUGH EXPERIMENTAL TOOL Alessia Viola(1), Domenico Curto(2 (1) Federal University of São Paulo, (2) University of Palermo
N3-TS2 269	IMPLEMENTATION OF SOLAR PV - BATTERY STORAGE USING DVR FOR POWER QUALITY IMPROVEMENT Ravi Dharavath Vit University
N3-TS2 143	TOWARDS EFFICIENT IMPLEMENTATION OF SOLAR PLANTS: A PRIORITY ANALYSIS THROUGH MULTI-CRITERIA DECISION APPROACH Farivar Fazelpour, Alireza Tajeddin, Elham Roohi Islamic Azad University - South Tehran Branch
N3-TS2 633	NONLINEAR CONTROL OF A SINGLE PHASE SHUNT ACTIVE FILTER CONNECTED PHOTOVOLTAIC SYSTEMS VIA SLIDING MODE Aicha Elallali(1), Abdelmajid Abouloifa(1), Chaimaa Taghzaoui(1), Youssef Mchaouar(1), Abdellatif Hamdoun(1), Ibtissam Lachkar(2) (1) LTI Lab. FSBM - Hassan II University of Casablanca, (2) LRI Lab. ENSEM - Hassan II University of Casablanca



TECHNICAL SESSION 44 (N3-TS3)

ELECTRICAL MACHINES
AND POWER CONVERTERS - 3
Session Chair: Alberto Reati
University of Florence
Friday June 9th, 2017 | 11:30 – 13:30
Venue: Room Agnesi

N3-TS3 479	COMPARATIVE STUDY OF CONVENTIONAL SVPWM ALGORITHMS IN TERMS OF PRODUCING HARMONICS AND THE EFFECT OF THE HARMONICS ON INDUCTION MOTOR Payam Farhadi(1), Farshid Abdolahnejad Baroogh(2), Milad Gheydi(3) (1) Islamic Azad University - Parsabad Moghan, (2) Semnan University, (3) Islamic Azad University - Tehran
N3-TS3 524	SHORT-CIRCUIT ANALYSIS IN THREE-PHASE QUASI-Z-SOURCE INVERTER Mokhtar Yaghoubi(1), Javad Shokrollahi Moghani(1), Negar Noroozi(2), Mohammad Reza Zolghadri(2) (1) Amirkabir University of Technology, (2) Sharif University of Technology
N3-TS3 627	A NOVEL MODULATION METHOD FOR REDUCING COMMON MODE VOLTAGE IN THREE-PHASE INVERTERS Negar Noroozi, Mohammad Reza Zolghadri, Mokhtar Yaghoubi Sharif University of Technology
N3-TS3 619	A HIGHF FREQUENCY MODELING OF AC MOTOR IN FREQUENCY RANGE FROM 40 HZ TO 110 MHZ H. Miloudi(1), A. Bendaoud(1), M. Miloudi(1), S. Dickmann(2), S. Schenke(2) (1) Djilali Liabes University, (2) Helmut Schmidt University
N3-TS3 639	FPGA-BASED HARDWARE-IN-THE-LOOP SYSTEM BITS CAPACITY EVALUATION BASED ON INDUCTION MOTOR MODEL Mikhail Mudrov(1)(2), Anatolii Ziuzev(1), Konstantin Nesterov(1), Stanimir Valtchev(2) (1) Ural Federal University, (2) Univ. Nova of Lisbon
N3-TS3 631	SPEED CONTROL OF A DC MOTOR USING A FRACTIONAL ORDER SLIDING MODE CONTROLLER Saeed Heidarpoor, Mohammad Tabatabaei, Hamed Khodadadi Islamic Azad University - Isfahan
N3-TS3 597	ACCURATE ANALYSIS OF A SINGLE-PHASE DUAL ACTIVE BRIDGE CONVERTER FOR ZVS AND DEADBAND CONDITIONS Farzad Yazdani(1), Saeid Haghbin(2), Mohammad Reza Zolghadri(1), Torbjorn Thiringer(2) (1) Sharif University of Technology, (2) Chalmers University of Technology



TECHNICAL SESSION 45 (N3-TS4)

RELIABILITY AND SAFETY IN OPERATION OF POWER SYSTEMS Session Chair: Heiko Thimm Pforzheim University

