

EEEIC
2025
CRETE

Final Program v6

TUESDAY H 9:00 > 11:00
Room IMPERIAL MAIN HALL**RENEWABLE ENERGY AND STORAGE - 1**

Session Chair

Thomas Tsovilis

Aristotle University of Thessaloniki

- MI-TSI 116 FLYWHEEL ENERGY STORAGE SYSTEM: DESIGN, ANALYSIS AND TESTING ASPECTS**
Radu Martis (Technical University of Cluj - Napoca); razvan inte (Technical University of Cluj - Napoca); Cristina Adascalitei (Technical University of Cluj - Napoca); Nicolae Tanase (ICPE-CA); Lucian Demeter (ICPE EM); Claudia Martis (Tehnnical University of Cluj-Napoca)*
- MI-TSI 158 DESIGN OF DYNAMIC VIRTUAL POWER PLANTS BASED ON MODEL PREDICTIVE CONTROLLER**
Navid Vafamand (Laval University)*; Dariush Salehi (Laval University); Shayan Soltani (Laval University); Abbas Rabiee (Laval University); Innocent Kamwa (Laval University); Mohammad Hassan Asemani (Shiraz University)
- MI-TSI 202 DEGRADATION AT DIFFERENT TEMPERATURES OF CYCLE AGING IN BEV LITHIUM BATTERIES SUBJECTED TO FAST-CHARGE**
Claudio Scarpelli (University of Pisa)*; Massimo Ceraolo (University of Pisa); Giovanni Lutzemberger (University of Pisa); Francesco Giuseppe Quilici (University of Pisa); Dario Pelosi (University of Perugia); Linda Barelli (University of Perugia)
- MI-TSI 244 K-MEANS CLUSTERING FOR IDENTIFICATION OF HOUSEHOLD ENERGY UTILIZATION AND PRODUCTION**
Daniel Kocur (ControlTec Sp. z o.o); Michał Jasiński (Wroclaw University of Science and Technology)*; Riccardo Loggia (Sapienza University of Rome); Luigi Martirano (Sapienza University of Rome)
- MI-TSI 268 COST AND PERFORMANCE ANALYSIS OF HYDROGEN-BATTERY STORAGE IN HYBRID MICROGRIDS**
Ethan Capes (Durham University); Pratik Harsh (Durham University)*; Hongjian Sun (Durham University)
- MI-TSI 276 OPTIMAL SIZING AND OPERATIONS OF A HYDROGEN-BASED MULTI-ENERGY PORT SYSTEM WITH MARKET PARTICIPATION AND GAS GRID INTEGRATION**
Carlo Carcasci (University of Florence); Francesco Conte (Campus Bio-Medico University of Rome); Fabio D'Agostino (University of Genoa); Gabriele Guzzo (University of Florence); Gianluca Natrella (University of Genoa)*; Matteo Saviozzi (University of Genoa)
- MI-TSI 172 STATE OF HEALTH RESISTANCE ESTIMATION BASED ON A FEED FORWARD NEURAL NETWORK**
Panagiotis Eleftheriadis (Politecnico di Milano)*; Marios Saleptsis (Politecnico di Milano); Sonia Leva (Politecnico di Milano)

TUESDAY H 9:00 > 11:00
Room IMPERIAL 1**POWER SYSTEMS AND SMART GRIDS - 1**

Session Chair

Theofilos Papadopoulos

Aristotle University of Thessaloniki

- M1-TS2 **117** **GREEN INDEX: A MEASURE OF LOCALLY AVAILABLE GREEN ENERGY FOR SUSTAINABLE, GRID-AWARE DATA CENTER OPERATIONS**
Orestis Vantzios (IPTO)*; Dimitrios Skipis (IPTO);
Efthimia Chassioti (IPTO); Ioannis Moraitis (IPTO)
- M1-TS2 **140** **MV/LV NETWORK INTERACTION AND LOSSES BASED ON OPEN-SOURCE SIMULATION TOOLS UNDER HIGH RENEWABLE INTEGRATION**
Jesús Abril De Maya (Universidad Politécnica de Cartagena);
Angel Molina-García (Universidad Politécnica de Cartagena)*;
Raquel Villena-Ruiz (Universidad de Castilla La Mancha);
Aeishwarya Baviskar (Technical University of Denmark)
- M1-TS2 **153** **ENHANCING GRID CAPACITY AND RENEWABLE INTEGRATION THROUGH REAL-TIME CONTROL: A SYSTEMATIC LITERATURE REVIEW**
Muhammed Feyzi Ustundag (Eindhoven University of Technology)*;
Johan Morren (Eindhoven University of Technology);
Wouter van den Akker (Eindhoven University of Technology);
Anne van der Molen (Eindhoven University of Technology);
Shima Mousavi Gargari (Tennet)
- M1-TS2 **155** **ECONOMIC PROFITABILITY OF BATTERIES USED FOR PRIMARY FREQUENCY CONTROL THROUGH THE STOCHASTIC EVALUATION OF THE STATE OF CHARGE**
Davide Lauria (University of Naples Federico II); Domenico Villacci (University of Naples Federico II); Fabio Mottola (University of Naples Federico II)*; Daniela Proto (University of Naples Federico II); Linda Barelli (University of Perugia)
- M1-TS2 **170** **STATISTICAL ANALYSIS OF RELIABILITY IN A REAL URBAN DISTRIBUTION SYSTEM**
Haoke Wu (Politecnico di Torino); Andrea Mazza (Politecnico di Torino)*;
Gianfranco Chicco (Politecnico di Torino)
- M1-TS2 **302** **A MICROGRID TEST-BED ARCHITECTURE FOR INTEGRATED ENERGY SYSTEMS EXPERIMENTAL TESTING**
Andrea Bonfiglio (University of Genoa)*; Stefano Bracco (University of Genoa);
Andrea Bonfiglio (University of Genoa); Michela Robba (University of Genoa);
Mansueto Rossi (University of Genoa)
- M1-TS2 **308** **A CVAR-BASED PEER-TO-PEER ENERGY TRADING MODEL FOR LOCAL ENERGY COMMUNITIES WITH ELECTRIC VEHICLES AND HYDROGEN SYSTEMS**
Elham Mokaramian (University of Salerno); Pierluigi Siano (University of Salerno); Vito Calderaro (University of Salerno); Vincenzo Galdi (University of Salerno); Giuseppe Graber (University of Salerno)*; Lucio Ippolito (University of Salerno)

TUESDAY H 9:00 > 11:00
Room IMPERIAL 2**CIRCUITS, SENSORS AND ACTUATORS - I**

Session Chair

George Peppas

Technical University of Crete

- M1-TS3 15** **MODELING AND SIMULATION OF A PIEZOELECTRIC STACK ENERGY HARVESTER BASED ON HUMAN MOTION**
Jamel Riahi (Dept. of Electrical and Information Engineering); Hamza Nasri (Dept. of Electrical and Information Engineering); Silvano Vergura (Dept. of Electrical and Information Engineering)*; Mario Carpentieri (Dept. of Electrical and Information Engineering)
- M1-TS3 26** **DESIGN AND IMPLEMENTATION OF PLC-BASED AUTOMATED VEGETABLE CUTTING SYSTEM FOR ENHANCED FOOD PROCESSING EFFICIENCY**
Aamir Abbas (Taiyuan University of science and technology)*
- M1-TS3 52** **PASSAGEWAY LIGHTING CONTROL SYSTEM EMPLOYING PULSE-BASED VOLTAGE MODULATION FOR ENERGY MANAGEMENT PURPOSES**
Esmail Ghasemzadeh (South Khorasan Electricity Distribution Company (SKEDC)); Mohammad Komeili (Roshan Sepehr Moshkat Company); Mostafa Kermani (SAPIENZA University)*
- M1-TS3 78** **STUDY ON THE INTRINSIC TEMPERATURE COMPENSATION OF THE POLARIZATION ROTATION DETECTION FOR INDUSTRIAL MANUFACTURING OF FIBER-OPTIC CURRENT SENSOR**
Tobias Kuhnke (TU Dortmund University)*
- M1-TS3 147** **A STOCHASTIC ARC FURNACE MODEL WITH EXPONENTIAL ORNSTEIN-UHLENBECK FLUCTUATIONS**
Anna Chekhanova (Technische Universität Bergakademie Freiberg); Markus Dietz (Technische Universität Bergakademie Freiberg); Dariusz Grabowski (Silesian University of Technology); Maciej Klimas (Silesian University of Technology)*; Hans-Jörg Starkloff (Technische Universität Bergakademie Freiberg)
- M1-TS3 312** **AUTOMATION OF SYSTEMS IN A SMALL-SCALE DRINKING WATER FACTORY**
Jesse Agbenya (Ashesi University)*; Kofi Adu-Labi (Ashesi University)
- M1-TS3 25** **POLARIZATION ROTATION DETECTION FOR POLARIMETRIC FIBER-OPTIC CURRENT SENSORS**
Tobias Kuhnke (TU Dortmund University)*; Frank Jenau (TU Dortmund University)

TUESDAY H 9:00 > 11:00
Room IMPERIAL 3**SS02 TOWARDS THE NEXT GENERATION
OF SMART GRIDS-BASED MULTI-ENERGY
SYSTEMS RAISING ICT CUTTING-EDGE SOLUTIONS**

Session Chairs

Alessandro Aliberti

Politecnico di Torino

Edoardo Patti

Politecnico di Torino

- MI-TS4 89 AN ONTOLOGY-BASED METHODOLOGY TO ASSIST COMPLEX ENERGY CO-SIMULATION SETUP**
Matia Torlini (Politecnico di Torino)*; Pietro Mazzarino (Politecnico di Torino); Daniele Schiera (Politecnico di Torino); Luca Barbierato (Politecnico di Torino); Lorenzo Bottaccioli (Politecnico di Torino); Edoardo Patti (Politecnico di Torino)
- MI-TS4 137 FROM FRAGMENTED DATA TO SMART CONVERSATIONS IN ENERGY COMMUNITIES: THE GAIA APPROACH TO CROSS-DOMAIN IOT INTEGRATION**
Alessio Viticchié (ALPHAWAVES S.R.L.); Roberto Puntorieri (ALPHAWAVES S.R.L.); Felice Cetrone (ALPHAWAVES S.R.L.); Christian Camarda (Midori S.r.l.); Leonardo Napoli (Bosco Elettronica S.r.l.); Edoardo Patti (Politecnico di Torino); Alessandro Aliberti (Politecnico di Torino, Interuniversity Dept. of Regional and Urban Studies and Planning)*
- MI-TS4 148 LOAD PROFILE GENERATION FOR ROBUST OPTIMIZATION: A STOCHASTIC APPROACH BASED ON CONDITIONAL PROBABILITY APPROXIMATION**
Lorenzo Becchi (UNIFI)*; Chiara Camerota (SLU); Matteo Intravaia (UNIFI); Marco Bindi (UNIFI); Antonio Luchetta (UNIFI); Tommaso Pecorella (UNIFI)
- MI-TS4 159 A BIMTOBEM FRAMEWORK FOR BUILDING RETROFIT AND HVAC SMART CONTROL ASSESSMENT**
Maria Adelaide Loffa (Politecnico di Torino)*; Angelo Giuliano Donato (Politecnico di Torino); Pietro Rando Mazzarino (Politecnico di Torino); Enrico Macii (Politecnico di Torino); Anna Osello (Politecnico di Torino); Matteo Del Giudice (Politecnico di Torino); Edoardo Patti (Politecnico di Torino); Lorenzo Bottaccioli (Politecnico di Torino)
- MI-TS4 235 RESIDENTIAL ENERGY MONITORING SYSTEMS WITH PV INTEGRATION FOR SMART SOLUTIONS**
Sergio Tarraga-Albaladejo (Universidad Politécnica de Cartagena); Angel Molina-Garcia (Universidad Politécnica de Cartagena)*; Alfonso P. Ramal-Gonzalez (Universidad Politécnica de Cartagena); Jose Miguel Paredes-Parra (Technological Center of Energy and Environment (CETENMA))
- MI-TS4 260 TEMPORAL-SPATIAL ANOMALY DETECTION IN SMART GRIDS USING LATENT REPRESENTATIONS AND BILSTM NETWORKS**
Abid Ali (Beijing Institute of Technology); Yuanqing Xia (Beijing Institute of Technology); Muhammad Zia (American University in Dubai)*; Muhammad Faisal Nadeem (University of Engineering and Technology Taxila); Intisar Ali Sajjad (University of Engineering and Technology Taxila); Mohamed Benbouzid (University of Brest); Luigi Martirano (Sapienza University of Rome)
- MI-TS4 269 SOLAR IRRADIANCE ESTIMATION FROM SEVIRI: A FEATURE IMPORTANCE AND CHANNEL SELECTION ANALYSIS**
Raimondo Gallo (Politecnico di Torino)*; Marco Castangia (Politecnico di Torino); Alberto Macii (Politecnico di Torino); Alessandro Aliberti (Politecnico di Torino); Edoardo Patti (Politecnico di Torino)

TUESDAY H 9:00 > 11:00
Room IMPERIAL 4

**SS06 POWER SYSTEMS WITH DISTRIBUTED
ENERGY RESOURCES AND STORAGE
INTEGRATION – HORIZON PROJECT
PANEL SESSION**

Session Chair
Maria Fotopoulou
Research associate at CERTH

M1-TS5

ENFLATE PROJECT
Maria Fotopoulou (CERTH)

THEUS PROJECT
Kyriaki-Nefeli Malamaki (IPTO)

SINNOGENES PROJECT
Sotirios Christopoulos (HEDNO)

D-HYDROFLEX PROJECT
Katerina Drivakou (UBITECH ENERGY)

IANOS PROJECT
Panagiotis Karafotis (CERTH)

CRETE VALLEY PROJECT
Elissaios Sarmas (EPU-NTUA)

TUESDAY H 11:30 > 13:30
Room IMPERIAL MAIN HALL

ENERGY EFFICIENT SYSTEMS

Session Chair

Kyriaki-Nefeli Malamaki

Independent Power Transmission Operator (IPTO)

