

**2017 AEIT International Annual Conference**  
**September 20-22, 2017**  
**Cagliari, Italy**

**TECHNICAL PROGRAMME**

**Wednesday, September 20th, 2017**

**8,30-10,00 Registration**

**10,00-10,30 Welcome Statements**

**10,30-11,45**

**Room A PANEL Energy and ICT: a Driver for Industrial Development**

**11,45-13,15 Technical Parallel Sessions**

**Room A**

**Session A1 Methods, Components and Technologies for Transmission and Distribution I**

**Chair:** Fabrizio Pilo - Università di Cagliari

**A1\_01 Co-simulation Aspects for Energy Systems with High Penetration of Distributed Energy Resources**

Milos Cvetkovic, Kaikai Pan, Claudio David López, Rishabh Bhandia, Peter Palensky - Delft University of Technology, The Netherlands

**A1\_02 Generation of Artificial Distribution Networks for the Evaluation of Advanced Control Solutions**

Giacomo Viganò, Marco Rossi, Diana Moneta - RSE - Ricerca sul Sistema Energetico, Italy

**A1\_03 Stochastic evaluation of Distribution Network Hosting Capacity: Evaluation of the Benefits introduced by Smart Grid Technology**

Marco Rossi, Giacomo Viganò, Diana Moneta, Daniele Clerici - RSE - Ricerca sul Sistema Energetico, Italy

**A1\_04 Interoperability of Phasor Measurement Units under Voltage Unbalance Conditions**

Paolo Castello, Carlo Muscas, Paolo Attilio Pegoraro - University of Cagliari, Italy, Pietro Pau, Guido Guida, Giorgio Giannuzzi - Terna, Italy

**A1\_05 Voltage Management Strategies for Low Voltage Networks supplied through Phase-Decoupled On-Load-Tap-Changer Transformers**

Andrea Bettanin, Massimiliano Coppo, Andrea Savio, Roberto Turri - University of Padova, Italy

**Room B**

**Session B1 Distributed Systems and Technologies for Smart Cities: Issues and Emerging Solutions I**

**Chair:** Stefano Rinaldi - University of Brescia

**Session organizers:** Lucia Lo Bello - University of Catania and Stefano Rinaldi - University of Brescia

**B1\_01 Community Involvement in Urban Maintenance Prioritization**

Fulvio Re Cecconi, Nicola Moretti, Mario C. Dejacco, Sebastiano Maltese - Politecnico di Milano, Italy, Lavinia Chiara Tagliabue - University of Brescia, Italy

**B1\_02 "Better Together": towards a Cognitive Campus Network of Universities**

Franz Bittenbinder, Che Liu, Enrico De Angelis - Politecnico di Milano, Italy, Lavinia Chiara Tagliabue, Paolo Bellagente, Angelo Luigi Camillo Ciribini - University of Brescia, Italy

**B1\_03 Preliminary Performance Monitoring Plan for Energy Retrofit: a Cognitive Building**

Giuseppe Desogus, Emanuela Quaquero, Antonello Sanna, Gianluca Gatto - University of Cagliari, Italy, Giuseppe Di Giuda - Politecnico di Milano, Italy, Lavinia Chiara Tagliabue, Stefano Rinaldi, Angelo Luigi Camillo Ciribini - University of Brescia, Italy, Valentina Villa - Politecnico di Torino, Italy

**B1\_04 Refurbishment and School Buildings Management in a Smart Building Environment**

Giuseppe Martino Di Giuda, Paolo Ettore Giana - Politecnico di Milano, Italy, Valentina Villa - Politecnico di Torino, Italy, Lavinia Chiara Tagliabue, Stefano Rinaldi, Angelo Luigi Camillo Ciribini - University of Brescia

## **Room C**

### **Session C1 Cyber Security**

**Chair:** Giorgio Giacinto - AEIT Sezione Sarda and University of Cagliari

#### **C1\_01 Tor Traffic Analysis and Identification**

Francesco Mercaldo, Fabio Martinelli - CNR-IIT, Italy

#### **C1\_02 Post-quantum Cryptography based on Codes: State of the Art and Open Challenges**

Marco Baldi, Paolo Santini, Giovanni Cancellieri - Università Politecnica delle Marche, Italy

#### **C1\_03 Detecting Attacks to internal Vehicle Networks through Hamming Distance**

Dario Stabili, Mirco Marchetti, Michele Colajanni - University of Modena and Reggio Emilia, Italy

#### **C1\_04 Twitter Analysis for Real-time Malware Discovery**

Federico Concone, Alessandra De Paola, Giuseppe Lo Re, Marco Morana - University of Palermo, Italy