Friday June 9th, 2017 | 11:30 – 13:30 Venue: Room Caccia Dominioni

N3-TS4 392	MICROSTRUCTURE	OBSERVATION (OF ZINC	OXIDE	EXPOSED
	TO THEDAKAL AND	AC EIEI D CTDECC	:EC		

P. Mabonda, Pitshou Bokoro

University of Johannesburg

A NEW MODEL OF PROCESSES VISIBILITY FOR RELIABILITY AND LOSS MANAGEMENT IN ELECTRIC DISTRIBUTION SYSTEM N3-TS4 029

Mohammad Esmaeil Honarmand, Mohammad Sadegh Ghazaizadeh Shahid Beheshti University, Shahid Abbaspour Pardis - Tehran

N3-TS4 167 **FAULT CURRENT LIMITER VERSUS SERIES REACTOR**

Haidar Samet(1), Teymoor Ghanbari(1), Mohammad Amin Jarrahi(1), Abdorasoul Ahmadi Beni(2),

Bahram Kolkian(2), Arash Ebtia(2), Mohammad Reza Banaeian Mofrad(2) (1) Shiraz University, (2) Mobarakeh Steel Company - Isfahan

N3-TS4 158 A FAULT LOCATION METHOD

FOR FEEDER AUTOMATION BASED ON FAULT PROBABILITY
Yufeng Lin, Mingjie Sun, Yiyun Guo, Wei Zhang, Yongzhi Chen, Yuhang Xu, Junyan Gao
State Grid Zhejiang Electric Power Company

N3-TS4 090

A BINARY PROGRAMMING MODEL FOR SAIFI CONSIDERING PROTECTIVE DEVICE FAILURE Al Osiris F. Ingking, Russel John C. Gallano, Adonis Emmanuel DC. Tio

University of the Philippines Diliman

N3-TS4 577

CONTROL OF SOLID-STATE FAULT CURRENT LIMITER FOR DG-INTEGRATED DISTRIBUTION SYSTEMS

Jaser Sa'ed(1), Mahran Quraan(1), Muhammad Abu-Khaizaran(1), Salyatore Favuzza(2), Fabio Massaro(2)

(1) Birzeit University, (2) University of Palermo

N3-TS4 410

RELIABILITY ASSESSMENT OF UHVDC TRANSMISSION SYSTEM BASED ON BIPOLE SYMMETRY
Xing Jiang(1), Huahua Wu(2), Jun Zhang(2), Yi Ding(1), Yonghua Song(1), Pierluigi Siano(3)

(1) Zhejiang University – China, (2) State Grid Zhejiang Electric Power Company, (3) University of Salerno





TECHNICAL SESSION 46 (N3-TS5)

POWER SYSTEMS: TRANSMISSION GRIDS COMPONENTS AND OPERATION - 2
Session Chair: Hamed Jafariperini
Politecnico di Milano

Friday June 9th, 2017 | 11:30 – 13:30 Venue: Room Cavaliere

N3-TS5 408 **DETECTION OF NON-TECHNICAL LOSSES USING ADVANCED METERING** INFRASTRUCTURE AND DEEP RECURRENT NEURAL NETWORKS

Soham Chatterjee, Vaidheeswaran Archana, Karthik Suresh, Rohit Saha. Raghav Gupta, Fenil Doshi

SRM University

N3-TS5 087 **NEUTRAL EARTHING REACTOR PROTECTION**

Krzysztof Dobrzynski, Zbigniew Lubosny, Jacek Klucznik, Stanislaw Czapp Gdansk University of Technology

N3-TS5 091

RESONANCE PROBLEMS IN UHV TRANSMISSION LINES
Jacek Klucznik, Zbigniew Lubosny, Krzysztof Dobrzynski, Stanislaw Czapp

Gdansk University of Technology

N3-TS5 483 **OPTIMIZING LINE POWER FLOWS BY SERIES CAPACITOR PLACEMENT**

Samiya Zafar, Muhammad Ali Memon

NED University of Engineering and Technology

COORDINATION OF DIRECTIONAL OVERCURRENT RELAYS THAT USES AN ANT COLONY OPTIMIZATION ALGORITHM N3-TS5 527

FOR MIXED-VARIABLE OPTIMIZATION PROBLEMS

Angel Labrador Rivas, Luis Gallego Pareja

State University of Londrina

OPTIMIZING LINE POWER FLOWS BY SHUNT CAPACITOR PLACEMENT USING SYNCHROPHASOR TECHNOLOGY N3-TS5 482

Samiya Zafar, Muhammad Ali Memon NED University of Engineering and Technology





TECHNICAL SESSION 47 (N3-TS6)