- NI-TSI 47** **OPTIMIZING ENERGY EFFICIENCY BY IMPLEMENTING A HEAT RECOVERY SYSTEM IN AN INDUSTRIAL PROCESS USED IN ENERGY COMMUNITIES**
 Serban Cristian (University Politehnica of Bucharest)*; Cristian Lazaroiu (Universitatea Politehnica din Bucuresti)
- NI-TSI 67** **BUILDING VENTILATION SYSTEM ENERGY CONSERVATION BY ADOPTING ENERGY-EFFICIENT AIR FILTRATION TECHNOLOGY COMBINED WITH ANTIMICROBIAL AIR FILTER**
 Gin Nam Sze To (Aurabeat Technology Ltd)*; Philip Yuen (Aurabeat Technology Ltd)
- NI-TSI 261** **PID^α CONTROLLER DESIGN TECHNIQUE FOR AN ELECTRIC FURNACE TEMPERATURE CONTROL SYSTEM**
 Abdelhakim Idir (M'Sila University); Mokhtar Nesri (Ecole Supérieur Ali Chabati, Reghaia); Sifelislam Guedida (UER ELT, Ecole Militaire Polytechnique); Laurent Canale (LAPLACE Lab., CNRS, Université Toulouse III - Paul Sabatier)*
- NI-TSI 266** **ENERGY CONSUMPTION FORECASTING FOR BUILDINGS IN DATA-SCARCE SCENARIOS**
 Amedeo Buonanno (ENEA, Department of Energy Technologies and Renewable Sources)*; Salvatore Fabozzi (ENEA, Department of Energy Technologies and Renewable Sources); Maria Valenti (ENEA, Department of Energy Technologies and Renewable Sources); Giorgio Graditi (ENEA)
- NI-TSI 267** **DATA ACQUISITION SYSTEM FOR THERMAL MONITORING IN HIGH-VOLTAGE STEP DOWN SUBSTATION USING RASPBERRY PI AND IOT SENSORS**
 Stefania Guarino (University of Palermo)*; Valerio Lo Brano (University of Palermo); Vincenzo Di Dio (University of Palermo); Fabio Cardona (University of Palermo); Alessandro Biondi (University of Palermo)
- NI-TSI 341** **STUDY ON EM INTERFERENCES DUE TO LED LIGHTING SOURCES AND THEIR IMPACTS ON THE RAILWAY TELECOMMUNICATION SYSTEM IN UKRAINE**
 Laurent Canale (Laboratoire LAPLACE)*; Tetiana Serdiuk (Ukrainian State University of Science and Technologies); Maksym Serchenko (Ukrainian State University of Science and Technologies)
- NI-TSI 144** **USER-CENTERED ENERGY MANAGEMENT FOR A MULTI-RESIDENTIAL BUILDING WITH PUBLIC LOADS AND ELECTRIC VEHICLES**
 Lechter Yao (National Technology University Taipei)*; J. C. Teo (National Technology University Taipei)

TUESDAY H 11:30 > 13:30
Room IMPERIAL 1

SS22 ENERGY FLEXIBILITY AND DIGITAL SOLUTIONS FOR SUSTAINABLE ENERGY SYSTEMS - 1

Session Chair

Pio Alessandro Lombardi

Fraunhofer Institute for Factory Operation and Automation

- NI-TS2 20** **COMPREHENSIVE COST-BENEFIT ANALYSIS OF MBESS AND SBESS IN DISTRIBUTION POWER SYSTEM**
Soumia Ayyadi (Strathclyde University)*; Ibrahim Abdulhadi (Strathclyde University); Pasidu Pallawela (StorTera Ltd); Brenda Park (StorTera Ltd)
- NI-TS2 149** **FLEXIBILITY OF A NATIONAL-SCALE AGGREGATE OF ELECTRIC VEHICLES CONSIDERING ACTIVATION EFFECTS**
Piersilvio Marcolin (Ricerca sul Sistema Energetico)*
- NI-TS2 178** **A GA-BASED STATE ESTIMATION FOR ACTIVE DISTRIBUTION NETWORKS IN A DIGITAL TWIN FRAMEWORK**
"Muhammad Ghereishi (Sapienza University of Rome)*; Tommaso Bragatto (Sapienza University of Rome); Huda Almughary (Sapienza University of Rome); Francesca Santori (ASM Terni S.p.A.); Marco Maccioni (Sapienza University of Rome); Alberto Geri (Sapienza University of Rome); Mostafa Jabari (Sapienza University of Rome); Alessio Cavadenti (ASM Terni S.p.A.)"
- NI-TS2 181** **DIGITAL TWIN ARCHITECTURES FOR MARITIME MICROGRIDS: TOWARD RESILIENT AND INTELLIGENT PORT OPERATIONS**
Muhammad Sadiq (University of Malta)*; John Licari (Department of Electrical Engineering, University of Malta); Maurice Apap (Department of Electrical Engineering, University of Malta); Cyril Spiteri Staines (Department of Electrical Engineering, University of Malta); Alexander Micallef (Department of Electrical Engineering, University of Malta)
- NI-TS2 245** **ENHANCING INDUSTRIAL HEAT PUMP AND THERMAL STORAGE'S SIZING WITH FIXED AND VOLATILE ELECTRICITY PROCUREMENT USING MILP**
Lukas Ruess (Institut für Energieeffizienz in der Produktion (EEP) University Stuttgart)*
- NI-TS2 299** **LEGAL IMPLEMENTATION AND DIGITAL ENABLEMENT OF ENERGY COMMUNITIES ACROSS EUROPE: INSIGHTS FROM FLEXBIT PROJECT**
Gaetano Zizzo (IEEE)*; Christina Karatrantou (Centre for Research and Technology Hellas)

**SS20 MACHINE LEARNING
FOR POWER SYSTEMS**

Session Chair

Alice La Fata

University of Genoa

- NI-TS3 8** **A PATTERN RECOGNITION ALGORITHM TO ESTIMATE THE BIDDING STRATEGY IN THE ANCILLARY SERVICE MARKET**
 Alice La Fata (University of Genoa - DITEN)*; Giulio Caprara (Nadara Italy SpA); Riccardo Barilli (Nadara Italy SpA)
- NI-TS3 45** **GRID MIRROR: HARNESSING ADVERSARIAL PINNS TO MODEL POWER GRID DYNAMICS**
 Mohammad Ali Sayed (Concordia University)*; Khaled Sarededdine (Concordia University); Mohsen Ghafouri (Concordia University); Mourad Debbabi (Concordia University); Chadi Assi (Concordia University)
- NI-TS3 176** **DATA-DRIVEN MODELLING OF PV PRODUCTION TO INCREASE FORECAST ACCURACY OF MULTI-INVERTER PLANTS**
 Lapo Cheli (YANMAR R&D Europe s.r.l.)*; Amir Gamahdril Iuale (YANMAR R&D Europe s.r.l.); Alessandro Innocenti (YANMAR R&D Europe s.r.l.)
- NI-TS3 207** **SOLAR INTENSITY FORECASTING USING ARTIFICIAL INTELLIGENCE MODELS**
 Francisco Santos (Universidade de Trás-os-Montes e Alto Douro); Tiago Pinto (Universidade de Trás-os-Montes e Alto Douro)*; José Baptista (Universidade de Trás-os-Montes e Alto Douro)
- NI-TS3 211** **WIND SPEED FORECASTING USING MACHINE LEARNING MODELS: A PORTUGUESE WINE FARM CASE STUDY**
 "Barbara Ribeiro (Universidade de Trás-os-Montes e Alto Douro); Tiago Pinto (Universidade de Trás-os-Montes e Alto Douro)*; Vânia Pereira (Universidade de Trás-os-Montes e Alto Douro); José Baptista (Universidade de Trás-os-Montes e Alto Douro)"
- NI-TS3 249** **MACHINE LEARNING FOR WIND POWER FORECASTING UNDER DATA SCARCITY: COMPARING SPATIAL FEATURE CONFIGURATIONS AND SELECTION STRATEGIES**
 Dimitri Thomopoulos (University of Pisa)*; Antonio Piazza (i-EM S.r.l.); Marco Raugi (University of Pisa); Mauro Tucci (University of Pisa)
- NI-TS3 332** **CYBER VULNERABILITY ANALYSIS AND ANOMALY DETECTION IN A DC MICROGRID CLUSTER**
 Yasaman Haghjoo (Concordia University)*; Jun Yan (Concordia University); Mohsen Ghafouri (Concordia University)

TUESDAY H 11:30 > 13:30
Room IMPERIAL 3**MOBILITY****Session Chair**
Sajib Chakraborty
Vrije Universiteit Brussel

- NI-TS4 108** **MARINE TRANSPORT ANALYSES:
A TOOLKIT TO ASSESS VESSEL OPERATIONS AT THE CONTAINER PORT**
Orlando Belcore (Università degli Studi di Messina)*; Antonio Polimeni (Università degli Studi di Messina)
- NI-TS4 194** **IDENTIFYING BUILDING BLOCKS
FOR SECOND-LIFE-ENABLED BATTERY MANAGEMENT SYSTEMS**
Julian Blümke (Technische Hochschule Ingolstadt)*; Claudius Laves (Technische Hochschule Ingolstadt); Hans-Joachim Hof (Technische Hochschule Ingolstadt)
- NI-TS4 204** **ANNUAL HOURLY E-MOBILITY MODELLING AND ASSESSMENT
IN CLIMATE NEUTRAL POSITIVE ENERGY DISTRICTS**
Simon Schneider (University of Applied Sciences Technikum Wien)*; José Baptista (UTAD)
- NI-TS4 205** **BATTERY ELECTRIC VEHICLES (BEV):
MORE EFFICIENT THAN EXPECTED?**
Claudio Scarpelli (University of Pisa)*; Massimo Ceraolo (University of Pisa); Giovanni Lutzemberger (University of Pisa); Gianluca Pasini (University of Pisa); Francesco Giuseppe Quilici (University of Pisa); Davide Fioriti (University of Pisa)
- NI-TS4 217** **MICROGRID EMS FOR A WASTE MANAGEMENT INDUSTRY
WITH EVS, PV, AND BESS**
Andrés Henao Muñoz (Catalonia Institute for Energy Research)*; Leila Kerrum Balaguer (Universitat Politècnica de Catalunya); Andrés Bernabeu (Catalonia Institute for Energy Research); Antonio Pepiciello (Catalonia Institute for Energy Research); Lluís Trilla (Catalonia Institute for Energy Research); Jose Luis Domínguez García (Catalonia Institute for Energy Research)
- NI-TS4 263** **ENERGY NEEDS FOR ELECTRIC MOBILITY
IN LARGE URBAN AREAS AND POTENTIALS OF V2G IMPLEMENTATION:
EMPIRICAL ANALYSIS USING BIG DATA FROM FLOATING CARS**
"Gaetano Fusco (Sapienza University of Rome)*; Chiara Colombaorni (Sapienza University of Rome); Saeed Mansouryar (Sapienza University of Rome); Mohadeseh Pasha (Sapienza University of Rome)"

TUESDAY H 11:30 > 13:30
Room IMPERIAL 4

SS14 RENEWABLE ENERGY COMMUNITIES: TECHNICAL CHALLENGES AND PROMISING SOLUTIONS

Session Chair

Valentina Consolo

University of Pisa

- NI-TS5 11** **THE STRATEGIC ROLE OF BATTERY ENERGY STORAGE SYSTEM IN ENHANCING GRID STABILITY AND PROMOTING LOCAL ENERGY SOVEREIGNTY**
Pislaru Denisa (Universitatea Politehnica Bucuresti)*
- NI-TS5 44** **MODELS OF ENERGY COMMUNITIES**
Ionut Ciobanu (University POLITEHNICA of Bucharest)*
- NI-TS5 74** **ENERGY EFFICIENT COMMUNITY:
A TWO-STAGE MARKET OPTIMIZATION FRAMEWORK INCORPORATING P2P TRADING, MARKET DYNAMICS AND UNCERTAINTIES**
Shafiuzzaman Khadem (International Energy Research Centre)*
- NI-TS5 146** **A VALIDATED SIMULATION APPROACH
FOR ELECTRICITY DEMAND AND ENERGY SHARING
IN A SCHOOL-BASED RENEWABLE ENERGY COMMUNITY**
Roberto Rugani (University of Pisa, DESTeC Department)*; Valentina Consolo (University of Pisa, DESTeC Department); Marco Raugi (UNESCO chair on Sustainable Energy Communities, DESTeC Department, University of Pisa)
- NI-TS5 221** **OPTIMISING ENERGY COMMUNITIES:
MULTI-SCENARIO ANALYSIS ACROSS PROSUMER
PENETRATION LEVELS AND COMMUNITY SCALES**
Tommaso Ferrucci (University of Pisa)*;
Davide Fioriti (University of Pisa); Tommaso Ferrucci (University of Pisa)
- NI-TS5 303** **DEMAND RESPONSE IN DISTRIBUTION OPERATION
PLANNING HOSTING DC MICROGRID-BASED ENERGY COMMUNITY**
Francesca Marasciuolo (Politecnico di Bari)*;
Maria Dicorato (Politecnico di Bari);
Gioacchino Tricarico (Politecnico di Bari);
Giuseppe Forte (Politecnico di Bari);
Roberto Sbrizzai (Politecnico di Bari)

TUESDAY H 15:00 > 17:00
Room IMPERIAL MAIN HALL

**SS22 ENERGY FLEXIBILITY
AND DIGITAL SOLUTIONS
FOR SUSTAINABLE ENERGY SYSTEMS - 2**

Session Chair

Pio Alessandro Lombardi

Fraunhofer Institute for Factory Operation and Automation

AI-TSI **115**

**TWO-STAGE LOAD SCHEDULING OPTIMIZATION
FOR BALANCING DEMAND-SIDE AND SUPPLY-SIDE OBJECTIVES**

Rasel Ahmed (Multimedia University); Wooli Nee Tan (Multimedia University)*;
Ming-Tao Gan (Multimedia University); Sook-Chin Yip (Multimedia University)

AI-TSI **169**

**HOOR-AHEAD LOAD FORECASTING
FOR FLEXIBILITY MANAGEMENT IN ENERGY COMMUNITIES**

Vishnu Suresh (Wroclaw university of science and technology)*; Tomasz Sikorski (Wroclaw University of Science and Technology); Gaetano Zizzo (University of Palermo); Pierluigi Gallo (University of Palermo/CNIT)

AI-TSI **215**

**ROLLING HORIZON-BASED SCHEDULING
FOR FLEXIBILITY PROVISION IN MULTI-ENERGY SYSTEMS**

Truong Hoang Bao Huy (Eindhoven University of Technology)*; Daehee Kim (Soonchunhyang University); An Thien Huu Nguyen (Eindhoven University of Technology); Kha T. Nguyen (Eindhoven University of Technology); Amin Maghami (Eindhoven University of Technology); Christina Papadimitriou (Eindhoven University of Technology); Phuong H. Nguyen (Eindhoven University of Technology)

AI-TSI **246**

**FROM NET-ZERO ENERGY FACTORY
TO AN INDUSTRIAL RENEWABLE ENERGY COMMUNITY:
A GERMAN CASE STUDY**

Pio Alessandro Lombardi (Fraunhofer Institute for Factory Operation and Automation IFF)*; Finn Bennet Schröder (Fraunhofer Institute for Factory Operation and Automation IFF); Stephan Balischewski (Fraunhofer Institute for Factory Operation and Automation IFF)

AI-TSI **250**

**MODELING AND PERFORMANCE ASSESSMENT
OF AN HT-PEMFC-BASED CHP SYSTEM
FOR RESIDENTIAL ENERGY COMMUNITIES**

Lorenzo Bartolucci (University of Rome Tor Vergata)*; Vesselin Krassimirov Krastev (University of Rome Tor Vergata); Giovanni Malizia (University of Rome Tor Vergata); Vincenzo Mulone (University of Rome Tor Vergata); Alessandro Polimeni (University of Rome Tor Vergata)