#### **C1\_05 Security in Cyber-Physical Production Systems**

Edgar Weippl, Peter Kieseberg - SBA Research, Austria

### **13,15-14,00 Lunch**

### **14,00 14,15 AEIT National Task Force**

Emilio Marino – AEIT National Task Force

### **14.15 14.30 to be def**

Monica Crosa di Vergagni – AEIT Sezione Ligure

### **14,30-16,00 Technical Parallel Sessions**

#### **Room A**

### **Session A2 Methods, Components and Technologies for Transmission and Distribution II**

**Chair:** Enrico Maria Carlini – Terna Rete Elettrica Nazionale

#### **A2\_01 Detection of Cross-Country Fault in Medium Voltage Distribution Ring Lines**

Asia Codino, Fabio Massimo Gatta, Alberto Geri, Stefano Lauria, Marco Maccioni - Sapienza University of Rome, Italy, Roberto Calone - e-distribuzione, Italy

#### **A2\_02 Fault Location in Unearthed 60 kV Subtransmission Network based on the Travelling Wave Method**

Roberto Benato, Sebastian Dambone Sessa, Giovanni Rinzo - University of Padova, Italy, Michele Poli, Cristiano Quaciari - Terna, Italy

#### **A2\_03 Terna's Approach for on-line Monitoring System**

Massimo Rebolini, Andrea Valant, Francesco Maria Pepe – Terna Rete Italia, Italy

#### **A2\_04 Italian National Resilience Plan 2017**

Fabio Ciasca, Alessio Sallati, Niccolo' Tolu - Terna Rete Elettrica Nazionale, Italy

#### **A2\_05 Italy's National Energy Strategy**

Luigi Michi, Enrico Maria Carlini, Stefania Ratti - Terna Rete Elettrica Nazionale, Italy

#### **A2\_06 Managing European Resource Adequacy: Success and Challenges**

Luigi Michi, Enrico Maria Carlini, Simone Biondi, Pietro Capurso, Mario Santoro - Terna Rete Elettrica Nazionale, Italy

#### **Room B**

### **Session B2 Distributed Systems and Technologies for Smart Cities: Issues and Emerging Solutions II**

**Chair:** Lucia Lo Bello - University of Catania

**Session organizers:** Lucia Lo Bello - University of Catania and Stefano Rinaldi - University of Brescia

#### **B2\_01 On the Use of LPWAN for EVehicle to Grid Communication**

Paolo Ferrari, Alessandra Flammini, Stefano Rinaldi, Mattia Rizzi, Emiliano Sisinni - University of Brescia, Italy

#### **B2\_02 A Data-Mining Approach for Energy Profiling Characterization of Urban Building Archetypes**

Mario Favalli Ragusini, Giovanni Tardioli - IES, Ireland, Lavinia Chiara Tagliabue, Stefano Rinaldi, Angelo Luigi Camillo Ciribini - University of Brescia, Italy

#### **B2\_03 Capturing Citizens' Emerging Needs Using Social Networks in Smart Cities**

Valeria Seidita, Antonio Chella, Maurizio Carta – University of Palermo, Italy

## **Room C**

### **Session C2 Sustainability I**

**Chair:** Giovanni Cancellieri - AEIT

#### **C2\_01 Relationship between Sustainability and Quality in Products and Management Systems**

Vittorio Cecconi – AEIT- ASTRI

#### **C2\_02 Tecno-Economic and Environmental Assessment of a Full Electric Smart City Eco-District**

Michele Garau, Emilio Ghiani, Gianni Celli, Fabrizio Pilo - University of Cagliari, Italy

#### **C2\_03 Conscious Involvement of the Territory in the National Electricity Transmission System Grid Development**

Adel Motawi - Terna, Italy

#### **C2\_04 Transparency in Transactive Energy at Distribution Level**

Maria Luisa Di Silvestre, Luigi Dusonchet, Salvatore Favuzza, Mariano Giuseppe Ippolito, Stefano Mangione, Fabio Massaro, Liliana Mineo, Eleonora Riva Sanseverino, Enrico Telaretti, Gaetano Zizzo - University of Palermo, Italy