SMART BUILDINGS, LIGHTING, METERING, DEMAND SIDE MANAGEMENT - 2

Session Chair: **Francesco Grimaccia** Politecnico di Milano

Friday June 9th, 2017 | 11:30 – 13:30 Venue: Room Marinetti

N3-TS6 055 **ESTIMATION OF OPTIMAL LOCATIONS**

FOR ELECTRIC VEHICLE CHARGING STATIONS

Mehmet Cem Catalbas, Merve Yildirim, Arif Gulten, Hasan Kurum

Firat University

THE INFLUENCE OF SHADING IN TERMS OF THE ENERGY PERFORMANCE OF PHOTOVOLTAIC PANELS IN ROMANIAN CLIMATE CONDITIONS N3-TS6 378

Alexandra Danu(1), Adrian Badea(2), Vladimir Tanasiev(1), Roxana Patrasu(1), Eduard Minciuc(1) (1) University Politehnica of Bucharest, (2) Academy of Romanian Scientists (AOSR) - Bucharest

N3-TS6 687

HOME AND BUILDING AUTOMATION THROUGH SOCIAL NETWORK Luis Basaca-Preciado(1), Alvaro Moreno-Partida(1), Juan Terrazas-Gaynor(1), Miguel Ponce Camacho(1), Josue Lopez, Julio Rodriguez-Quiñonez(2), Wendy Flores Fuentes(2), Oleg Sergiyenko(2) (1) CETYS University, (2) Autonomous University of Baja California

N3-TS6 235

USE OF VALUE STREAM MAPPING FOR EVALUATION OF LOAD CONSERVATION AND PEAK CLIPPING POSSIBILITIES

Raivo Melsas, Argo Rosin

Tallinn University of Technology

SUSTAINABLE CAMPUS: RENOVATION OF LIGHTING FIXTURES FOR THE REDUCTION OF CO2 EMISSIONS N3-TS6 220

Sonia Leva, Fabiana Satta, Alberto Dolara Politecnico di Milano





TECHNICAL SESSION 48 (A3-TS1)

A3-TS1 543

COMBINING WAVELET TRANSFORM AND SUPPORT VECTOR REGRESSION MODEL FOR DAY-AHEAD PEAK LOAD FORECASTING IN THE GREEK POWER SYSTEM Ioannis Panapakidis(1), George Christoforidis(2), Nikolaos Asimopoulos(2), Athanasios Dagoumas(3)

(1) T.E. I of Thessaly Larissa, (2) Western Macedonia University of Applied Sciences, (3) University of Praeus

A3-TS1 059

THE ISSUE OF UNIT CONSTRAINTS AND THE NON-CONFISCATORY ELECTRICITY MARKET Mazaher Hajibashi(1), Iman Rahmati(1), Claus Leth Bak(2), Jaiakrishnan Radhakrishna Pillai(2) (1) Isfahan University of Technology, (2) Aalborg University

A3-TS1 252

AN INTEGRATED COMBINATORIAL AUCTION METHOD FOR THE CO-ALLOCATION OF ENERGY AND RESERVES IMPLEMENTED ON A TWO-LEVEL TIME SCALE Dávid Csercsik Pázmány Péter Catholic University Budapest

A3-TS1 328

MODELLING THE MEDIUM TERM DEREGULATED POWER MARKET
BASED ON THE COURNOT GAME THEORY
Mohammad Tolou Askari
Islamic Azad University Semnan

A3-TS1 568

DIMINISHING COST OF ELECTRICITY FROM WIND POWER AND PHOTOVOLTAICS
Alessandro Massi Pavan(1), Vanni Lughi(2), Paolo Rosato(2), Filippo Spertino(3), Silvano Vergura(4)
(1) University of Manchester, (2) University of Trieste, (3) Politecnico di Torino, (4) Politecnico di Bari

A3-TS1 210 REGULATION ISSUES FOR RENEWABLE ENERGY INTEGRATION INTO ELECTRICAL MARKETS

Jorge Llamas, David Bullejos, Vicente Barranco, Manuel Ruiz de Adana
Universidad de Córdoba