AI-TSI **281**

**SMART PARKING OPTIMAL DESIGN FOR
RENEWABLE ENERGY COMMUNITIES INTEGRATION IN POWER SYSTEM**

Giuseppe Sciumè (Università di Palermo)*; Domenico Amico (Università di Palermo); Pierluigi Gallo (Università di Palermo); Antony Vasile (Università di Brescia); Gaetano Zizzo (Università di Palermo)

TUESDAY H 15:00 > 17:00
Room IMPERIAL 1**MICROGRIDS MODELING,
SIMULATION AND DATA MANAGEMENT**

Session Chair

Eftychios Koutroulis

Technical University of Crete

AI-TS2 **1****SMART INTEGRATION OF RENEWABLE ENERGY SOURCES
IN THE SUPPLY OF A SKI-RESORT MICROGRID**

"Andrea Alessia Tavagnutti (University of Trieste); Roberto Vergine (University of Trieste); Daniele Bosich (University of Trieste)*; Stefano Quaia (University of Trieste); Giorgio Sulligoi (University of Trieste)"

AI-TS2 **166****HIERARCHICAL CONTROL OF MICROGRID CLUSTERS
FOR DYNAMIC NET-ZERO CONSUMPTION IN DISTRIBUTION NETWORKS**

Pablo Horrillo-Quintero (University of Cadiz)*; Pablo Garcia-Triviño (University of Cadiz); João Catalão (University of Porto); David Carrasco-González (University of Cadiz); Carlos Andrés García-Vázquez (University of Cadiz); Luis M. Fernández-Ramírez (University of Cadiz)

AI-TS2 **188****OPTIMAL HIERARCHICAL ENERGY MANAGEMENT SYSTEM
FOR A THREE-BUS MICROGRID CLUSTER CONFIGURATION**

David Carrasco-González (University of Cadiz)*; Ehsan Hosseini (University of Cadiz); Raúl Sarrias-Mena (University of Cadiz); Pablo Horrillo-Quintero (University of Cadiz); Pablo Garcia-Triviño (University of Cadiz); Luis Miguel Fernández-Ramírez (University of Cadiz)

AI-TS2 **209****UNIVERSITY CAMPUSES AS ENERGY COMMUNITIES:
A CASE STUDY OF MICROGRID OPERATION AND ENERGY SHARING**

Aleksandra Zlatkova (Faculty of Electrical Engineering and Information Technologies)*; Vladimir Gjorgievski (Faculty of Electrical Engineering and Information Technologies); Dimitar Taskovski (Faculty of Electrical Engineering and Information Technologies); Juan Vasquez (AAU Energy, Aalborg University); Najmeh Bazmohammadi (AAU Energy, Aalborg University)

AI-TS2 **224****COMPARISON OF CONTROL STRATEGIES
FOR BATTERY ENERGY STORAGE SYSTEMS IN AC MICROGRIDS**

Chaimae EL FEDLAOUI (Université de lorraine)*; Serge Pierfederici (Université de lorraine); Ehsan Jamshidpour (Université de lorraine); Milad Bahrami (Université de lorraine); Jean-Philippe Martin (Université de lorraine); Mohamed Bakhouya (Université Internationale de Rabat); Najib Mehdi (Université Internationale de Rabat)

AI-TS2 **171****DATA-DRIVEN TIMESTEP ANALYSIS
FOR STATE OF HEALTH ESTIMATION
USING BILSTM NEURAL NETWORKS**

Panagiotis Eleftheriadis (Politecnico di Milano)*; Marios Saleptsis (Politecnico di Milano); Sonia Leva (Politecnico di Milano)

TUESDAY H 15:00 > 17:00
Room IMPERIAL 2**INDUSTRY APPLICATIONS**

Session Chair

Thomas Tsovilis

Aristotle University of Thessaloniki

AI-TS3 **130****NOVEL TWO-LAYER SUB-HARMONIC VERNIER MACHINE**S M Sajjad Hossain Rafin (Florida International University)*;
Hossam Hussein (Florida International University);
Qasim Ali (Sukkur IBA University);
Osama Mohammed (Florida International University)AI-TS3 **279****THEORETICAL INVESTIGATION OF THERMAL BEHAVIOR OF INDUCTORS FOR POWER ELECTRONIC APPLICATIONS**

Francesco Montana (University of Palermo); Daniele Scirè (University of Palermo)*

AI-TS3 **182****APPLICATION OF THE NODAL ADMITTANCE MATRIX METHOD FOR MODELING AND MITIGATION OF GEOMAGNETICALLY INDUCED CURRENTS**

"José Dilmer Ramirez Torres (Universidade Federal do Rio Grande do Sul)*; Diego Enrique Castro Calderon (Universidade Federal do Rio Grande do Sul); Roberto Chouhy Leborgne (Universidade Federal do Rio Grande do Sul); Daniel Gazzana da Silva (Universidade Federal do Rio Grande do Sul); Roger Alves de Oliveira (Eindhoven University of Technology); Arturo Suman Bretas (Sandia National Laboratories)"

AI-TS3 **274****CONSTRAINTS RELATED TO CORONA DISCHARGE IN HTLS OVERHEAD LINE UPGRADES**Pierluigi Vacante (Terna)*; Franco Di Bona (Terna);
Francesco Palone (Terna); Lorenzo Papi (Terna);
Roberto Spezie (Terna); Gabriele Tresso (Terna)AI-TS3 **102****DIFFERENTIATING FAULT AND ATTACK IN THREE-TERMINAL LINES CURRENT DIFFERENTIAL RELAYS**Shayan Soltani (University Laval)*; Siavash Yari (Univeristy Laval);
Dariush Salehi (University Laval); Masood Mottaghizadeh (University Laval);
Navid Vafamand (Univeristy Laval); Akhtar Hussain (Univeristy Laval);
Innocent Kamwa (Univeristy Laval)AI-TS3 **297****ELECTRICAL SAFETY IN THE TIME OF TARIFFS**Massimo Mitolo (Irvine Valley College);
Rodolfo Araneo (University of Rome La Sapienza)*AI-TS3 **298****ON BONDING AND GROUNDING OF METAL FENCES**Massimo Mitolo (Irvine Valley College);
Rodolfo Araneo (University of Rome La Sapienza)*;
Erika Stracqualursi (University of Rome La Sapienza)

TUESDAY H 15:00 > 16:00
Room IMPERIAL 3

MATERIALS

Session Chair
Donato Cafagna
Università del Salento

- AI-TS4 **55** **THE EFFECT OF PRECONDITIONING ON THE PERFORMANCE OF SILICON ANODES FOR LITHIUM-ION BATTERIES**
Dominika Capkova (University of Limerick)*; David Trochta (Brno University of Technology); David McNulty (University of Limerick); Hugh Geaney (University of Limerick); Tomas Kazda (Brno University of Technology); Kevin Ryan (University of Limerick)
- AI-TS4 **33** **ENHANCING THE MACHINABILITY OF TITANIUM ALLOYS FOR RENEWABLE ENERGY APPLICATIONS USING LASER-TEXTURED AND COATED CUTTING TOOLS**
Yassmin Ahmed (King Fahd University of Petroleum and Minerals)*
- AI-TS4 **72** **STRUCTURAL ANALYSIS OF WIND TURBINE BLADES FOR MATERIAL OPTIMIZATION**
Yassmin Ahmed (King Fahd University of Petroleum and Minerals)*; Sherif M. Youssef (KFUPM)
- AI-TS4 **162** **HIGH-PERFORMANCE NANOCOMPOSITES FOR DE-ICING AND DE-SNOWING IN PHOTOVOLTAIC APPLICATIONS**
Gabriele Cavaliere (University of Salerno)*; Luca Tari (University of Cassino and Southern Lazio); Antonio Maffucci (University of Cassino and Southern Lazio); Luigi Ferrigno (University of Cassino and Southern Lazio)

TUESDAY H 16:00 > 17:00
Room IMPERIAL 3

SS16 ELECTRICAL ENERGY STORAGE SYSTEMS, POWER SUPPLIES AND ELECTRICAL POWER SYSTEMS IN NUCLEAR FUSION

Session Chairs

Simone Minucci

Universitas Mercatorum

Matteo Manganelli

ENEA

AI-TS4 **212**

PRELIMINARY STUDIES ON ELECTRICAL CABLE DESIGN MODELING AND VALIDATION UNDER PULSED LOAD CONDITIONS

Roberto Romano (DTT SCARL)*; Silvia Cesaroni (ENEA);
Babak Taheri (enea); Stefano Panella (enea)

AI-TS4 **285**

ON THE ADVANTAGES OF USING SUPERCONDUCTING CONTACTLESS POWER SUPPLIES FOR DC SUPERCONDUCTING COILS IN NUCLEAR FUSION DEVICES

Marianna Di Pietrantonio (University of Tuscia)*; Giacomo Russo (University of Bologna); Emiliano Guerra (University of Bologna); Simone Minucci (Universitas Mercatorum); Antonio Morandi (University of Bologna); Mattia Simonazzi (University of Bologna); Domenica Alessandro Lampasi (ENEA and DTT S. c. a. r. l.); Antonio Trotta (ENI and DTT S. c. a. r. l.)

AI-TS4 **317**

CHARACTERIZATION OF SUPERCAPACITORS IN THERMALLY CONTROLLED CONDITIONS

Francesco Desana (University of Tuscia)*; Sabino Pipolo (ENEA, DTT); Alessandro Lampasi (ENEA, DTT); Antonio Morandi (University of Bologna)

AI-TS4 **318**

EMULATION OF FREQUENCY DEPENDENCE OF TOKAMAK IN-VESSEL COILS BY IMPEDANCE FITTING

Alberto Darjazi Dolaby (CREATE, University of Pavia)*; Sabino Pipolo (ENEA, DTT); Cristina Terlizzi (University of Tor Vergata); Roberto Romano (ENEA, DTT); Alessandro Lampasi (ENEA, DTT)

TUESDAY H 15:00 > 17:00
Room IMPERIAL 4

SS19 ENERGY SYSTEM MODELLING – ADVANCES, CHALLENGES, AND FUTURE DIRECTIONS

Session Chair
Davide Fioriti
University of Pisa

- AI-TS5 **28** **DESIGN AND IMPLEMENTATION
OF A SUSTAINABLE SOLAR-POWERED WATER
PURIFICATION SYSTEM FOR SAFE DRINKING WATER**
Dipta Paul (American International University-Bangladesh)*;
Riad Mollik Babu (University of Asia Pacific); Md Kamal Hossain (Stamford
University Bangladesh); Md Jamal Uddin (Stamford University Bangladesh)
- AI-TS5 **131** **EXPLORING UNCERTAINTIES IN FUTURE POWER SYSTEMS:
METHODOLOGY AND ANALYSIS FOR ITALY 2040**
Alessandro Pampado (University of Pisa)*;
Davide Fioriti (University of Pisa); Davide Poli (University of Pisa)
- AI-TS5 **174** **ENHANCING ENERGY SYSTEM MODELLING
WITH ADVANCED MATHEMATICAL DECOMPOSITION TECHNIQUES:
FEASIBILITY OF COUPLING SMS++ AND PYPISA**
Davide Fioriti (DESTEC)*; Alessandro Pampado (University of Pisa); Claudio
Scarpelli (University of Pisa); Gianluca Pasini (University of Pisa); Giovanni
Lutzemberger (University of Pisa); Stefano Barsali (University of Pisa); Davide
Poli (University of Pisa); Donato Meoli (University of Pisa); Luca Mencarelli
(University of Pisa); Antonio Frangioni (University of Pisa)
- AI-TS5 **193** **ADVANCED NON-LINEAR CONTROL
FOR MULTI ENERGY SYSTEMS (MES) – A CONCEPTUAL FRAMEWORK**
"Sheraz Ahmad Babar (Universita Degli Studi di Palermo)*; Eleonora Riva
Sanseverino (Universita Degli Studi di Palermo); Rossano Musca (Universita
Degli Studi di Palermo); Marco Ferraro (NR ITAE Messina)"
- AI-TS5 **241** **DYNAMIC STABILITY CONSIDERATIONS
DURING CAPACITY EXPANSION PLANNING**
Juan DIEGO RIOS PENALOZA (IMDEA Energy)*; Alicia Mortera-Canga (IMDEA
Energy); Milan Prodanovic (IMDEA Energy)
- AI-TS5 **330** **MULTI-OBJECTIVE OPTIMAL POWER FLOW SOLUTION
USING A MODIFIED SLIME MOULD ALGORITHM**
"Pedro Bento (University of Beira Interior)*; José Pombo (University of Beira
Interior); Bianca Magalhães (University of Beira Interior); Maria do Rosario
Calado (University of Beira Interior); Silvio Mariano (University of Beira Interior)"

**RENEWABLE ENERGY
AND STORAGE - 2**

Session Chair

George Peppas

Technical University of Crete

- M2-TS1 **46** **OPTIMAL DISPATCHING AND SIZING OF A POWER-TO-HEAT SYSTEM WITH MOLTEN-SALT THERMAL ENERGY STORAGE FOR INDUSTRIAL HEAT DECARBONIZATION**
Payla Lukasova (Czech Technical University in Prague)*; Adam Kubin (Czech Technical University in Prague)
- M2-TS1 **203** **OPTIMAL BATTERY SCHEDULING FOR SELF-SUFFICIENCY IN ENERGY COMMUNITIES: A CASE STUDY ON THE PVZEN MICROGRID**
Maria Lara Travaglini (Politecnico di Torino)*; Alessandro Ciocia (Politecnico di Torino); Gabriele Malgaroli (Politecnico di Torino); Filippo Spertino (Politecnico di Torino); Antonio D'Angola (Università della Basilicata)
- M2-TS1 **223** **INVERTER BASED NANOGGRID DESIGN WITH INTEGRATION OF PRIMARY, SECONDARY AND TERTIARY CONTROLS – A CASE STUDY**
Matteo Fresia (University of Genoa)*; Renato Procopio (University of Genoa); Anelya Urazbayeva (University of Genoa)
- M2-TS1 **230** **APPLICATION OF REINFORCEMENT LEARNING FOR EVS CHARGING MANAGEMENT IN LOW-VOLTAGE GRIDS: A CASE OF VOLTAGE REGULATION**
Sajjad Fattaheian Dehkordi (Aalto University)*; Gil Silva Sampaio (INESC TEC); Matti Lehtonen (Aalto University)
- M2-TS1 **239** **TESTING THE CONTINUOUSLY VARIABLE REACTANCE (CVR) FOR SMOOTH REACTIVE POWER COMPENSATION ON THE STUDY CASES**
Giulia Amato (Politecnico di Bari)*; Michał Polecki (Warsaw University of Technology); Desire Rasolomampionona (Warsaw University of Technology); Luigi Pio Savastio (Politecnico di Bari); Enrico Elio De Tuglie (Politecnico di Bari); Raman Herasimenka (Warsaw University of Technology)
- M2-TS1 **323** **OPTIMAL ALLOCATION OF ENERGY STORAGE AND RENEWABLES IN THE ENERGY MARKET AND IN PRIMARY FREQUENCY RESPONSE**
Ramin Ahmadi Kordkheili (Aalto University)*; Sajjad Fattaheian-Dehkordi (Aalto University); Matti Lehtonen (Aalto University)