## **16,00-16,15 Break**

### **16,15-17,15 Room A Case Histories and Best Practices from Industries, Universities; Research Centers**

#### **Long Term Scenarios for the Italian Electric System**

## **17,15-18,45 Technical Parallel Sessions**

### **Room A**

#### **Session A3 Methods, Components and Technologies for Transmission and Distribution III**

**Chair:** Massimo Rebolini - CIGRE' and Terna Rete Italia

#### **A3\_01 Temporary Overvoltage Mitigation in Symmetrical Monopole VSC-MMC HVDC Links**

Francesco Palone, Massimo Marzinotto, Luca Buono – Terna Rete Italia, Italy

#### **A3\_02 Overall Availability Assessment of HVDC VSC XLPE Cable Symmetrical Monopolar Configuration**

Roberto Benato, A. Chiarelli, Sebastian Dambone Sessa, Domenico Napolitano – University of Padova, Italy

#### **A3\_03 HVDC Technology Overview and new European Network Codes Requirements**

Stefano Barsali, Paolo Pelacchi - University of Pisa, Italy, Fabio Bassi, Gianluca Bruno, Roberto Gnudi – Terna Rete Italia, Italy

#### **A3\_04 Passive Cancellation Loops: Case Study, Model Simulation and Field Test on a real HV Overhead Line in Italy**

Massimo Rebolini, Marco Forteleoni - Terna Rete Italia, Italy, Davide Capra – CESI, Italy

#### **A3\_05 The 2.0 Cost Benefit Analysis and its Application to the National Development Plan 2017**

Corrado Gadaleta - Terna Rete Elettrica Nazionale, Italy

#### **A3\_06 Highly Efficient Overhead Line Innovative Conductors with Reduced Joule Power Losses**

Roberto Benato, Roberto Caldon, Massimiliano Coppo, Sebastian Dambone Sessa - University of Padova, Italy, Michele Previatello, Davide Peroni - DeAngeli Prodotti, Italy

#### **A3\_07 Energy Union is about Reinventing System Operation**

Enrico Maria Carlini, Silvia Ibba, Cristina Pascucci - Terna Rete Elettrica Nazionale, Italy, Silvia Moroni - Terna Rete Italia, Italy

### **Room B**

#### **Session B3 Emerging Technologies**

**Chair:** Concettina Buccella - University of L'Aquila

#### **B3\_01 Testing of a new Control Strategy for Increasing available Energy of Batteries**

Luigi Pellegrino – Ricerca sul Sistema Energetica - RSE, Italy

#### **B3\_02 COLLEGA Semantic Middleware for Collaborative Assistance in Mobile Social Networks**

Danilo Hasse – Federal University of Santa Catarina, Brazil, Carlos Roberto De Rolt – State University of Santa Catarina, Brazil

#### **B3\_03 Visibility Trials of Unmanned Aerial Vehicles (Drones) by commercial X-Band Radar in Sub-urban Environment**

Gaspere Galati, Gabriele Pavan, Francesco De Palo - University of Rome "Tor Vergata", Italy, Daniele Latini – GEO-K, Italy, Francesco Carbone, Fabio Del Frate - University of Rome "Tor Vergata", Italy, Fabio Pietrobono - Free Lance Mechanical Engineer, Italy

**B3\_05 Optimal Demand-Response Operation of Heating and Energy Storage in Smart Buildings**

Gianni Bianchini, Marco Casini, Daniele Pepe, Antonio Vicino, Giovanni Gino Zanvettor - Università di Siena, Italy

**B3\_06 Outdoor Characterisation of High Concentration Photovoltaic Modules**

Malgorzata Gawronska, Carla Sanna - Sardegna Ricerche, Italy, Renato Rizzo – Università di Napoli Federico II, Italy, Mauro Boi, Alfonso Damiano – University of Cagliari, Italy

**Room C**

**Session C3 Sustainability II**

**Chair:** Vittorio Cecconi – AEIT-ASTRI

**C3\_01 Arc-Flash Hazard Calculation**

Giovanni Gambirasio, Domenico Gambirasio - Selecty, Italy

**C3\_02 Economic Assessments on the Use of Wired and Wireless Recharging Systems in Italian and European Market**

Michela Longo, Dario Zaninelli - Politecnico di Milano, Italy, Giovanni Cipriani, Vincenzo Di Dio, Rosario Miceli - University of Palermo, Italy

**C3\_03 Clean Energy Transitions - Strategies, Challenges & Lessons - A Developing Country Perspective**

Sudha Mahalingam - Independent Energy Consultant, India

**C3\_04 Protection is a system not a component**

Giovanni Gambirasio, Domenico Gambirasio - Selecty, Italy

**C3\_05 Selective electromagnetic monitoring of specific sources (MUOS) in Sicily**

Salvatore Caldara, Antonio Sansone Santamaria - Arpa Sicilia, Italy

## Thursday, September 21st, 2017

### 9,00-10,30 Technical Parallel Sessions

#### Room A

#### **Session A4 Methods, Components and Technologies for Transmission and Distribution IV**

**Chair:** Domenico Villacci - ENSIEL - Università del Sannio

#### **A4\_01 Analysis of Real Kilometric Three-Core Armoured Cables by means of an Integral Multiconductor three-dimensional Model**