A3-TS1 517

PLANNING OF LOW-VOLTAGE DISTRIBUTION SYSTEMS WITH UNCERTAINTY ON LOAD DEMAND IN URBAN AREAS Vannak Vai(1), Egor Gladkikh(1), Marie-Cecile Alvarez-Herault(1), Bertrand Raison(1), Long Bun(2)
(1) Grenoble Institute of Technology (Grenoble-INP),
(2) Institute of Technology of Cambodia (ITC)



TECHNICAL SESSION 49 (A3-TS3)

RENEWABLE ENERGY SOURCES IN POWER SYSTEMS, DISTRIBUTED GENERATION - 5 Session Chair: Silvia Canevese RSE

A3-TS2 040 SECOND ORDER SLIDING MODE CONTROLLER

Friday June 9th, 2017 | 15:00 - 17:00 Venue: Room S. Carlo Borromeo

	Oscar Barambones, Jose Gonzalez de Durana University of the Basque Country
A3-TS2 329	ADAPTIVE SLIDING MODE CONTROL SCHEME FOR A WAVE POWER GENERATION PLANT Oscar Barambones, Jose Cortajarena, Patxi Alkorta, Jose Gonzalez de Durana, Isidro Calvo, Jose Ramos University of the Basque Country
A3-TS2 365	MVT CONTROLLED VOLTAGE RESTORER FOR FAULT-RIDE THROUGH CAPABILITY Mustafa Inci(1), Mehmet Büyük(1), Adnan Tan(1), Kamil Çağatay Bayındır(2), Mehmet Tümay(1 (1) Çukurova Üniversity, (2) Yıldırım Beyazıt Üniversity
A3-TS2 629	STATE-FEEDBACK NONLINEAR CONTROL OF THREE-PHASE GRID CONNECTED TO THE PHOTOVOLTAIC SYSTEM Chaouqi Abodelmajid Abouloifa, Meriem Aourir, Yasser Boussairi, Abdellatif Hamdoun, Ibtissam Lachkar University Hasan II of Casablanca
A3-TS2 044	OPTIMAL COST ANALYSIS STUDY OF STAND-ALONE RENEWABLE ENERGY SYSTEMS FOR SCRUBLAND AREA IN EGYPT Mohamed Samy(1), Shimaa Barakat(2) (1) University of Albaha, (2) Beni-Suef University



TECHNICAL SESSION 50 (A3-TS3)

ELECTRICAL MACHINES
AND POWER CONVERTERS - 4
Session Chair: Alberto Reatti
University of Florence
Friday June 9th, 2017 | 15:00 - 17:00
Venue: Room Agnesi

A3-TS3 135 MEASUREMENT AND EVALUATION OF DC MOTOR STARTING TORQUE Radoslav Cipin, Martin Mach, Marek Toman, Jan Knobloch Brno University of Technology IMPACT OF MANUFACTURING PROCESS ON OPTIMAL SHAPE OF INDUCTION MACHINE SLOTS A3-TS3 288 Martin Mach, Radoslav Cipin, Marek Toman, Vitezslav Hajek Brno University of Technology A3-TS3 070 **DETECTION OF BROKEN ROTOR BARS IN SQUIRREL CAGE** INDUCTION MOTORS BY AMPLIFYING FAULT HARMONICS Majid Malekpour, Toan Phung, Eliathamby Ambikairajah University of New South Wales, Sydney A3-TS3 120 A VIEW ON HUMIDITY EFFECTS IN HIGH VOLTAGE ELECTRIC GENERATOR'S INSULATION Christina Panagiota Malliou, Athanasios Karlis, Michael Danikas Democritus University of Thrace A3-TS3 733 CONTROLLER IMPLEMENTATION FOR A BIDIRECTIONAL NON-ISOLATED BUCK-BOOST CONVERTER WITH HIGH VOLTAGE GAIN IN ELECTRIC VEHICLE APPLICATION
Geetha Anbazhagan(1), C. Subramani(1), S.S. Dash(1), P. Sanjeevikumar(2), Zbigniew Leonowicz(3)
(1) SRM University, (2) University of Johannesburg,
(3) Wrocław University of Science and Technology A3-TS3 100 CLASS-E DC-AC RESONANT INVERTER DESIGN CENTERING Marcantonio Catelani(1), Lorenzo Ciani(1), Fabio Corti(1), Antonio Luchetta(1), Stefano Manetti(1), Maria Cristina Piccirilli(1), Alberto Reatti(1), Marian Kazimierczuk(2), Aghasthya Ayachit(2) (1) University of Florence, (2) Wright State University