WEDNESDAY H 9:00 > 11:00
Room IMPERIAL 1

POWER SYSTEMS AND SMART GRIDS - 2

Session Chair

Theofilos Papadopoulos

Aristotle University of Thessaloniki

- M2-TS2 **9** **PREDICTIVE STRESS ASSESSMENT
IN POWER DISTRIBUTION SYSTEMS USING BI-MAMBA+**
"Iason Minousis Gram (Southern Denmark University);
Hamid Mirshekali (Southern Denmark University)*;
Hamid Reza Shaker (Southern Denmark University)"
- M2-TS2 **58** **DEEP NEURAL NETWORK-BASED
POWER SYSTEM STATE ESTIMATION**
Davide Gotti (IMDEA Energy)*
- M2-TS2 **83** **DEGRADATION-AWARE CHARGING STRATEGIES
FOR BIDIRECTIONAL ELECTRIC VEHICLES
USING DEEP REINFORCEMENT LEARNING**
Thomas Franzelin (Institute for Mechatronic Systems - TU Darmstadt)*;
Stephan Rinderknecht (Institute for Mechatronic Systems - TU Darmstadt)
- M2-TS2 **123** **GRAPH NEURAL NETWORK-BASED CRITICAL NODE
CLASSIFICATION IN CYBER-PHYSICAL POWER SYSTEMS**
Mehdi Doostinia (Politecnico di Milano)*;
Shahab Zare (Tarbiat Modares University);
Zeinab Ghassemi Zahan (Brock University);
Davide Falabretti (Polytechnic University of Milan);
Sadegh Bolouki (Polytechnic University of Montréal);
Giacomo Verticale (Polytechnic University of Milan)
- M2-TS2 **210** **CYBERPHYSICAL STEALTHY TIME SYNCHRONIZATION ATTACK
ON VOLTAGE STABILITY MONITORING**
Saghar Vahidi (Concordia University);
Mohammad Ali Sayed (Concordia University)*;
Mohsen Ghafouri (Concordia University);
Marthe Kassouf (Hydro Quebec);
Arash Mohammadi (Concordia University);
Mourad Debbabi (Concordia University)
- M2-TS2 **328** **THE POP CONCEPT: A NOVEL BACKUP POWER DESIGN STRATEGY**
Bharath Sugumar (University of Pavia)*
Norma Anglani (University of Pavia)

WEDNESDAY H 9:00 > 11:00
Room IMPERIAL 2

SS04 TRANSPORT SYSTEMS AND SUSTAINABLE MOBILITY - 1

Session Chair

Mariano Gallo

University of Sannio

Maria Vittoria Corazza

Sapienza University of Rome

- M2-TS3 3** **SUSTAINABILITY OF TRANSPORTATION
IN NATURAL RESERVE AREAS: CASE STUDY**
Andrea Di Martino (Politecnico di Milano);
Sofia Borgosano (Politecnico di Milano)*;
Michela Longo (Politecnico di Milano);
Dario Zaninelli (Politecnico di Milano)
- M2-TS3 12** **OPTIMAL LOCATION OF REFUELLING STATIONS
FOR HYDROGEN-POWERED FREIGHT VEHICLES:
A COMPARISON OF SOLUTION ALGORITHMS**
Mariano Gallo (Universita' del Sannio - Dipartimento di Ingegneria)
- M2-TS3 99** **ENVIRONMENTAL IMPACT OF CHARGING PRIVATE BATTERY
ELECTRIC VEHICLES STARTING FROM REAL CARBON
DIOXIDE EMISSIONS FACTORS FOR ELECTRICITY PRODUCTION IN ITALY**
Elisa Marrasso (University of Sannio); Chiara Martone (University of Sannio);
Giovanna Pallotta (University of Sannio); Ilenia Perugini (University of Sannio);
Carlo Roselli (University of Sannio); Maurizio Sasso (University of Sannio)
- M2-TS3 161** **ADVANCING STREET LIGHTING DESIGN
WITH LED SOLUTIONS AND OPTICAL SYSTEM ENHANCEMENTS**
Anastasios Dimitrakis (National Technical University of Athens)*; Athanasios
Kotsenos (National Technical University of Athens); Vasillos Androvitsaneas
(National Technical University of Athens); Frangiskos Topalis (National Technical
University of Athens)
- M2-TS3 199** **SYSTEMATIC EVALUATION OF THE EVOLUTION
OF TRAFFIC FLOW PREDICTION
AND CORRELATION ANALYSIS METHODS**
Alessandra Tascione (University of Naples);
Gennaro Nicola Bifulco (University of Naples);
Luigi Pariota (University of Naples)*
- M2-TS3 289** **DEVELOPING VARIABLE SPEED LIMIT SCENARIOS
FOR COMPARATIVE ANALYSIS OF QUESTIONNAIRE SURVEYS
AND DRIVING SIMULATIONS**
Facundo Storani (University of Salerno Italy);
Behnood Baijy (University of Salerno);
Francesca Bruno (University of Salerno Italy);
Roberta Di Pace (University of Salerno)*;
Stefano De Luca (University of Salerno)

SS03 EFFICIENT BUILDINGS AND INDUSTRIAL PROCESSES: DRIVING THE ENERGY TRANSITION

Session Chairs

A. L. Palma, L. La Notte, M. Benedetti, B. Di Pietra, G. Puglisi, G. Landi
 ENEA

- M2-TS4-30 **ENERGY OPTIMIZATION OF OIL TERMINAL SHIPPING PUMPS' MOTORS: A COMPARATIVE STUDY OF MOTORS EFFICIENCIES AND OPERATION MODES**
 Mustafa AlRamadhan (Saudi Aramco)*; Abdullah AlDabbous (Saudi Aramco)
- M2-TS4-77 **A DATABASE FOR THE ENERGY CHARACTERIZATION OF INDUSTRIAL PROCESSES**
 Lorena Giordano (Italian National Agency for New Technologies, Energy and Sustainable Economic Development)*; Miriam Benedetti (Italian National Agency for New Technologies, Energy and Sustainable Economic Development)
- M2-TS4-187 **EXPERIMENTAL ANALYSIS OF A PHASE CHANGE MATERIAL-BASED PORTABLE PROTOTYPE FOR PERSONAL COOLING**
 Luigi Mongibello (ENEA)*; Adriano Macaluso (ENEA)
- M2-TS4-247 **ADLAS: AN INTEGRATED HARDWARE/SOFTWARE PLATFORM FOR THE IMPLEMENTATION OF DEMAND SIDE MANAGEMENT LOGICS IN THERMAL ENERGY COMMUNITIES**
 Alessandro Lorenzo Palma (ENEA)*; Alessandro Flamini (Sapienza University of Rome); Alessandro Galasso (Sapienza University of Rome); Ruggero Nissim (ENEA); Luca La Notte (ENEA); Biagio Di Pietra (ENEA)
- M2-TS4-251 **SELF-POWERED MONITORING PLATFORM FOR ENERGY-EFFICIENT BUILDINGS**
 Giovanni Landi (Enea)*; Luca La Notte (ENEA); Guerino Avallone (Salerno University); Carlo Barone (Salerno University); Sergio Pagano (Salerno University); Alessandro Lorenzo Palma (ENEA); Paolo Sdringola (ENEA); Giovanni Puglisi (ENEA)
- M2-TS4-262 **WEB-BASED ECO-FEEDBACK FOR ENERGY EFFICIENCY AND INDOOR COMFORT IN SMART DWELLINGS**
 Elisa Caracci (University of Cassino and Southern Lazio)*; Ilaria Bertini (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Laura Canale (University of Cassino and Southern Lazio); Marco Dell'Isola (University of Cassino and Southern Lazio); Biagio Di Pietra (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Giorgio Ficco (University of Cassino and Southern Lazio); Alessandra Gugliandolo (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Luca La Notte (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Emilio Monno (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Alessandro Lorenzo Palma (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Giovanni Puglisi (ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development)
- M2-TS4-282 **ROLE OF CONDUCTIVE FILLERS IN ORGANIC POLYMER COMPOSITES FOR THERMOELECTRIC PROPERTIES NEAR ROOM TEMPERATURE**
 Sajid Muhammad (University of Rome Tor Vergata); Andrea Reale (University of Rome Tor Vergata)*; Marcello Franzini (University of Turin); Simone Galliano (University of Turin); Claudia Barolo (University of Turin); Luca La Notte (ENEA); Simon Gócc (AGH University of Krakow)
- M2-TS4-319 **COMPARISON OF SMART READINESS INDICATOR AND ENERGY PERFORMANCE CERTIFICATE: MULTI-SCENARIO ANALYSIS FOR IMPROVING THE ENERGY EFFICIENCY OF RESIDENTIAL BUILDINGS**
 Alessandra Gugliandolo (enea); Elisa Carracci (University of Cassino and Southern Lazio); Laura Canale (University of Cassino and Southern Lazio); Giorgio Ficco (University of Cassino and Southern Lazio); Biagio Di Pietra (Department of Energy Efficiency ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Luca La Notte (Department of Energy Efficiency ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Alessandro Lorenzo Palma (Department of Energy Efficiency ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Emilio Monno (Department of Energy Efficiency ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development)

WEDNESDAY H 9:00 > 11:00
Room IMPERIAL 4

SS01 BUILDING THE PATH FOR A MORE SUSTAINABLE AND EFFICIENT RAIL TRANSPORTATION

Session Chairs

Morris Brenna

Politecnico di Milano

Luca D'Acierno

Federico II Università di Napoli

Luca Pugi

University of Florence

- M2-TS5 **23** **PRELIMINARY SIZING AND SIMULATION
OF BATTERY OPERATED TRAINS FOR THE LINE
BETWEEN REGGIO CALABRIA AND CATANZARO LIDO**
Luca Pugi (University of Florence)*; Nico Tiezzi (University of Florence);
Tommaso Elios Povolato (University of Florence)
- M2-TS5 **24** **FAST AND MODULAR IMPLEMENTATION
OF RAILWAY LINES MODELS FOR RT
AND HIL TESTING OF BEMU TRAINS**
Luca Pugi (University of Florence)*; Leandro Calandroni (University of Florence);
Gabriele Maria Lozito (University of Florence); Francesco Grasso (University of
Florence)
- M2-TS5 **51** **DEVELOPMENT OF EMBEDDED MODELS FOR HIL AND SIL TESTING OF
BATTERY SYSTEMS FOR RAILWAY APPLICATIONS**
Luca Pugi (University of Florence)*; Antonio Scardinia (University of Florence);
Aljon Kociu (University of Florence); Lorenzo Berzi (University of Florence); Nico
Tiezzi (University of Florence); Massimo Delogu (University of Florence)
- M2-TS5 **127** **SIMULATION FRAMEWORK FOR DC RAILWAY SYSTEMS
WITH DISTRIBUTED EV CHARGING STATIONS, STATIONARY
ENERGY STORAGES AND RENEWABLE ENERGY SOURCES**
Ana Cabrera Tobar (Politecnico di Milano);
Alberto Dolara (Politecnico di Milano)*; Nicolò Magnani (P)
- M2-TS5 **164** **A DIGITAL TWIN MODEL OF RAIL LINES
THROUGH THE USE OF OPEN-SOURCE DATABASES**
"Luca D'Acierno (Federico II University of Naples)*; Immacolata Cilento
(Federico II University of Naples); Luca De Matteis (Federico II University of
Naples); Rosario Stefanelli (Federico II University of Naples); Mario D'Avino (Ente
Autonomo Volturno); Sebastiano D'Avanzo (Ente Autonomo Volturno); Marilisa
Botte (Federico II University of Naples)"
- M2-TS5 **226** **BIDIRECTIONAL ENERGY CONTROL IN DC RAILWAYS
WITH RENEWABLE ENERGY SOURCES INTEGRATION
AND REVERSIBLE SUBSTATIONS**
"Hamed Jafari Kaleybar (Politecnico di Milano)*; Morris Brenna (Politecnico di
Milano); Dario Zaninelli (Politecnico di Milano)"

WEDNESDAY H 11:30 > 13:30
Room IMPERIAL MAIN HALL

SS24 INTELLIGENT ELECTRIC MOBILITY SYSTEMS: BATTERY STORAGE AND GRID INTEGRATION FOR SUSTAINABLE TRANSPORT

Session Chairs

Nicoletta Matera, Michela Longo

Politecnico di Milano

- N2-TS1 37 MONTE CARLO SIMULATION FOR ELECTRIC VEHICLE CHARGING: THE CASE STUDY OF MILAN - ITALY**
Cristian Colombo (Politecnico di Milano)*; Rachele Lazzarotto (Politecnico di Milano); Fabio Borghetti (Politecnico di Milano); Seydmahdi Miraftebzadeh (Politecnico di Milano); Wahiba Yaici (CanmetENERGY Research Centre); Michela Longo (Politecnico di Milano)
- N2-TS1 134 CHARGING STATION LOCALIZATION FOR BATTERY ELECTRIC TRUCKS ALONG TRANS-EUROPEAN TRANSPORT NETWORK IN ITALY**
Lorenzo Amaranto (RSE Italia)*; Sara Salamone (RSE Italia); Giuseppe Mauri (RSE Italia)
- N2-TS1 190 EVALUATION OF THE NMC/SI-GR BATTERY TECHNOLOGY FOR ELECTRIC VEHICLE APPLICATIONS**
Jorge Alonso del Valle (University of La Rioja); Juan Carlos Viera (University of Oviedo)*; Manuela González (University of Oviedo); Enrique Ernesto Valdés Zaldívar (University of Oviedo); Víctor García Fernández (University of Oviedo)
- N2-TS1 233 A TECHNO-ECONOMIC ASSESSMENT OF INTEGRATED PHOTOVOLTAIC BATTERY STORAGE SYSTEMS FOR INDUSTRIAL APPLICATIONS IN NORTHERN ITALY**
Nicoletta Matera (Politecnico di Milano)*; Riccardo Ramaschi (Politecnico di Milano); Ana Cabrera-Tobar (Escuela Politécnica Nacional); Emanuele Giovanni Ogliaari (Politecnico di Milano); Sonia Leva (Politecnico di Milano)
- N2-TS1 273 SMART BMS HARDWARE WITH ADVANCED SENSOR INTEGRATION AND EIS SOLUTION**
"PEGAH RAHMANI (Vrije Universiteit Brussel (VUB))*; Markus Reiter (Nanophysics and Sensor Technology, AVL List GmbH); Maximilian Gschaider (Nanophysics and Sensor Technology, AVL List GmbH); Sajib Chakraborty (Vrije Universiteit Brussel (VUB)); Omar Hegazy (Vrije Universiteit Brussel (VUB))"
- N2-TS1 283 V2G POTENTIAL IN ITALY: STATUS, CHALLENGES, AND FUTURE DIRECTIONS FROM A GRID AND CONSUMER PERSPECTIVE**
Zahid Ullah (University of Campania Luigi Vanvitelli)*; Michele De Santis (University of Campania Luigi Vanvitelli); Luigi Rubino (University of Campania Luigi Vanvitelli)
- N2-TS1 79 ELECTROMAGNETIC FIELD MEASUREMENTS WITH DYNAMIC WIRELESS POWER TRANSFER FOR CHARGING EV**
Michela Longo (Politecnico di Milano)*; Dario Zaninelli (Politecnico di Milano); Antonio Curnis (University of Brescia); Morris Brenna (Politecnico di Milano); Cristian Giovanni Colombo (Politecnico di Milano); Stefano Accinelli (Boston Scientific S.p.A.)