Roberto Benato, Sebastian Dambone Sessa - University of Padova, Italy

#### **A4\_02 A 4 GW AC submarine Turkish Power Grid Reinforcement under the Dardanelles Strait**

Roberto Benato - University of Padova, Italy, Ibrahim Balanuye, Fatih Koksak, Nurhan Ozan, Ercument Özdemirci - Türkiye Elektrik İletim A. Ş. - TEİAŞ, Turkey

#### **A4\_03 MV Underground Cables: Effects of Soil Thermal Resistivity on anomalous working Temperature**

Luigi Calcara, Silvia Sangiovanni, Massimo Pompili – Sapienza University of Rome, Italy

#### **A4\_04 Power Conversion System Model and Control for Energy Stationary Storage**

Mauro Andriollo, Roberto Benato, Sebastian Dambone Sessa, Francesca Nucci, F. Siviero - University of Padova, Italy, Francesco Palone, Massimo Rebolini - Terna Rete Italia, Italy

#### **A4\_05 Measurement-based Lithium-Manganese Oxide Battery Model**

Roberto Benato, Sebastian Dambone Sessa, Francesco Bevilacqua - University of Padova, Italy, Francesco Palone - Terna Rete Italia, Italy

#### **A4\_06 Innovative Optical Systems and Sensors for on line Monitoring of High Voltage Overhead Lines and Power Components**

Letizia De Maria, Elena Golinelli, Umberto Perini - RSE Research on Energetic System, Italy

#### **A4\_07 Application of Multiterminal HVDC Interconnections in European Transmission Grid**

Morris Brenna, Dario Zaninelli - Politecnico di Milano, Italy

#### Room B

#### **Session B4 Power Electronics**

**Chair:** Giuseppe Gattavari - AEIT-AMES

#### **B4\_01 Design-oriented Analysis of ECOT-controlled DCM/CCM Boundary Boost PFC Pre-regulators**

Claudio Adragna - STMicroelectronics, Italy

#### **B4\_02 Comparison between Harmonic Reduction Procedures for 5-level Inverters**

Concettina Buccella, M. Gabriella Cimatori, Carlo Cecati - University of L'Aquila, Italy, Ebrahim Babaei - University of Tabriz, Iran

#### **B4\_03 A Test Bench for Power Quality Improvement in Microgrids by the Integrating Active Filters and Energy Storage Systems**

Andrea Salimbeni, Mauro Boi, Alessandro Serpi, Alfonso Damiano - Università di Cagliari, Italy

#### **B4\_04 A Novel Modified Central Switch DC-DC Converter for Solar energized SRM driven Irrigation Pump**

Anjaneer Kumar Mishra, Bhim Singh - Indian Institute of Technology, India, Ambrish Chandra, Kamal Al-Haddad - Ecole de technologie supérieure, Canada

#### **B4\_05 Synchronous Rectification with Low Voltage MOSFETs in LLC Converters**

Salvatore Di Mauro, Salvatore Musumeci, Angelo Raciti - University of Catania, Italy, Filadelfo Fusillo, Filippo Scrimizzi, Rosario Scollo - STMicroelectronics, Italy

#### **B4\_06 Super Junction MOSFET in Power Factor Correction Converters**

Salvatore Musumeci, Francesca Portoghese, Angelo Raciti - University of Catania, Italy, Antonino Gaito, Domenico Murabito, Rosario Scollo - STMicroelectronics, Italy

#### **B4\_07 An Efficient Wireless Power Transfer Prototype for Electrical Vehicles**

S. Benanti, M. Caruso, V. Castiglia, V. Cecconi, M. Corpora, V. Di Dio, A.O. Di Tommaso, M. Fricano, F. Genduso, A. Imburgia, A. Madonia, R. Miceli, C. Nevoloso, F. Pellitteri, G. Ricco Galluzzo, P. Romano, G. Schettino, C. Spataro, M. Trapanese, F. Viola – Università di Palermo

## **Room C**

### **Session C4 Internet of Things**

**Chair:** Giovanni Cancellieri - AEIT

#### **C4\_01 Evaluation Methodologies for the NB-IoT System: Issues and ongoing Efforts**

Samuele Foni, Tommaso Pecorella, Romano Fantacci - University of Florence, Italy, Camillo Carlini, Pietro Obino - Telecom Italia, Italy, Maria Gabriella Di Benedetto - Sapienza Università di Roma