TECHNICAL SESSION 51 (A3-TS4)

CIRCUITS, SENSORS, ACTUATORS, ELECTROMAGNETIC COMPATIBILITY

Session Chair: **Alessandro Burgio** University of Calabria

Friday June 9th, 2017 | 15:00 - 17:00 Venue: Room Caccia Dominioni

A3-TS4 045

CONDUCTOR SURFACES OF ULTRA HIGH VOLTAGE TRANSMISSION LINES Mohamed Samy(1), Roshdy, Radwan(1), Samar Akef(2) (1) University of Albaha, (2) University of Cairo A3-TS4 249 A PARTICLE SWARM OPTIMIZATION APPROACH FOR SLIDING MODE CONTROL OF ELECTROMECHANICAL VALVE ACTUATOR IN CAMLESS INTERNAL COMBUSTION ENGINES Roozbeh Samani, Hamed Khodadadi Islamic Azad University - Isfahan A3-TS4 277 CONTRIBUTION TO EMC MODELING OF DC-DC CONVERTERS Bouzid Karouche (1), Mohamed Bensetti (2), Abd Elhalim Zaoui (1) (1) Ecole Militaire Polytechnique, (2) Centrale Supelec, Univ. Paris-Sud, Sorbonne Universités AN IMPROVED ANALOG MAXIMUM POWER POINT TRACKING CIRCUIT FOR SOLAR CELLS SUITABLE FOR ABRUPT VARIATIONS IN IRRADIATION LEVELS Sergio Romero-Camacho(1), Victor González Díaz(1), Roberto Ambrosio-Lázaro(1), Gerardo Mino-Aguillar(1), Edoardo Bonizzoni(2), Franco Maloberti(2) (1) Autonomous University of Puebla, (2) University of Pavia A3-TS4 171 A NEW LINEARIZED BEHAVIORAL MODEL FOR SOLAR CELLS Sergio Romero-Camacho(1), Víctor González Díaz(1), Roberto Ambrosio-Lázaro(1), Gerardo Mino-Aguilar(1), Edoardo Bonizzoni(2), Franco Maloberti(2) (1) Autonomous University of Puebla, (2) University of Pavia A3-TS4 170

CALCULATION OF ELECTRIC FIELDS UNDERNEATH AND ON

NOVEL NANOCOMPOSITE CLAY BRICK FOR STRAIN SENSING IN STRUCTURAL MASONRY A3-TS4 302

Filippo Ubertini(1), Antonella D'Alessandro(1), Annibale Materazzi(1),

Simon Laflamme(2), Austin Downey(2) (1) University of Perugia, (2) Iowa State University