WEDNESDAY H 11:30 > 13:30
Room IMPERIAL 1

SSTI ADVANCEMENTS IN MONITORING AND DIAGNOSTICS OF PHOTOVOLTAIC SYSTEMS

Session Chairs

Alberto Dolara, Emanuele Ogliari
 Politecnico di Milano

- N2-TS2 105** **ADVANCED SENSOR-BASED SOLUTIONS
 FOR SAFE AUTONOMOUS TRANSPORTATION**
 sonali Teli (VPKBIET); Shivaji Raskar (VPKBIET)*; Saurabh Bhosale (VPKBIET);
 Akash Sathe (VPKBIET)
- N2-TS2 184** **HIGH-PERFORMANCE NUMERICAL MPPT
 FOR SUSTAINABLE AND ECONOMICAL PV SYSTEMS**
 "Moath Bani Melhem (University of Oviedo)*; Ramy Georgious (University of
 Oviedo); Arsenio Barbon (University of Oviedo)"
- N2-TS2 197** **SOILING IMPACT ON POWER PERFORMANCE
 OF CIS AND BIFACIAL PV: URBAN AND RURAL ENVIRONMENT ANALYSIS**
 "Emanuele Giovanni Ogliari (Politecnico di Milano)*; Sonia Leva (Politecnico di
 Milano); Alejandro Gonzalez (Politecnico di Milano)"
- N2-TS2 200** **IMPEDANCE SPECTROSCOPY OF BIFACIAL PHOTOVOLTAIC MODULES
 UNDER OUTDOOR CONDITIONS**
 Antonello Avella (Politecnico di Milano)*;
 Alberto Dolara (Politecnico di Milano);
 Giovanni Petrone (Università degli studi di salerno);
 Juan David Bastidas Rodriguez (Università degli studi di Salerno)
- N2-TS2 237** **AI-DRIVEN DIGITAL TWIN FOR CONDITION MONITORING
 AND REAL-TIME FAULT DETECTION IN PV SYSTEMS**
 Doha Kamal Mohamed Idris (Techinical University of Cluj - Napoca)*;
 Claudia Martis (Techinical University of Cluj - Napoca);
 Raymond BIRASA (Techinical University of Cluj - Napoca)
- N2-TS2 288** **A LOW-RESOURCE APPROACH TO GAN IMAGES GENERATION AND
 EVALUATION IN PHOTOVOLTAIC DATASETS**
 Marcello Polenghi (Universitas Mercatorum / Politecnico di Milano)*;
 Roberto Caldelli (Universitas Mercatorum);
 Claudio Loconsole (Universitas Mercatorum);
 Emanuele Ogliari (Politecnico di Milano)
- N2-TS2 272** **A NOVEL ML APPROACH FOR REAL-TIME PREDICTION OF PV
 PRODUCTION: TRACKING AND SELF-SHADING EFFECTS.**
 Angela Valeria Miceli (University of Palermo)*;
 Alessandro Buscemi (University of Palermo);
 Stefania Guarino (University of Palermo);
 Marina Bonomolo (University of Palermo);
 Valerio Lo Brano (University of Palermo);
 Fabio Massaro (University of Palermo)

WEDNESDAY H 11:30 > 13:30
Room IMPERIAL 2

SS04 TRANSPORT SYSTEMS AND SUSTAINABLE MOBILITY - 2

Session Chairs

Mariano Gallo

University of Sannio

Maria Vittoria Corazza

Sapienza University of Rome

- N2-TS3 61** **MAINLAND-ISLAND COMMUTING DURING THE OFF-SEASON:
A PARTICULAR LAST-MILE PROBLEM. THE CASE OF CAPRI ISLAND**
Marilisa Botte (Federico II University of Naples)*;
Anna Limmatola (Federico II University of Naples)
- N2-TS3 92** **RESHAPING MOBILITY TO OPTIMIZE HEALTHCARE ACCESSIBILITY
IN URBAN PERIPHERAL AREAS:
A GEOSPATIAL ANALYSIS ON A ROME DISTRICT**
Maria Vittoria Corazza (Sapienza University of Rome)*;
Paola Di Mascio (Sapienza University of Rome);
Chara Kagiaoglou (Sapienza University of Rome)
- N2-TS3 107** **ROBOTIC AUTOMATION OF RAILWAY CABLE LINE DIAGNOSTICS**
Tetiana Serdiuk (Ukrainian State University of Science and Technologies)*;
Kristina Kostenko (Ukrainian State University of Science and Technologies);
Yaroslav Bekh (Ukrainian State University of Science and Technologies);
Viktor Skalko (Ukrainian State University of Science and Technologies)
- N2-TS3 180** **ACTIVE MOBILITY AS A SUSTAINABLE TRANSPORT SYSTEM:
T-WSI EVALUATION IN THE HISTORICAL CENTER OF RIETI (ITALY)**
Rahwa Tariku Besrat (Department of Civil Building and Environmental
Engineering, Sapienza University of Roma)*; Letizia Appolloni (Department of
Civil Building and Environmental Engineering, Sapienza University of Roma);
Daniela D'Alessandro (Department of Civil Building and Environmental
Engineering, Sapienza University of Roma)
- N2-TS3 295** **DYNAMIC SIMULATION OF A HYBRID SOLAR POWER SYSTEM
UNDER FLUCTUATING IRRADIANCE CONDITIONS**
Tetiana Serdiuk (Ukrainian State University of Science and Technologies)*;
Maksym Serchenko (Ukrainian State University of Science and Technologies);
Yaroslav Bekh (Ukrainian State University of Science and Technologies)

WEDNESDAY H 11:30 > 13:30
Room IMPERIAL 3

HARMONICS AND POWER QUALITY

Session Chair

Kyriaki-Nefeli Malamaki

Independent Power Transmission Operator (IPTO)

- N2-TS4 110** **DIGITAL TWIN-BASED MICROPROCESSOR IMPLEMENTATION OF HIGH-ORDER HARMONIC RESILIENT THD ESTIMATION FOR DISTRIBUTION GRIDS**
Hamid Mirshekali (Southern Denmark University)*; Asger Overby (ReMoni); Mohammad Ali Khan (Southern Denmark University); Navid Bayati (Southern Denmark University); Bo Eskerod Madsen (ReMoni); Hamid Reza Shaker (Southern Denmark University)
- N2-TS4 126** **INVESTIGATION OF THE INFLUENCE OF TRACTION CURRENT HARMONICS ON AUTOMATIC LOCOMOTIVE SIGNALING**
Volodymyr Havryliuk (Ukrainian State University of Science and Technologies)*
- N2-TS4 248** **LOW-ORDER HARMONIC GENERATION BY A GRID-FOLLOWING PWM INVERTER UNDER UNBALANCED CONDITIONS**
Gerald Taylor (Auburn University)*; Mark Halpin (Auburn University)
- N2-TS4 286** **MECHANICAL EFFECTS OF LOAD CURRENT HARMONICS ON THE SYNCHRONOUS GENERATOR**
Lukas Malfait (Ghent University)*; Colin Debruyne (Ghent University); Jos Knockaert (Ghent University); Jan Desmet (Ghent University)
- N2-TS4 326** **DISCUSSION ON HARMONICS IN DC GRIDS AND THEIR INTERACTION WITH AC SYSTEM HARMONICS**
Kia Malekian Boroujeni (Chemnitz University of Technology)*; Fatemeh Abedini (Chemnitz University of Technology); Benjamin Jacobsen (Chemnitz University of Technology); Jens Teuscher (Chemnitz University of Technology); Kaveh Malekian (Brandenburg University of Technology)

WEDNESDAY H 11:30 > 13:30
Room IMPERIAL 4

**SS25 DC ARCHITECTURES
AND POWER ELECTRONICS
FOR THE FUTURE HYBRID AC-DC SYSTEMS**

Session Chairs

Luigi Martirano

Sapienza University of Rome

- N2-TS5 **124** **DYNAMIC DROOP-CONTROLLED GRID-FORMING
INVERTER STRATEGY FOR STABLE POWER SHARING
IN PV-INTEGRATED AC ISLANDED MICROGRIDS**
Sara Moustafa (FIU); Rawan Taha (FIU); Ahmed Ibrahim (FIU);
Ahmed Soliman (FIU); Mahmoud Amin (Manhattan University);
Osama Mohammed (FIU)*
- N2-TS5 **133** **OPTIMALITY ASSESSMENT OF HIERARCHICAL VERSUS
CENTRALIZED GRID CONTROL ACROSS DIVERSE
COMMUNITY FLEXIBILITY SCENARIOS**
"Yara AbdulSamadElSkaff (CEA)*;
Hugo Joudrier (Univ.Grenoble Alpes, CEA, Liten,Campus Ines);
Yacine Gaoua (Univ.Grenoble Alpes, CEA, Liten,Campus Ines);
Quoc Tuan Tran (Univ.Grenoble Alpes, CEA, Liten,Campus Ines)"
- N2-TS5 **331** **MODELLING AND SIMULATION OF MVDC GRID
FOR LINEAR PHOTOVOLTAIC SYSTEMS : A FIRST APPROACH**
Volana RANDRIANTELOMANANA (CEA)*
- N2-TS5 **103** **MULTI-FACTOR-TESTING OF PHOTOVOLTAIC INVERTERS
FOR AUTOMATIC FREQUENCY RESTORATION RESERVE**
Falko Ebe (Technische Hochschule Ulm)*;
Phuong Nguyen (Eindhoven University of Technology);
Guus Pemén (Eindhoven University of Technology);
Gerd Heilscher (Technische Hochschule Ulm)

WEDNESDAY H 11:30 > 13:30
Poster Area

PHD STUDENTS POSTER SESSION

Judging committee

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- N2-PS 322 PRELIMINARY RESULTS ON THE COORDINATION OF DC SURGE PROTECTIVE DEVICES FOR CHARGING STATIONS**
Alexandros Hadjicostas (Aristotle University of Thessaloniki)*;
Polina Mikropoulou (Aristotle University of Thessaloniki);
Athanasios Fanaras (Aristotle University of Thessaloniki);
Georgios Peppas (Technical University of Crete);
Thomas Tsovilis (Aristotle University of Thessaloniki)
- N2-PS 287 FIELD MEASUREMENTS AND ATP-EMTP SIMULATIONS OF CURRENT ASYMMETRY AND HARMONICS IN CROSS-BONDED MV CABLE SYSTEMS**
Michail Pitsikalis (Technical University of Crete)*;
Kostantinos Koutras (Technical University of Crete);
Georgios Peppas (Technical University of Crete);
Thomas Tsovilis (Aristotle University of Thessaloniki);
Kallirroi Voulgari (Raycap S.A.); Panagiotis Raptis (Raycap S.A.);
Eleftheria Pyrgioti (University of Patras);
Athanasios Aggelopoulos (Terna-Energy S.A.);
Panagiotis Manos (Terna-Energy S.A.)
- N2-PS 4 ELECTRIC VEHICLE USERS' PREFERENCES: SURVEY INSIGHTS ON PUBLIC CHARGING INFRASTRUCTURE**
Sofia Borgosano (Politecnico di Milano)*; Marco Curtarolo (A2A);
Fabio Viola (University of Palermo); Rosario Miceli (University of Palermo);
Sonia Leva (Politecnico di Milano); Michela Longo (Politecnico di Milano)
- N2-PS 40 STUDY OF A FLUORESCENT OPTICAL SENSOR FOR DC PARTIAL DISCHARGE UNDER DIFFERENT WAVELENGTH SHIFTING MATERIALS**
Karsten Schloßer (TU Dortmund University)*;
Tobias Kuhnke (TU Dortmund University);
Nico Blume (TU Dortmund University);
Frank Jenau (TU Dortmund University);
Philipp Ralle (TU Dortmund University);
Andreas Steffen (TU Dortmund University)
- N2-PS 42 PRELIMINARY INVESTIGATION ON THE SUSCEPTIBILITY OF A NOTEBOOK TO INTENTIONAL EMI**
Giuseppe Attolini (University of Rome "La Sapienza");
Salvatore Celozzi (University of Rome "La Sapienza");
Erika Stracqualursi (University of Rome "La Sapienza")*;
Marco Dionigi (University of Perugia);
Antonio Fabà (University of Perugia); Francesco Tissi (University of Perugia)
- N2-PS 66 STUDY THE HARMONICS OF LED LAMPS IN THE DOMESTIC ELECTRICAL SYSTEM**
Haseeb Shams (University of L'Aquila)*;
Andrea Fioravanti (University of L'Aquila);
Giulio Antonini (University of L'Aquila)
- N2-PS 125 A HYBRID DYNAMIC PROGRAMMING-EQUIVALENT CONSUMPTION MINIMISATION STRATEGY BASED ENERGY MANAGEMENT FOR AIRCRAFT FAILURE CONDITIONS**
Ayesha Wise (University of Nottingham)*;
Sharmila Sumsurooah (University of Nottingham);
Osama Hebala (University of Nottingham);
Serhiy Bozhko (University of Nottingham);
Seang Yeoh (University of Nottingham)