#### **C4\_02 NB-IoT and LoRa Connectivity Analysis for M2M/IoT Smart Grids Applications**

Samuela Persia, Claudia Carciofi, Manuel Faccioli - Fondazione Ugo Bordoni, Italy

#### **C4\_03 An Ambient Intelligence System for Assisted Living**

Alessandra De Paola, Pierluca Ferraro, Salvatore Gaglio, Giuseppe Lo Re, Marco Morana, Marco Ortolani, Daniele Peri - University of Palermo, Italy

#### **C4\_04 A LoRa Enabled Building Automation Architecture Based on MQTT**

Susanna Spinsante, Gianluca Ciattaglia, Antonio Del Campo, Davide Perla, Danny Pigni, Giovanni Cancellieri, Ennio Gambi - Università Politecnica delle Marche, Italy

#### **C4\_05 NB-IoT System Deployment for Smart Metering: Evaluation of Coverage and Capacity Performances**

Marco Pennacchioni, Maria Gabriella Di Benedetto - Sapienza University of Rome, Italy, Tommaso Pecorella - University of Florence, Italy, Camillo Carlini, Pietro Obino - Telecom Italia, Italy

### **10,30-10,40 Break**

### **10,40-11,10 Keynote**

#### **Open Meter, the new Generation: Smarter and Customer Oriented**

C. D'Adamo - Responsabile del Progetto Contatore Elettronico e-distribuzione

### **11,00-12,30**

## **Room A PANEL The Role of the Internet of Things in the Development of Next Generation Infrastructures**

### **12,30-13,00**

#### **Keynote Speech IEEE- IES**

### **13,00-14,00 Lunch**

### **14,00-15,30 Technical Parallel Sessions**

## **Room A**

### **Session A5 Smart Grids and Smart Cities I**

**Chair:** Stefano Massucco - Università di Genova, IEEE PES Italy Chapter

#### **Session organized in collaboration with IEEE PES Italy Chapter**

#### **A5\_01 Smart City Vizzate Project: Development and Field Test of an Architecture for the Local Dispatching of Distribution Networks**

Davide Falabretti, Maurizio Delfanti, Le Anh Dao, Luca Ferrarini, Luigi Piroddi - Politecnico di Milano, Italy

#### **A5\_02 Experimental Assessment of ESS Integration in a Microgrid Supplied by Photovoltaic**

Carla Sanna, Malgorzata Gawronska – Sardegna Ricerche, Italy, Andrea Salimbeni, Mario Porru, Alfonso Damiano - Università di Cagliari, Italy

#### **A5\_03 Optimal Management of Energy Storage Systems for Residential Customers with Photovoltaic Generation**

Francesco Antonini, Antonio Giannitrapani, Simone Paoletti, Antonio Vicino - University of Siena, Italy

#### **A5\_04 A Simple Strategy to Optimally Design and Manage a Photovoltaic Plant Integrated with a Storage System for Different Applications**

Stefano Bracco, Massimo Brignone, Federico Delfino, Paola Girdinio, Paola Laiolo, Renato Procopio, Mansueto Rossi - University of Genoa, Italy

#### **A5\_05 The Energy Router Project: Enabling Control for Prosumers**

Sergio Bruno, Giovanni Giannoccaro, Massimo La Scala - Polytechnic University of Bari, Italy

## **A5\_06 A Voltage Optimization Tool for Smart Distribution Grids with Distributed Energy Resources**

Anna Rita Di Fazio - Università di Cassino e del Lazio Meridionale, Italy, Arturo Losi - University of Cassino, Italy, Giovanni Mercurio Casolino - Università di Cassino e del Lazio Meridionale, Italy, Mario Russo - Università degli Studi di Cassino e del Lazio Meridionale, Italy, Michele De Santis - Università degli Studi Niccolò Cusano, Telematica-Roma, Italy

## **Room B**

### **Session B5 Mobility and Electrical Transports**

**Chair:** Regina Lamedica - Sapienza Università di Roma

#### **B5\_01 Automatic Train Operation Systems: a Survey on Algorithm and Performance Index**

Pierluigi Caramia - University of Napoli Parthenope, Italy, Gianluigi Lauro - Ansaldo STS, Italy, Mario Pagano, Pasquale Natale - Università degli Studi di Napoli Federico II, Italy