A3-TS5 406	DEMAND RESPONSE FROM MULTIPLE-ENERGY CUSTOMERS IN INTEGRATED ENERGY SYSTEM Changzheng Shao(1), Yi Ding(1), Chengzhi Zhu(2), Yonghua Song(1) (1) Zhejiang University, (2) State Grid Zhejiang Electric Power Company - Hangzhou, China
A3-TS5 407	CLASSIFICATION AND MANAGEMENT OF ELECTRICITY MARKET CUSTOMER CONSIDERING DEMAND RESPONSE IN CHINA Peng Wang, Pengyu Zhang North China Electric Power University
A3-TS5 409	OPTIMAL DAY-AHEAD AND INTRA-DAY SCHEDULING OF ENERGY AND OPERATING RESERVE CONSIDERING FLUCTUATING WIND POWER Xinhong You(1), Huahua Wu(2), Jun Zhang(2), Shanhong Jin(2), Yi Ding(1), Pierluigi Siano(3) (1) Zhejiang University, (2) State Grid Zhejiang Electric Power Company, Hangzhou China, (3) University of Salerno
A3-TS5 349	DEMONSTRATION OF FRIENDLY INTERACTIVE GRID UNDER THE BACKGROUND OF ELECTRICITY MARKET REFORM IN CHINA Hongxun Hui(1), Xing Jiang(1), Yi Ding(1), Yonghua Song(1), Li Guo(2) (1) Zhejiang University, (2) State Grid Jiangsu Economic Power Company
A3-TS5 244	COMPARATIVE ANALYSIS OF MONITORED AND SELF-REPORTED DATA ON ELECTRICITY USE Kiti Suomalainen(1), Michael Jack(1), David Eyers(1), Rebecca Ford(2), Janet Stephenson(1) (1) University of Otago, (2) University of Oxford
A3-TS5 405	VPP DISTRIBUTED ENERGY MANAGEMENT MECHANISM IN HYBRID ENERGY INTERNET Jie Yu(1)(2), Yu Liao(2)(3), Junqi Liu(2)(3), Min Sun(4) (1) Southeast University Nanjing, (2) Tellhow Sci-Tech Lt. Co. Shanghai, (3) SEU-Tellhow Smart Energy Innovation Research Center Nanjing, (4) State Grid Jiangxi Electric Power Company Nanchang
A3-TS5 541	A NOVEL DEMAND SIDE MANAGEMENT STRATEGY IMPLEMENTATION UTILIZING REAL-TIME PRICING SCHEMES Ioannis Panapakidis(1), George Christoforidis(2), Nikolaos Asimopoulos(2), Athanasios Dagounas(3) (1) Technological Education Institution of Thessaly, (2) Western Macedonia University of Applied Sciences, (3) University of Piraeus



TECHNICAL SESSION 53-54-55-56 (CRS)

CHAIRED REMOTE SESSION Session Chair: Zbigniew Leonowicz University of Wrodaw, Poland

Saturday/Sunday, June 10th - 11st, 2017 | 10:00 to the end

CRS 358	SELECTIVE HARMONIC ELIMINATION FOR A 27-LEVEL ASYMMETRIC MULTILEVEL CONVERTER Javier Munoz(1), Ignacio Torres(1), Johan Guzman(1), Carlos Baier(1), Pedro Melin(2), Jaime Rohten(2), Jose Espinoza(3), Jose Silva(3) (1) Universidad de Talca, (2) Universidad del Bío-Bío - Concepción, (3) Universidad de Concepción - Concepción
CRS 332	IMPACT OF TRANSMISSION LINE MUTUAL INDUCTANCE ON TRANSMISSION LOSS/COST ALLOCATION IN DEREGULATED ELECTRICITY MARKET K. Shafeeque Ahmed, S.Prabhakar Karthikeyan VIT University
CRS 677	REAL TIME IMPLEMENTATION OF NON-DFT BASED THREE PHASE PHASOR MEASUREMENT UNIT AS PER IEEE STANDARD C37, 118.1 Syed Akif Ali, Narmeen Aamir, Muhammad Sayem Suleman, Wajiha Hasan, Manaal Shaikh, Muhammad Ali Memon NED University of Engineering & Technology
CRS 497	ASSESSMENT OF E-VEHICLES AVAILABILITY IN CHARGING POOL FOR SUPPORT SERVICES IN SMART GRIDS. CASE STUDY BASED ON REAL DATA Erik Blasius(1), Erik Federau(1), Zbigniew Leonowicz(2), Przemysław Janik(2) (1) Brandenburg University of Technology Cottbus-Senftenberg, (2) Wrocław University of Science and Technology
CRS 618	ANALYSIS OF SUPRA-HARMONICS IN SMART GRIDS Turgay Yalcin(1), Muammer Ozdemir(1), Pawel Kostyla(2), Zbigniew Leonowicz(2) (1) Ondokuz Mayis University, (2) Wrocław University of Science and Technology
CRS 654	LONG TERM PERFORMANCE OF A PV SYSTEM WITH MONOCRYSTALLINE PV CELLS – A CASE STUDY Dominika Kaczorowska, Zbigniew Leonowicz, Jacek Rezmer, Przemyslaw Janik Wrocław University of Science and Technology
CRS 556	AN ALTERNATIVE SOLUTION FOR THE MULTIPLE ESTIMATION PROBLEM USING FUZZY SETS Jean Rossini, Patrick Farias, Adriano Morais, Ghendy Junior, Guilherme Costa Federal University of Santa Maria
CRS 662	A COMPARATIVE ANALYSIS OF LOSS OF EXCITATION PROTECTION METHODS FOR SYNCHRONOUS GENERATORS Mairon Gallas, Adriano Morais, Adriano Marchesan, Ghendy Junior, Guilherme Costa Federal University of Santa Maria
CRS 663	CURVE FITTING ANALYSIS OF TIME-CURRENT CHARACTERISTIC OF EXPULSION FUSE LINKS Guilherme Costa, Adriano Marchesan, Adriano Morais, Ghendy Cardoso Junior, Mairon Gallas Federal University of Santa Maria