PHD STUDENTS POSTER SESSION

Judging committee

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- N2-PS **128** **MODELLING OF AIRCRAFT ELECTRIC PROPULSION SYSTEM WITH FAILURE-RESPONSE ENERGY MANAGEMENT**
Ayesha Wise (University of Nottingham)*;
Sharmila Sumsurooah (University of Nottingham);
Osama Hebala (University of Nottingham);
Serhiy Bozhko (University of Nottingham);
Seang Yeoh (University of Nottingham)
- N2-PS **186** **ADDITIVE WEIBULL SURVIVAL ANALYSIS OF DISTRIBUTION TRANSFORMERS IN THE PRESENCE OF CENSORING AND TRUNCATION**
Niek Brekelmans (Eindhoven University of Technology)*;
Yifan Zhang (Eindhoven University of Technology);
Phuong Nguyen (Eindhoven University of Technology);
Anne van der Molen (Eindhoven University of Technology);
Peter Van der Wielen (Eindhoven University of Technology)
- N2-PS **189** **HARDWARE-ORIENTED LUT GENERATION ALGORITHM FOR D-Q AXIS STATOR CURRENT REFERENCE IN ELECTRIC DRIVE SYSTEMS**
Elia Grano (Politecnico di Torino)*; Massimiliana Carello (Politecnico di Torino)
- N2-PS **252** **OPTIMIZATION OF A BATTERY ENERGY STORAGE SYSTEM IN A SICILIAN RENEWABLE ENERGY ZONE**
nicola collura (Università Degli Studi di Palermo)*;
Fabio Massaro (Università degli studi di Palermo);
Enrica Di Mambro (Terna S.p.A.); Salvatore Paradiso (Terna S.p.A.);
Francesco Montana (Università degli studi di Palermo);
Alessandro Buscemi (Università degli studi di Palermo)
- N2-PS **242** **INSTALLATION OF PHOTOVOLTAIC SYSTEMS ON HIGHWAYS: THE CASE STUDY OF THE ITALIAN A2 HIGHWAY (SALERNO - REGGIO CALABRIA)**
Vincenzo Di Dio (University of Palermo)*;
Angelo Avenia (University of Palermo);
Giovanni Cipriani (University of palermo);
Antonino Riccobono (University of Palermo)
- N2-PS **344** **PRIMARY DISTRIBUTION NETWORK RE-ENERGIZATION THROUGH MULTIPLE BLACK START UNITS**
Francesco Lorusso (DEI - Politecnico di Bari)*;
Angelo Velini (DEI - Politecnico di Bari);
Roberto Cometa (DEI - Politecnico di Bari);
Marco Menga (DEI - Politecnico di Bari);
Sergio Bruno (DEI - Politecnico di Bari);
Massimo La Scala (DEI - Politecnico di Bari)
- N2-PS **349** **DYNAMIC CHARACTERIZATION OF A CAPACITIVE DEIONIZATION CELL FOR INTEGRATION WITH THE POWER STAGE**
María G. Busto (Universidad de Oviedo)*;
Juan Díaz González (Universidad de Oviedo);
Miguel J. Prieto (Universidad de Oviedo);
Mostafa Kermani (University of Skövde); A
Iberto Martín Pernía (Universidad de Oviedo)



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Plenary Session

Wednesday, **July 16**
Start **15:30**

@ Minoa Palace Resort, **Imperial Main Hall**

Dr. **THEODOROS MOUSELINOS**
Keynote Speaker

PRESENTATION TITLE
**MULTILEVEL INVERTERS FOR PV SYSTEMS:
INSIGHTS BEYOND THE CLASSIC TOPOLOGIES**

ABSTRACT

The photovoltaic (PV) systems offer multiple advantages for the production of clean energy, and this is the reason why they are placed at the top of investments in the last few years. Despite that the classic widely used topologies are reliable, in more and more applications multilevel inverter technology is deployed the last years, due to their advantages in lower voltage and power levels, such as increased efficiency and power density. Nevertheless, the adoption of such advanced topologies introduces some limitations, and for this reason constant efforts are made by the academia and industry to overcome the challenges. More specifically, in PV systems, where the boosting capability is also a must, academia and industry are making efforts to introduce hybrid topologies of multilevel inverters trying to combine the advantages of the multisteped voltage waveform with the voltage boosting capability. The classical PV system cascaded architecture of a Boost converter followed by a DC/AC converter is reliable, but further research is conducted towards hybrid topologies, featuring also partial processing characteristics to increase the overall power conversion efficiency. Analytical mathematical loss models, and optimization tools are necessary during the design phase, pushing the efficiency of these hybrid topologies close or even beyond the 99 % limit. Although efficiency is a major topic, compliance with the standards is also crucial, and thus the overall control structure along with the modulation technique should be considered. Concluding, the constant efforts in both industry and academia, and the newest Wide Band Gap technology, which pushes the Figure of Merits of the semiconductor devices higher, denote a wide adoption of multilevel converter topologies in wide spectrum of applications, voltage classes and power levels in the future.

SHORT CV

Theodoros Mouselinos received the Dipl. Degree in electrical and computer engineering in 2018 and the Ph.D. degree in power electronics in 2024 from the University of Patras, Rion- Patras, Greece. His research interests include the analysis, design, optimization and control of multilevel DC/AC converters and DC/DC converters for Renewable Energy Systems. From September 2022 until March 2024, he was holding the position of the R&D engineer at Raycap Inc., and he was responsible for the design and evaluation of high efficiency DC/DC converters for telecom infrastructure. From April 2024 until now, he holds the position of the System Application Engineer at Infineon Technologies Austria AG, focusing on AC/DC and high frequency DC/DC converters for datacenters.



Prof. **ENRICO RAGAINI**
Keynote Speaker

PRESENTATION TITLE
IS DC REALLY COMING BACK?

ABSTRACT

At the dawn of electrical technology, after some initial uncertainty, AC was chosen over DC as the system of choice for power distribution and utilization. About 100 years later, HVDC showed that DC can still have an important role, albeit in a restricted field. Recently, however, we see a comeback of DC in a number of applications: distributed generation, industry, buildings, and power distribution. LVDC and MVDC start to be considered as possible options, and will more and more be in the future. Together with new opportunities and advantages, this brings several challenges to both device manufacturers and system designers. In addition to technology and industrial aspects, regulatory issues and market considerations will have an importance. Some lesson can probably be learned from the past evolution of AC systems.

SHORT CV

Enrico Ragaini (Senior Member, IEEE) graduated in Electronics Engineering at Politecnico di Milano in 1991, and in 1996 he obtained a PhD in Electrical Engineering from the same institution.

After serving 2 years as a Professor at Universidad de Piura, Peru, he joined ABB, first in Corporate Research and then in the Low Voltage Products division.

He held various positions in R&D and Product Management for Low Voltage Circuit Breakers, focusing on electronic protection units, embedded communication and system supervision.

He has been in charge of Technical Training for the ABB Low Voltage Breakers global factory (2004 - 2010), and then Cyber Security manager for the ABB Low Voltage Products division (2011-2014). He is currently with the R&D of ABB Electrification business, in charge of innovation projects.

He is also professor of Electrical Switching Devices at Politecnico di Milano. His research interests include electrical measurements, protection and switching devices, and real-time simulation of power systems.



Mr. **ANASTASIS TSOUMANIS**
Keynote Speaker

PRESENTATION TITLE
IKARIA HYBRID ENERGY PROJECT “NAERAS”

ABSTRACT

In Ikaria, the Hybrid Energy Project “NAERAS,” developed by PPC Renewables, combines wind power with pumped hydro storage to support energy generation through small hydro power plants (SHPPs).

The integration of hydroelectric turbines (HTs) in Non-Interconnected Island (NII) poses stability challenges, especially due to frequent power fluctuations.

To address this, novel deflector control schemes were implemented on Pelton-type turbines, enabling HTs to provide ancillary services during frequency disturbances while a second-cycle synchronization scheme of wind production and pumping has achieved impressive levels of RES penetration at the Non- Interconnected Island of Ikaria.

SHORT CV

Anastasis Tsoumanis is an Electrical and Computer Engineer specialized in hybrid energy systems, battery storage, and electromobility. Since 2020, he has worked as a Project Engineer and Project Manager at PPC Renewables, leading the design and implementation of cutting-edge Hybrid Power Stations and BESS projects in Greece. He has previous experience as a Control Engineer in e-mobility startups and as a technical advisor for research labs in renewable energy. His work has contributed to national-level energy innovation, with publications in CIGRE and other international forums. He holds an M.Eng. from the National Technical University of Athens and was awarded 3rd place in the Valeo Innovation Challenge 2017.





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Welcome Cocktail

Wednesday, **July 16**
Start **19:30**
@ **Minoa Palace Resort**

THURSDAY H 9:00 > 11:00
Room IMPERIAL MAIN HALL**RENEWABLE ENERGY AND STORAGE - 3**

Session Chair

George Peppas

Technical University of Crete

- M3-TS1 21** **COMPARISON OF ALTERNATIVES FOR RURAL ELECTRIFICATION IN ECUADOR: CASE STUDY OF ISLETS IN THE GULF OF GUAYAQUIL**
Gomer Rubio (Escuela Superior Politécnica del Litoral (ESPOL))*;
Juan Avilés (Escuela Superior Politécnica del Litoral (ESPOL));
Elias Bustos (Escuela Superior Politécnica del Litoral (ESPOL))
- M3-TS1 167** **HYBRID HVAC-HVDC GRIDS: REVIEW ON TECHNO-ECONOMIC, SOCIETAL, AND REGULATORY ASPECTS**
Kyriaki-Nefeli Malamaki (Independent Power Transmission Operator)*;
Georgios Barzegkar-Ntovom (Independent Power Transmission Operator);
Mustafa Seker (Sivas Cumhuriyet University); Serafeim Panidis (Independent Power Transmission Operator); Ahmet Aksoz (Kayseri University); Stefania Gatou (Independent Power Transmission Operator); Fotis Paterakis (Independent Power Transmission Operator); Ioannis Moraitis (Independent Power Transmission Operator); Saadin Oyucu (Gazi University); Emre Unsal (Sivas Cumhuriyet University)
- M3-TS1 185** **REPLACEMENT RESERVE SUPPLY FROM INVERTER-BASED GENERATORS IN A 2030 ITALIAN SCENARIO**
Silvia Canevese (Ricerca sul Sistema Energetico - RSE)*;
Federica Davò (MBS CONSULTING);
Antonio Gatti (Ricerca sul Sistema Energetico - RSE)
- M3-TS1 259** **OPTIMISING DIFFUSE SELF-CONSUMPTION AND ECONOMIC BENEFITS WITH DISTRIBUTED STORAGE IN RENEWABLE ENERGY COMMUNITIES**
EMILIO GHIANI (Emilio Ghiani)*;
Davide Murgia (University of Cagliari);
Federico Mattana (University of Cagliari);
Gian Giuseppe Soma (University of Cagliari);
Alessia Cagnano (Mediterranea Univ. of Reggio Calabria);
Stefania Conti (University of Catania)
- M3-TS1 334** **AN ANALYSIS OF DATA QUALITY AND TIME RESOLUTION IN CLUSTERING BASED ON POLISH PROSUMER REAL WORLD DATA**
Cagdas Karakus (Wroclaw University of Science and Technology);
Michał Jasiński (Wroclaw University of Science and Technology)*;
Zbigniew Leonowicz (Wroclaw University of Science and Technology)
- M3-TS1 31** **OPTIMIZED DEMAND-SIDE MANAGEMENT FOR A SOLAR-INTEGRATED NORWEGIAN PILOT HOUSE**
Meysam Aboutalebi (Department of Technology Systems, University of Oslo)*;
Martin Bagherpour (Department of Technology Systems, University of Oslo);
Josef Noll (Department of Technology Systems, University of Oslo);
Geir Horn (Department of Informatics, University of Oslo)

POWER SYSTEMS AND SMART GRIDS - 3

Session Chair
Konstantinos Gyftakis
Technical University of Crete

- M3-TS2 16** **DETERMINISTIC MULTI-ENERGY LOAD FORECASTING FOR INTEGRATED ENERGY MANAGEMENT SYSTEM USING A RANDOM SEARCH TRANSFORMER NETWORK**
Nuttapat Jittratorn (National Cheng Kung University)*;
Truong Thi Thu Uyen (National Cheng Kung University);
Yu-Cheng Chen (National Cheng Kung University);
Chao-Ming Huang (Kun Shan University);
Hong-Tzer Yang (National Cheng Kung University)
- M3-TS2 118** **REAL-TIME HIL COMPARISON OF VIRTUAL OSCILLATOR AND DROOP CONTROL FOR INVERTER-BASED RESOURCES**
S M Sajjad Hossain Rafin (Florida International University)*;
Ahmed Ibrahim (Florida International University);
Osama Mohammed (Florida International University)
- M3-TS2 218** **SHORT-TERM FORECAST OF VERTICAL GRID LOAD WITH HIGH RENEWABLES PENETRATION: A CASE-STUDY FROM CROATIAN POWER SYSTEM**
Ivan Pavičić (HOPS)*; Filip Grebenar (HOPS)
- M3-TS2 220** **COMPARATIVE ASSESSMENT OF VIRTUAL INERTIA IN GRID FORMING-BASED WIND TURBINES**
Marcelo Cardenas (University of Genova);
Fabio D'Agostino (University of Genova);
Matteo Saviozzi (University of Genova)*;
Federico Silvestro (University of Genova);
Francesco Conte (Università Campus Bio-Medico di Roma)
- M3-TS2 284** **MODULAR LOAD ESTIMATION FRAMEWORK FOR LOW-OBSERVABILITY DISTRIBUTION NETWORKS: CRETE CASE STUDY**
Georgios Falekas (HEDNO)*; Ilias Manitaris (HEDNO);
Efstratia Sarafoglou (HEDNO)
- M3-TS2 294** **COMPLEX FREQUENCY-BASED VIRTUAL INERTIA CONTROL FOR FREQUENCY REGULATION IN LOW-INERTIA POWER SYSTEM**
Tung-Kha Nguyen (Eindhoven University of Technology)*;
Trung Thai Tran (Eindhoven University of Technology);
Florian Bingel (Eindhoven University of Technology);
Huy H. B. Truong (Eindhoven University of Technology);
Phuong H. Nguyen (Eindhoven University of Technology)

THURSDAY H 9:00 > 11:00
Room IMPERIAL 2**SS07 DC SMART GRIDS FOR NEXT GENERATION
TRANSPORTATION SYSTEMS**

Session Chairs

Pietro Colella

Politecnico di Torino

Domenico Giordano

INRIM

Vincenzo Trovato

University of Trento

- M3-TS3 195 ENERGY-BASED SCHEDULING OF BIDIRECTIONAL EV CHARGING UNDER DEGRADATION AND GRID CONSTRAINTS IN LONG-TERM PARKING SCENARIOS**
Francisco de Larriva Serrano (Universidad de Córdoba)*;
Joaquín Garrido-Zafra (Universidad de Córdoba);
Aurora Gil-de-Castro (Universidad de Córdoba);
Antonio Moreno-Munoz (Universidad de Córdoba);
Joaquín Muñoz-Moreno (Universidad de Córdoba);
Javier Vazquez (Universidad de Castilla La Mancha)
- M3-TS3 234 COMPARATIVE MILP-BASED ENERGY COST OPTIMIZATION FOR SMART RAILWAY HUBS INTEGRATING EV CHARGING, PV, AND ENERGY STORAGE**
Rian Yulianto (Politecnico di Milano); Hamed Jafari Kaleybar (Politecnico di Milano)*; Morris Brenna (Politecnico di Milano)
- M3-TS3 253 OPTIMAL OPERATION OF A SMART ELECTRIFIED TRACTION SYSTEM: A REVIEW**
Silvia Botondi (University of Trento, Trento, Italy)*;
Vincenzo Trovato (University of Trento, Trento, Italy);
Pietro Colella (Politecnico di Torino, Torino, Italy);
Enrico Pons (Politecnico di Torino, Torino, Italy);
Muhammad Waseem (Politecnico di Torino, Torino, Italy);
Domenico Giordano (Istituto Nazionale di Ricerca e Metrologia, Torino, Italy);
Davide Signorino (Istituto Nazionale di Ricerca e Metrologia, Torino, Italy)
- M3-TS3 254 VOLTAGE DIVIDER DESIGN FOR DC TRACTION IN TRAMWAY NETWORKS**
Domenico Giordano (inrim)*; Palma Letizia (INRIM);
Davide Signorino (INRIM); Pietro Colella (Politecnico di Torino);
Enrico Pons (Politecnico di Torino);
Muhammad Waseem (Politecnico di Torino);
Silvia Botondi (Università di Trento);
Vincenzo Trovato (Università di Trento)
- M3-TS3 256 DIGITAL TWIN IMPLEMENTATION FOR URBAN TRAM SYSTEMS: A DATA-DRIVEN MODEL FOR ESTIMATING TRACTION CURRENT**
Pietro Colella (Politecnico di Torino)*; Enrico Pons (Politecnico di Torino);
Muhammad Waseem (Politecnico di Torino - Dipartimento Energia);
Daniele Genisio (Politecnico di Torino); Silvia Botondi (Università di Trento);
Domenico Giordano (INRIM); Davide Signorino (INRIM);
Vincenzo Trovato (Università di Trento)
- M3-TS3 270 SCALABLE OPTIMIZATION OF ELECTRIC VEHICLE FLEETS IN VIRTUAL POWER PLANTS: CENTRALIZED VERSUS DECENTRALIZED IMPLEMENTATION**
Flavio Bordin (Politecnico di Torino);
Marco Magnanini (Politecnico di Torino);
Marco Ronchetti (Politecnico di Milano);
Lucio Antonio Rosi (Politecnico di Milano);
Riccardo Ramaschi (Politecnico di Milano)*;
Julien Rappe (Free2move eSolutions);
Vinicio Lupo (Free2move eSolutions);
Sonia Leva (Politecnico di Milano); Tania Cerquitelli (Politecnico di Torino)