#### **B5\_02 Prediction of Useful Life for Signal Connectors in Railway Applications**

Morris Brenna, Federica Foadelli, Michela Longo - Politecnico di Milano, Italy, Lorenzo Bonadeo - ITT Cannon Veam Italia, Italy

#### **B5\_03 New Approaches to Simulate Electrified AC Railway Systems**

Alfonso Capasso, Regina Lamedica, Alessandro Ruvio - Sapienza Università di Roma, Italy, Massimo Ceraolo, Giovanni Lutzemberger - University of Pisa, Italy

#### **B5\_04 A Methodologic Approach to Define a new Layout of 3 kV DC Railway Sub Station**

Claudio Spalvieri, Luca Pantalone – Rete Ferroviaria Italiana, Italy, Regina Lamedica, Alessandro Ruvio, Marco Maccioni, Emiliano Bombelli – Sapienza University of Rome, Italy

#### **B5\_05 Results of Early Tests on 3kVDC Electric Traction Substation Empowered by Innovative Booster**

Fabrizio Caracciolo, Eugenio Fedeli - Rete Ferroviaria Italiana, Italy

#### **B5\_06 A Method to Size the Stack and the Battery of a Fuel Cell Vehicle Reducing the Fuel Consumption**

Giuseppe Graber, Vincenzo Galdi, Vito Calderaro, Antonio Piccolo - University of Salerno, Italy

#### **B5\_07 Energy Efficiency Improvements in Port Areas: towards an Integrated Energy Management**

Benedetto Aluisio, Maria Dicorato, Giuseppe Forte, Roberto Sbrizzai, Michele Antonio Trovato - Politecnico di Bari, Italy, Mario Mega - Port Authority of Bari, Italy

## **Room C**

### **Session C5 Service Continuity and Safety I**

**Chair:** Giuseppe Parise - Sapienza Università di Roma

**Session organised by** Giuseppe Parise - Sapienza University di Roma

#### **C5\_01 Analysis of Complex Hospital Electrical Systems**

Pietro Antonio Scarpino, Francesco Grasso - University of Florence, Italy

#### **C5\_02 Service Continuity and Safety Management in Medical Structures**

Giovanni Luca Amicucci, Fabio Fiamingo - University of Rome Campus Bio Medico, Italy, M. La Rosa – Libero Professionista

#### **C5\_03 Soluzioni progettuali e impiantistiche per l'ottimizzazione delle alimentazioni ai carichi critici e riduzione dei rischi connessi alla sicurezza di persone o cose: i vantaggi dei gruppi rotanti di continuità (R-UPS, D-RUPS, E-R-UPS)**

Anna Bruno, Sandro Meini, Francesco Galli - ATME, Italy

#### **C5\_04 Resilient Power in Hospitals: the S. Giovanni Addolorata General Hospital Case Study**

Alberto Prudenzi, A. Fioravanti - University of L'Aquila, Italy, V. Caracciolo – Azienda Ospedaliera S. Giovanni, Italy

#### **C5\_05 Lightning Protection of Medical Structures**

Giovanni Luca Amicucci – INAIL, Fabio Fiamingo - University of Rome Campus Bio Medico, Italy

**15,30-16,30 Case Histories and Best Practices from Industries, Universities; Research Centers**

**16,30-16,45 Break**

## **16,45-18,15 Technical Parallel Sessions**

### **Room A**

#### **Session A6 Smart Grids and Smart Cities II**

**Chair:** Stefano Massucco - Università di Genova, IEEE PES Italy Chapter

**Session organized in collaboration with IEEE PES Italy Chapter**

#### **A6\_01 Controllo di Carichi Termostatici per la Regolazione di Frequenza: Analisi Tecnico-Economica**

Francesco Conte, Monica Crosa di Vergagni, Stefano Massucco, Federico Silvestro - University of Genova, Italy, Emanuele Ciapessoni, Diego Cirio, Andrea Pitto - Ricerca sul Sistema Energetico RSE, Italy

#### **A6\_02 Assessment of Typical Residential Customers Load Profiles by Using Clustering Techniques**

Nicola Natale, Fabrizio Pilo, Giuditta Pisano, Matteo Troncia - Università di Cagliari, Italy, Fabio Bignucolo, Massimiliano Coppo, Nicola Pesavento, Roberto Turri - University of Padova, Italy

#### **A6\_03 Scenario Tree Generation for the Optimization Model of an EVs Parking Lot**

Fabio Napolitano - University of Bologna, Italy, Saeed Rahmani-Dabbagh - Sharif University of Technology, Tehran, Iran, Negin Heidari, Alberto Borghetti, Carlo Alberto Nucci - University of Bologna, Italy