CRS 214	REVIEW OF LOSS OF EXCITATION PROTECTION SETTING AND COORDINATION TO THE GENERATOR CAPACITY CURVE Maria Dolores Lopez, Carlos A. Platero, Pablo Mayor de Bergia, Ricardo Granizo Arrabé Technical University of Madrid
CRS 166	PV POWER HARVESTING SCHEME FOR NANOGRID APPLICATIONS USING METEOROLOGICAL DATA Mohamed Azab Benha University, Egypt
CRS 236	FLEXIBLE PQ CONTROL FOR SINGLE-PHASE GRID-TIED PHOTOVOLTAIC INVERTER Mohamed Azab Benha University, Egypt
CRS 292	OPTIMAL REACTIVE POWER DISPATCH PROBLEM SOLVED BY AN IMPROVED COLLIDING BODIES OPTIMIZATION ALGORITHM P. Anbarasan, T. Jayabarathi VIT University
CRS 528	CONDITION MONITORING OF CIRCUIT BREAKERS: CURRENT STATUS AND FUTURE TRENDS Behnam Feizifar, Omer Usta Istanbul Technical University
CRS 609	GLOBAL SENSITIVITY AND CRITERION PERFORMANCE ANALYSIS OF TRANSFORMER LEAKAGE INDUCTANCE TO WINDING DEFORMATION Yan Li(1), Tinghua Wang(1), Zhengping Gao(1), Hejun Huang(1), Hao Wu(2), Sheng Zou(1), Teng Li(1), Xuanjun Zong(1) (1) Nanjing Electric Power Engmeering Design Co., Ltd, China, (2) North China Electric Power University Baoding
CRS 047	TOPOLOGIES OF THYRISTOR CONTROLLED REACTOR WITH REDUCED CURRENT HARMONIC CONTENT FOR STATIC VAR COMPENSATORS Dmitry Panfilov(1), Ahmed ElGebaly(2), Michael Astashev(3) (1) Moscow Power Engineering Institute, (2) Tanta University, Egypt, (3) G. M. Krzhizhanovsky Power Engineering Institute (JSC ENIN) - Moscow
CRS 548	RESEARCH OF CONTROLLED PHASE SHIFTER OPERATION ON A PHYSICAL MODEL OF THE TRANSMISSION LINE Dmitry Panfilov(1), Alexander Rozhkov(1), Michael Astashev(2) (1) Moscow Power Engineering Institute, (2) Krzhizhanovsky power engineering institute (JSC ENIN) - Moscow
CRS 163	NOVEL PROTECTION METHOD FOR DETECTION OF GROUND FAULTS IN CABLES USED IN COMBINED OVERHEAD-CABLE LINES IN POWER SYSTEMS Ricardo Granizo Arrabé, Carlos A. Platero, Fernando Alvarez Gómez, Marta Redondo Cuevas Universidad Politécnica de Madrid
CRS 065	TOWARDS A REAL-TIME FAULT IDENTIFICATION AND SELF-HEALING SYSTEM IN THE DISTRIBUTION NETWORK Yufeng Lin, Mingjie Sun, Yiyun Guo, Yongzhi Chen, Junyan Gao, Xiaowen Yu, Juanjuan Li, Bo Hong, Hongkun Chen, Yanwen Wu, Feixiang Huang, Jibin Lin, Fengyuan Zheng, Da Li, Xiaohui Wang, Dele Huang, Meijiao Zheng State Grid Xiamen Electric Power Supply Company - Xiamen, China
CRS 710	ANALYSIS AND SIMULATION OF VOLTAGE SAGS USING EMTP Dung Vo Tien(1), Radomir Gono(1), Zbigniew Leonowicz(2) (1) VSB-TUO Technical University of Ostrava, (2) Wrocław University of Science and Technology
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