THURSDAY H 9:00 > 11:00
Room IMPERIAL 3

**SS18 PNRR PE2 SPOKE 8 –
FINAL USE OPTIMIZATION, SUSTAINABILITY &
RESILIENCE IN ENERGY SUPPLY CHAIN:
A RIGHT TRACK FOR A GREENER FUTURE**

Session Chairs

Giuditta Pisano

University of Cagliari

Cristina Moscatiello

Sapienza University of Rome

Luigi Calcara

Sapienza University of Rome

- M3-TS4 82 A NON-INTRUSIVE LOAD MONITORING ALGORITHM BASED ON FOURIER TRANSFORM AND HARMONICS IDENTIFICATION**
Maria Luisa Di Silvestre (University of Palermo);
Mauro Galluzzo (University of Palermo);
Francesco Montana (University of Palermo)*;
Eleonora Riva Sanseverino (University of Palermo);
Eleonora Sciume' (University of Palermo)
- M3-TS4 98 PERFORMANCE EVALUATION OF POWER SHARING MODEL APPLIED TO VIRTUAL AGGREGATIONS**
Cristina Moscatiello (Sapienza, University of Rome); Roberto Menichelli (Sapienza Univ. of Rome); Riccardo Loggia (Sapienza, University of Rome)*;
Andrea Golino (Sapienza, University of Rome); Lorenzo Frattale Mascioli (Sapienza, University of Rome); Luigi Martirano (Sapienza, University of Rome)
- M3-TS4 106 ASSESSMENT OF DEMAND-SIDE MANAGEMENT STRATEGIES IN PV-INTEGRATED RESIDENTIAL SYSTEMS**
Saeed Khorrami (Sapienza, University of Roma)*; Riccardo Loggia (Sapienza, University of Roma); Maria Carmen Falvo (Sapienza, University of Roma); Luigi Martirano (Sapienza, University of Roma)
- M3-TS4 112 COMBINED FRACTIONAL DERIVATIVE APPROACH FOR VERY SHORT-TERM PHOTOVOLTAIC POWER FORECASTING**
Davide Lauria (University of Naples Federico II);
Fabio Mottola (University of Naples Federico II);
Daniela Proto (University of Naples Federico II)*
- M3-TS4 136 POWER SYSTEM RESILIENCE ENHANCEMENT AND RESTORATION STRATEGIES**
Alexandros Kanousis (CERTH); Maria Fotopoulou (Centre for Research and Technology Hellas)*; Marta Bernal Sancho (CIRCE); Gonzalo Martin Sanchez Escriche (CIRCE); Georgios Rizos (CERTH); Paschalis Gkaidatzis (CERTH);
Dimitrios Rakopoulos (CERTH); Dimosthenis Ioannidis (CERTH); Dimitrios Tzovaras (CERTH)
- M3-TS4 335 OPERATIONAL STRATEGY MODELING FOR ENHANCING DISTRIBUTION NETWORK RESILIENCE ASSESSMENT**
Adriano Casu (Università di Cagliari);
Fabrizio Pilo (University of Cagliari);
Giuditta Pisano (University of Cagliari)*;
Gian Giuseppe Soma (University of Cagliari)
- M3-TS4 342 HIGH VOLTAGE ELECTRICAL GRIDS: INDICES FOR OPERATIONAL RESILIENCE ASSESSING**
Luigi Calcara (Sapienza University of Rome)*;
Simone Talomo (Terna Rete Italia);
Chiara Vergine (Terna Rete Italia);
Gabriele Biasiotti (Terna Rete Italia);
Massimo Pompili (Sapienza University of Rome)

THURSDAY H 9:00 > 11:00
Room IMPERIAL 4

SST7 MODELING AND DESIGN OF ELECTRIC SYSTEMS AND COMPONENTS FOR TRANSIENT STUDIES

Session Chairs

Erika Stracqualursi

Sapienza University of Rome

- M3-TS5 13** **WAVE PROPAGATION CHARACTERISTICS IN OFFSHORE PIPE-TYPE SUBMARINE CABLES: MODELING AND INSIGHTS**
Jesus E. Guevara Asorza (University of Campinas);
Theofilos Papadopoulos (Aristotle University of Thessaloniki)*;
Jose Pissolato Filho (University of Campinas)
- M3-TS5 62** **TLM-BASED MODELS TO REPRESENT PROPAGATION STUDIES: A GROUNDING SYSTEMS APPLICATION**
Daniel Gazzana (Federal University of Rio Grande do Sul (UFRGS))*;
Alex Bernsts Tronchoni (Federal University of Rio Grande do Sul (UFRGS));
Maria Teresa Correia de Barros (Instituto Superior Técnico da Universidade de Lisboa (IST))
- M3-TS5 63** **TLM-3D APPROACH APPLIED TO GROUNDING SYSTEMS CONSIDERING A DYNAMIC SOIL IONIZATION MODEL**
Lucas Tupi Caldas Pulz (Federal University of Rio Grande do Sul (UFRGS));
Daniel Gazzana (Federal University of Rio Grande do Sul (UFRGS))*; Marcos Tello (Vor Electric); Maria Teresa Correia de Barros (Instituto Superior Técnico da Universidade de Lisboa (IST))
- M3-TS5 113** **INDUCED CABLE SHEATH VOLTAGE CALCULATIONS CAUSED BY FAULTS IN ONSHORE WIND PARKS**
Theofilos Papadopoulos (Aristotle University of Thessaloniki)*;
Efsthios Tsaros (University of Thessaly);
Achilleas Sfetkos (Aristotle University of Thessaloniki);
Georgios Kryonidis (Aristotle University of Thessaloniki);
Alexis Polycarpou (Frederick University)
- M3-TS5 168** **PARAMETER ESTIMATION OF FREQUENCY DEPENDENT DYNAMIC LOAD MODEL AS SEEN FROM HV NODES**
Roberto Benato (University of Padova); Sebastian Dambone Sessa (University of Padova); Giorgio Maria Giannuzzi (Terna S.p.A.); Cosimo Pisani (Terna S.p.A.); Marco Principe (Terna S.p.A.); Agnese Salviato (University of Padova); Francesco Sanniti (University of Padova)*; Salvatore Tessitore (Terna S.p.A.)
- M3-TS5 301** **A SURVEY OF MEASUREMENTS AND ANALYSES OF PRELIMINARY BREAKDOWN PULSES IN LIGHTNING FLASHES**
Sami Barmada (University of Pisa); Andrea Bonfiglio (University of Genoa)*;
Massimo Brignone (University of Genoa); Shayan Dodge (University of Pisa); Alessandro Formisano (University of Campania);
Renato Procopio (University of Genoa); Ehsan Akbari Sekehravani (CNR)

THURSDAY H 11:30 > 13:30
Room IMPERIAL MAIN HALL

SS10 MULTI-ENERGY AND MULTI-SECTOR SYSTEMS AS A TOOL TO IMPROVE THE STABILITY, RELIABILITY AND RESILIENCE OF THE ELECTRIC POWER SYSTEMS

Session Chairs

Anna Pinnarelli, Pasquale Vizza

University of Calabria

- N3-TSI 56 MULTI-ENERGY SYSTEMS OPTIMIZATION WITH HYDROGEN INTEGRATION**
"Francisco B.C.E. Santo (Faculty of Engineering, University of Porto, Porto, Portugal); Sérgio F. Santos (University of Beira Interior and C-MAST, Covilhã, Portugal); Morteza Vahid-Ghavidel (INESC TEC); Mohammad Sadeq Javadi Estahbanati (INESC TEC)*; João P. S. Catalão (Faculty of Engineering, University of Porto, Porto, Portugal)"
- N3-TSI 73 RESILIENCE ENHANCEMENT FOR OFFSHORE ISLANDS GRIDS: INTEGRATING UNMANNED INSPECTION AND MULTI-ISLAND POWER COORDINATION**
Minqiao Zheng (Shanghai University); Zejun Yang (Shanghai University)*; Shuai Pang (China Academy of Information Communications Technology); Ruoyu Zhang (Huazhong University of Science and Technology)
- N3-TSI 121 TECHNO-ECONOMIC EVALUATION OF A MULTI-ENERGY MICROGRID FOR INDUSTRIAL APPLICATIONS**
"Paolo D'Angelo (University of Salerno)*; Berk Celik (Université de technologie de Compiegne); Manuela Sechilariu (Université de technologie de Compiegne); Walter Zamboni (University of Salerno)"
- N3-TSI 132 THE ENERGY AND TRANSPORT SECTORS COUPLED TO PROVIDE ANCILLARY SERVICES TO ELECTRICAL NETWORK**
Fabio Gallo (Università della Calabria)*; Pasquale Vizza (Università della Calabria); Anna Pinnarelli (Università della Calabria); Maria Elena Bruni (Università della Calabria)
- N3-TSI 160 SITE SELECTION FRAMEWORK FOR RESILIENT POWER SUPPLY OF TELECOMMUNICATION BASE STATIONS**
ANA CABRERA-TOBAR (ESCUELA POLITÉCNICA NACIONAL)*; Pablo Sarriá Montes (Politécnico di Milano); Francesco Grimaccia (Politécnico di Milano); Sonia Leva (Politécnico di Milano)
- N3-TSI 240 HYDROGEN SIZING IN SECTOR-COUPLED ENERGY SYSTEMS: A POWER-TO-GAS MODELLING APPROACH**
Pasquale Vizza (University of Calabria)*; Vittorio Bilotta (University of Calabria); Anna Pinnarelli (University of Calabria); Giovanni Sciambarruto (University of Calabria)
- N3-TSI 258 COMPREHENSIVE ASSESSMENT OF THE IMPACT OF LARGE-SCALE SOLAR POWER PLANTS WITH WECC CONTROLLERS ON INTER-AREA OSCILLATIONS IN THE POWER GRID**
Ahlem Aissa Berraies (Laval university)*; Siavash Yari (Laval university); Abbas Rabiee (Laval university); Innocent Kamwa (Laval university)

THURSDAY H 11:30 > 13:30
Room IMPERIAL 1

**SS12 ADVANCING BATTERY TECHNOLOGIES:
PARAMETER ESTIMATION, PERFORMANCE
OPTIMIZATION, AND MANAGEMENT
FOR GRID FLEXIBILITY**

Session Chairs

Emanuele Ogliari, Alberto Dolara
Politecnico di Milano

- N3-TS2 14** **HYBRID METHOD FOR STATE OF CHARGE ESTIMATION:
AN EXPERIMENTAL STUDY**
Orçun Tuna (Hacettepe University)*; Uğur Baysal (Hacettepe University)
- N3-TS2 104** **HYBRID NANOCOMPOSITE (MXENES, GRAPHENE, AND SILICON)
ANODES FOR GRID-SCALE LITHIUM-ION BATTERIES**
Musab Hammas Khan (University of Salerno)*;
Vincenzo Tucci (University of Salerno);
Patrizia Lamberti (University of Salerno)
- N3-TS2 119** **A COST-OPTIMIZATION MODEL
FOR SIZING GRID-CONNECTED PV-BATTERY ENERGY
STORAGE SYSTEMS WITH CYCLIC CAPACITY DEGRADATION**
Philipp Thunshirn (FH Technikum Wien)*;
José Baptista (Universidade de Trás-os-Montes e Alto Douro);
Tiago Pinto (Universidade de Trás-os-Montes e Alto Douro)
- N3-TS2 183** **ORDINARY AND FUNCTIONAL PRINCIPAL COMPONENT ANALYSIS
FOR RELAXATION VOLTAGE PROFILES AND STATE
OF HEALTH ESTIMATION IN LITHIUM-ION BATTERIES**
Michele Bellomo (Politecnico di Milano)*;
Alberto Dolara (Politecnico di Milano);
Francesco Grimalaccia (Politecnico di Milano)
- N3-TS2 227** **GRAVITY BATTERIES FOR INTEGRATING
RENEWABLE ENERGY INTO POWER GRIDS**
Febin Saju (Sheffield Hallam University);
Muhammad Akmal (Sheffield Hallam University)*
- N3-TS2 351** **A SWARM INTELLIGENCE-BASED MULTISTAGE
CHARGING STRATEGY FOR LITHIUM-ION BATTERIES**
Pedro Peixoto (University of Beira Interior);
Jose Pombo (University of Beira Interior)*;
Silvio Mariano (University of Beira Interior);
Maria Calado (University of Beira Interior)
- N3-TS2 208** **A REVIEW OF ARTIFICIAL INTELLIGENCE MODELS
FOR CONSUMER BEHAVIOUR PATTERN IDENTIFICATION**
Luis Carneiro (Universidade de Trás-os-Montes e Alto Douro);
Tiago Pinto (Universidade de Trás-os-Montes e Alto Douro)*;
José Baptista (Universidade de Trás-os-Montes e Alto Douro)