#### **A6\_04 Promotion of higher penetration of distributed PV through storage for all (StoRES Project) in Italy**

Susanna Mocci - University of Cagliari, Italy, Andrea Rubiu - Municipality of Ussaramanna, Italy

#### **A6\_05 House to Grid (H2G) Ancillary Services supplied by Next Generation AC/DC Household Systems**

Fabio Bignucolo, Roberto Caldon, Nicola Pesavento, Andrea Savio - University of Padova, Italy

#### **A6\_06 Network Assessment in Static and Dynamic Conditions of Microgrid Optimal Operation Plan**

Benedetto Aluisio, Marco Bronzini, Michele Dellapigna, Maria Dicorato, Giuseppe Forte, Michele Trovato - Politecnico di Bari, Italy

### **Room B**

#### **Session B6 Computational Electromagnetics and Optimization**

**Chair:** Salvatore Alfonzetti - University di Catania

**Session Organized by** Salvatore Alfonzetti - University di Catania and Tommaso Campi - Università de L'Aquila

#### **B6\_01 Magnetic Field Generated by a 22 kW-85 kHz Wireless Power Transfer System for an EV**

Tommaso Campi, Silvano Cruciani - University of L'Aquila, Italy, Francescaromana Maradei - Sapienza University of Rome, Italy, Mauro Feliziani - University of L'Aquila, Italy

#### **B6\_02 High Efficiency and Lightweight Wireless Charging System for Drone Batteries**

Tommaso Campi, Silvano Cruciani - University of L'Aquila, Italy, Francescaromana Maradei (Sapienza University of Rome, Mauro Feliziani - University of L'Aquila, Italy

#### **B6\_03 Magnetic Materials Characterization by Tabu Search Optimization**

Sara Carcangiu, Monica Caboni, Alessandra Fanni, Augusto Montisci - University of Cagliari, Italy, Ermanno Cardelli, Antonio Faba - University of Perugia

#### **B6\_04 Optimal Design of a Permanent Magnet Spring**

Antonino Musolino, Marco Raugi, Rocco Rizzo, Mauro Tucci - University of Pisa, Italy, Efrén Díez Jiménez - Universidad de Alcalá, Italy

#### **B6\_05 Finite Element - Boundary Condition Iteration: a set of hybrid methods for the computation of electromagnetic fields in open boundaries**

Giovanni Aiello, Salvatore Alfonzetti, Santi Rizzo, Nunzio Salerno - University of Catania, Italy

#### **B6\_06 Optimization of the Magnetic Shield of a Levitation Melting Device**

Salvatore Alfonzetti, C. Buttò, Santi Rizzo, Nunzio Salerno - University of Catania, Italy

### **Room C**

#### **Session C6 Service Continuity and Safety II**

**Chair:** Giuseppe Parise - Sapienza Università di Roma

**Session organized by** Giuseppe Parise - Sapienza University di Roma

#### **C6\_01 Validation of a Medical Power Supply Prototype in Compliance with International Standards and Its Application into Italian Operating Rooms**

Emanuele Zennaro, Concetta Barrese, Fabio Fiamingo - Campus Bio-Medico University of Rome, Italy



**C6\_02 Resilienza al sisma degli impianti elettrici ospedalieri**

Giuseppe Parise – Sapienza University of Rome, Italy, Daniela Pedrini - SIAIS, Italy, Amedeo De Marco – Azienda Ospedaliera Cosenza, Italy, Luigi Parise, Antonio Santoro, Marco Tisi – Ospedale Pediatrico Bambino Gesù, Italy

**C6\_03 La ripartizione dell'energia elettrica come speciale architettura di rete per la continuità del servizio negli impianti ospedalieri**

Giuseppe Parise - Sapienza University of Rome, Italy, Daniela Pedrini - SIAIS, Italy, Amedeo De Marco - AOCS, Italy, Luigi Parise, Antonio Santoro, Marco Tisi - Ospedale Pediatrico Bambino Gesù, Italy

**20,30 GALA DINNER**

## Friday, September 22nd, 2017

### 9,15-10,45 Technical Parallel Sessions

#### Room A

##### Session A7 TLC Mobile

**Chair:** Cristian Perra - University of Cagliari

##### **A7\_01 LTE for Smart Grid Communication: a Performance Analysis with a Co-Simulation Approach**

Michele Garau, Emilio Ghiani, Gianni Celli, Fabrizio Pilo - University of Cagliari, Italy, Sergio Corti - RSE, Italy

##### **A7\_02 Performance evaluation of LTE in Unlicensed Bands for Indoor Deployment of Ultra-Broadband Mobile Networks**

Claudio Rasconà, Maria Gabriella Di Benedetto – Sapienza University of Rome, Italy, Tommaso Pecorella - Università di Firenze, Italy, Camillo Carlini, Pietro Obino - Telecom Italia, Italy

##### **A7\_03 Next Generation Architecture for Real Time Multimedia Applications**

Michele Scarlato, Cristian Perra - University of Cagliari, Italy

##### **A7\_04 Power Consumption in Mobile HetNets**

Claudia Carciofi, Paolo Grazioso, Francesco Matera - Fondazione Ugo Bordoni, Italy

##### **A7\_05 Ultra-broadband mobile networks from LTE-Advanced to 5G: evaluation of massive MIMO and multi-carrier aggregation effectiveness**

Marco Neri, Maria Gabriella Di Benedetto - Sapienza University of Rome, Italy, Tommaso Pecorella – University of Florence, Italy, Camillo Carlini, Andrea Castellani, Pietro Obino, Pamela Sciarratta - Telecom Italia, Italy,

##### **A7\_06 An Efficient Ultra Wideband Antenna Through Superstrate Technique**

Hamid Aslani, Ahmed Radwan - Politecnico di Milano, Italy

#### Room B

##### Session B7 Smart Systems

**Chairs:** Livio Baldi - AEIT AMES and Claudio Adragna - STMicroelectronics

##### **B7\_01 Machine Learning for Energy Efficiency**

Claudio Tomazzoli - Parco Scientifico e Tecnologico di Verona, Italy, Simone Scannapieco - Real T, Italy

##### **B7\_02 A Community Payment Scheme for Consciousness Energy usage**

Stefano Bistarelli – University of Perugia, Italy, Paolo Giuliadori - University of Camerino, Italy, Dimitri Mugnai - University of Perugia, Italy

##### **B7\_03 Energy Control in All-Electric Ship: state of the art and IoT perspectives**

Giorgio Sulligoi, Massimiliano Chiandone - University of Trieste, Italy

##### **B7\_04 Blockchain for Energy: Opportunities and Open Issues**

Alessandro Vizzarri, Francesco Vatalaro - University of Rome Tor Vergata, Italy

##### **B7\_05 Crypto-Trading: Blockchain-Oriented Energy Market**

Katiuscia Mannaro, Andrea Pinna, Michele Marchesi - University of Cagliari, Italy

#### Room C

##### Session C7 Electrical Machines and Drives

**Chair:** Carlo Cecati - University of L'Aquila / IEEE Industry Electronics Society

##### **C7\_01 Torque Vectoring System for Improving Manoeuvrability of Light Electric Vehicles**

Michele De Santis, Sandro Agnelli, Oliviero Giannini - Università degli Studi Niccolò Cusano, Italy

##### **C7\_02 Feedback Linearization Control of Wind Turbine Equipped with Doubly Fed Induction Generator**

Giovanni Cipriani, Mattia Corpora, Vincenzo Di Dio, Fabrizio Di Piazza, Antonino Sferlazza - University of Palermo, Italy

##### **C7\_03 Rotor Torsional Resonance Detection in Induction Drives by MCSA Focused on Rotor Slot Harmonics**

Claudio Bruzzese, Ezio Santini - Sapienza Università di Roma, Italy

**C7\_04 Steering Algorithm for Nonholonomic Mechanical Systems using Adaptive Sliding Mode Control**

Waseem Abbasi - Capital University of Science and Technology, Pakistan, Fazal ur Rehman – The University of Lahore, Pakistan, Ibrahim Shah - Capital University of Science and Technology, Pakistan

**C7\_05 Electrical, Mechanical and Thermal Design By Multi-Physics Simulations of a Permanent Magnet Linear Actuator for Ship Rudder Direct Drive**

Claudio Bruzzese, Mohammad Rafiei, Sabrina Teodori, Ezio Santini - Sapienza Università di Roma, Italy, Teresa Mazzuca, Gennaro Lipardi - Italian Navy, Italy

**C7\_06 Enhanced Loss Model Algorithm for Interior Permanent Magnet Synchronous Machines**

M. Caruso, A.O. Di Tommaso, R. Miceli, C. Nevoloso, C. Spataro, F. Viola - Università di Palermo, Italy

**11.00 11,15 The role of innovation Clusters**

Alfredo Tafuri – MESAP

**11.15 12.30 PANEL “The Role of Incubators & Accelerators for Fostering the Innovation in Energy and ICT Infrastructures”**