THURSDAY H 11:30 > 13:30
Room IMPERIAL 2

SS09 ELECTRICITY FROM VEHICLES TO BUILDINGS (V2B): TECHNOLOGIES, DESIGN AND APPLICATIONS

Session Chairs

Manuela Minetti

University of Genoa

Riccardo Loggia

Sapienza University of Rome

- N3-TS3 34** **FINITE CONTROL SET MODEL PREDICTIVE VOLTAGE CONTROL FOR A THREE-LEVEL NPC INVERTER IN ISLANDED VEHICLE-TO-LOAD OPERATION**
Rock Agon (Carnegie Mellon University Africa)*
- N3-TS3 84** **ENERGY OPTIMIZATION ALGORITHMS INTEGRATED IN RESIDENTIAL MICROGRID WITH PV, STORAGE AND EVS**
Lorenzo Frattale Mascioli (Sapienza); Andrea Golino (Sapienza); Riccardo Loggia (Sapienza, University of Rome)*; Roberto Menichelli (Sapienza); Cristina Moscatiello (Sapienza); Andrea Bonfiglio (University of Genoa); Manuela Minetti (University of Genoa); Maria Carmen Falvo (Sapienza); Luigi Martirano (Sapienza)
- N3-TS3 85** **EV PARKING LOT WITH V2G/V2V-BASED ENERGY MANAGEMENT SYSTEM: A CASE STUDY**
Andrea Golino (Sapienza); Lorenzo Frattale Mascioli (Sapienza); Roberto Menichelli (Sapienza); Riccardo Loggia (Sapienza, University of Rome)*; Cristina Moscatiello (Sapienza); Maria Carmen Falvo (Sapienza); Luigi Martirano (Sapienza)
- N3-TS3 86** **DESIGN AND CONTROL OF A PV-BASED ENERGY MANAGEMENT SYSTEM FOR GRID-CONNECTED EV CHARGING STATION IN AC MICROGRID**
Muhammad Salman (Sapienza, University of Rome); Riccardo Loggia (Sapienza, University of Rome)*; Lorenzo Frattale Mascioli (Sapienza, University of Rome); Andrea Golino (Sapienza, University of Rome); Luigi Martirano (Sapienza, University of Rome); Chiara Boccaletti (Sapienza, University of Rome); Maria Carmen Falvo (Sapienza, University of Rome)
- N3-TS3 310** **THE IMPACT OF VEHICLE TO HOME SERVICES ON ELECTRIC VEHICLES TOTAL COST OF OWNERSHIP**
Andrea Bonfiglio (University of Genoa)*; Riccardo Loggia (Sapienza University of Rome); Maria Martino (University of Genoa); Luigi Martirano (Sapienza University of Rome); Manuela Minetti (University of Genoa)
- N3-TS3 311** **REINFORCEMENT LEARNING ALGORITHMS TO OPTIMIZE THE INTEGRATION OF ELECTRIC VEHICLE SERVICES INTO POWER SYSTEMS**
Andrea Bonfiglio (University of Genoa); Alice La Fata (University of Genoa); Riccardo Loggia (Sapienza, University of Rome); Luigi Martirano (Sapienza, University of Rome); Manuela Minetti (University of Genoa)
- N3-TS3 350** **SUSTAINABLE ONSHORE POWER SUPPLY IN KAPELLSKÄR PORT INTEGRATING RESS AND BESS**
Mostafa Kermani (University of Skövde)*; Mattias Sandell (Ports of Stockholm); Svante Åberg Gassbo (Ports of Stockholm)

THURSDAY H 11:30 > 13:30
Room IMPERIAL 3**SS08 MACHINE LEARNING
FOR ENERGY MANAGEMENT
IN SUSTAINABLE AND SMART
COMPLEX ENERGY SYSTEMS**

Session Chairs

Malik Intisar Ali Sajjad

University of Engineering and Technology (UET) Taxila

Roberto Napoli

Politecnico di Torino

Muhammad Faisal Nadeem Khan

University of Engineering and Technology (UET) Taxila

N3-TS4 **2****CHALLENGES AND PROSPECTS
OF DIFFERENT NILM FRAMEWORKS FOR REAL-WORLD APPLICATIONS**

Muhammad Zaigham Abbas (University of Engineering and Technology Taxila, Pakistan); Dr. Malik Intisar Ali Sajjad (University of Engineering & Technology, Taxila, Pakistan)*; Muhammad Faisal Nadeem Khan (University of Engineering and Technology Taxila, Pakistan); Luigi Martirano (Sapienza - University of Rome)

N3-TS4 **41****REINFORCEMENT LEARNING DRIVEN VOLT-VAR CONTROL
WITH PV INVERTERS AND SOLID-STATE
TRANSFORMER-ENABLED EV CHARGING STATIONS**

Muhammad Bilal Raza (University of Engineering and Technology Taxila); Faisal Nadeem (University of Engineering and Technology Taxila)*; Intisar Ali Sajjad (University of Engineering and Technology Taxila); Luigi Martirano (Sapienza University of Rome)

N3-TS4 **76****MULTI DIMENSIONAL FAULT ANALYSIS
AND DIAGNOSTIC TECHNIQUES FOR LI-ION BATTERIES IN EVS: A REVIEW**

Soha Usman (University of Engineering and technology Taxila)*; Muhammad Faisal Nadeem (University of Engineering and technology Taxila); Intisar Ali Sajjad (University of Engineering and technology Taxila); Luigi Martirano (Sapienza University, Italy)

N3-TS4 **95****PREDICTIVE ENERGY MODELING FOR DRONE MISSIONS:
A REGRESSION-BASED DECISION FRAMEWORK**

Anil Sezgin (Siemens A.S.)*; Büşra Demir Sezgin (Turkcell Odeme ve Elektronik Para Hizmetleri A.S.)

N3-TS4 **114****ENERGY TIME SERIES FORECASTING A MODULAR AND AUTOMATED
APPROACH FOR BENCHMARKING**

Stavros Mischos (Aristotle University of Thessaloniki)*; Nikolaos Virtsionis Gkalinikis (Aristotle University of Thessaloniki); Vasilios Konstas (Aristotle University of Thessaloniki); Dimitrios Vrakas (Aristotle University of Thessaloniki)

N3-TS4 **191****ENHANCED MULTI-STEP AHEAD FORECASTING
OF ELECTRICAL POWER DEMAND USING
NEIGHBORHOOD-CONSTRAINED DECOMPOSITION STRATEGY**

Paolo Fazzini (Consiglio Nazionale delle Ricerche (CNR)); Giuseppe La Tona (Consiglio Nazionale delle Ricerche (CNR))*; Matteo Diez (Consiglio Nazionale delle Ricerche (CNR)); Maria Carmela Di Piazza (Consiglio Nazionale delle Ricerche (CNR))

N3-TS4 **309****AN EFFICIENT POWER DISPATCHING STRATEGY TO COPE WITH
RENEWABLE ENERGY SOURCES UNCERTAINTIES**

Alice La Fata (University of Genoa - DITEN); M. Asim Amin (University of Genoa - DITEN); Massimo Brignone (University of Genoa - DITEN); Marco Invernizzi (University of Genoa - DITEN); Andrea Bonfiglio (University of Genoa - DITEN); Renato Procopio (University of Genoa - DITEN)

THURSDAY H 11:30 > 13:30
Room IMPERIAL 4

SS23 GREEN ENERGY COMMUNITIES AND SMART SUSTAINABLE ISLANDS - 1

Session Chairs

Francesco Grimaccia

Politecnico di Milano

Rodolfo Araneo

Sapienza University of Rome

Renato Procopio

University of Genoa

N3-TS5 **22**

A NOVEL DESIGN OF A HYBRID SOLAR TWIN CHIMNEY POWER PLANT FOR POWER AND DISTILLED WATER GENERATION

Ahmad Azzam (Al-hussien Technical University)*;

Emad Abdelsalam (Al Hussein Technical University);

Jad Sunna (Al Hussein Technical University);

Fares Almomani (Chemical Engineering Department, Qatar University)

N3-TS5 **27**

RECYLINK: STREAMLINING WASTE MANAGEMENT USING TRASH TAGGING AND AI TO ENHANCE WASTE-TO-ENERGY CONVERSION.

Indrajeet Sarkar (SRM Institute Of Science and Technology)*;

Derill Sebiraj (SRM Institute Of Science and Technology);

Dr. Om Prakash (SRM Institute Of Science and Technology)

N3-TS5 **142**

FIELD TESTING OF ELECTRICAL AND THERMAL PERFORMANCE OF PHOTOVOLTAIC MODULES COOLED WITH PHASE CHANGE MATERIALS

Domenico Mazzeo (Politecnico di Milano)*;

Federico Crusco (Department fo Energy, Politecnico di Milano);

Andrea Serafino (Department fo Energy, Politecnico di Milano);

Alejandro González-Moreno (Department fo Energy, Politecnico di Milano);

Sonia Leva (Department fo Energy, Politecnico di Milano)

N3-TS5 **151**

GRID-INFORMED SHARING COEFFICIENTS IN RENEWABLE ENERGY COMMUNITIES

Alireza Shooshtari (Institut de Recerca en Energia de Catalunya (IREC));

Antonio Pepiciello (Institut de Recerca en Energia de Catalunya (IREC)); Jose

Luis Dominguez-Garcia (Institut de Recerca en Energia de Catalunya (IREC))"

N3-TS5 **154**

A SIMULATION MODEL FOR DSM APPLICATIONS TO THE ELECTRIC GRID OF LAMPEDUSA ISLAND

Rossano Musca (University of Palermo)*;

Salvatore Favuzza (University of Palermo);

Marilena Theofilou (EPL Technology Frontiers);

Andreas Livera (University of Cyprus);

Marco Caruso (Exalto Energy&Innovation Srl);

Rabea Sandherr (Energyonautics GmbH)

N3-TS5 **280**

A HYBRID DECENTRALIZED OPTIMIZATION APPROACH FOR USER-AGNOSTIC ENERGY COMMUNITIES

Davide Zanatta (Politecnico di Milano)*;

Marco Mussetta (Politecnico di Milano)

THURSDAY H 15:00 > 17:00
Room IMPERIAL MAIN HALL**MEASUREMENTS**

Session Chair

Eftychios Koutroulis

Technical University of Crete

- A3-TS1 53** **COMPREHENSIVE EVALUATION OF TWO DIMMABLE LED LAMPS ACROSS MULTIPLE DIMMING STATES: ELECTROMAGNETIC COMPATIBILITY, SURGE IMMUNITY, AND PHOTOMETRIC PERFORMANCE**
Themistoklis L. Athanasiadis (National Technical University of Athens);
Eleni P. Nicolopoulou (National Technical University of Athens)*;
Aikaterini D. Polykrati (National Technical University of Athens);
Christos A. Christodoulou (National Technical University of Athens);
Ioannis F. Gonos (National Technical University of Athens)
- A3-TS1 54** **QUANTITATIVE ASSESSMENT OF HUMAN OPERATOR INFLUENCE IN IEC 61000-4-2 ESD TESTING**
Panagiotis K. Papastamatis (National Technical University of Athens)*;
Maria I. Tsortanidi (National Technical University of Athens);
Eleni P. Nicolopoulou (National Technical University of Athens);
Christos A. Christodoulou (National Technical University of Athens);
Ioannis F. Gonos (National Technical University of Athens)
- A3-TS1 163** **EXPERIMENTAL ANALYSIS OF TEMPORAL LIGHT ARTEFACTS IN SOLID-STATE LIGHTING SYSTEMS**
Vasilios Androvitsaneas (National Technical University of Athens);
Anastasios Dimitrakis (National Technical University of Athens)*;
Athanasios Kotsenos (National Technical University of Athens)
- A3-TS1 173** **SOFTWARE DEVELOPMENT FOR ANALYSIS OF TVS DIODES CHARACTERISTICS**
Niki Gkonou (Aristotle University of Thessaloniki)*;
Georgios Peppas (Technical University of Crete);
Thomas Tsovilis (Aristotle University of Thessaloniki)
- A3-TS1 229** **WAVELET NEURAL NETWORK APPROACH TO DETECT AND LOCALIZE FAULTS IN WMU-BASED DISTRIBUTION SYSTEMS**
Dariush Salehi (Laval university)*; Navid Vafamand (Laval University);
Shayan Soltani (Laval University); Abbas Rabiee (Laval University);
Innocent Kamwa (Laval University)
- A3-TS1 292** **TECHNIQUES FOR ENHANCING ACCURACY AND PRECISION IN REAL-TIME MEASUREMENTS ON ENERGY STORAGE SYSTEMS**
Olga Sokolaki (University of Patras)*;
Emmanuel Tatakis (University of Patras)

THURSDAY H 15:00 > 17:00
Room IMPERIAL 1**MAINTENANCE,
OPERATION AND SAFETY - 1**

Session Chair

Konstantinos Gyftakis

Technical University of Crete

- A3-TS2 70** **LANDFILL GAS PURIFICATION SYSTEM EVALUATION**
Laila Zemite (Riga Technical university)*;
Davids Kronkalns (Riga Technical University);
Olafs Slutins (Riga Technical University)
- A3-TS2 177** **FAULT DETECTION IN ELECTRICAL PROPULSION MOTORS
IN THE PRESENCE OF CONCEPT DRIFT**
Martin Tveten (Norwegian Computing Center);
Morten Stakkeland (ABB)*
- A3-TS2 257** **FAULT IMPACT ON DUAL-ROTOR SURFACE PERMANENT MAGNET
SYNCHRONOUS GENERATOR VIA THE FINITE ELEMENT METHOD**
Nikolaos Gkiolekas (Technical University of Crete);
Marios Salinas (Technical University of Crete);
Alexandros Sergakis (Technical University of Crete);
Stefanos Karampas (Technical University of Crete);
Konstantinos Gyftakis (Technical University of Crete)*
- A3-TS2 271** **CYBERSECURITY STRATEGIES
FOR MARINE ELECTRONIC CONTROL UNITS**
Ettore Soldaini (Vrije Universiteit Brussel)*;
Sachin Kumar Bhoi (Vrije Universiteit Brussel);
Sajib Chakraborty (Vrije Universiteit Brussel);
Omar Hegazy (Vrije Universiteit Brussel)
- A3-TS2 278** **FORECAST-BASED LINE RATING METHODS ANALYSIS
OF AAR AND DTR APPROACHES**
Lorenzo Papi (Terna)*; Gaia Leone (Terna);
Francesco Palone (Terna); Roberto Spezie (Terna)
- A3-TS2 325** **PHYSICS-INFORMED NEURAL NETWORK-BASED
SURROGATE MODELING OF ELASTIC WAVE PROPAGATION
IN LINEAR SOLAR RECEIVERS**
Rodolphe Barlogis (CNRS PROMES)*;
Ferhat Tamssaoüet (CNRS LAAS);
Quentin Falcoz (CNRS PROMES / Université Perpignan Via Domitia);
Stéphane Grieu (CNRS PROMES / Université Perpignan Via Domitia)
- A3-TS2 296** **WHY THE WORLD NEEDS A DEDICATED JOURNAL
ON ELECTRICAL SAFETY ENGINEERING**
Massimo Mitolo (Irvine Valley College)*;
Rodolfo Araneo (University of Rome La Sapienza)

THURSDAY H 15:00 > 17:00
Room IMPERIAL 2

SS05 INNOVATION FOR MONITORING, MANAGEMENT, CONTROL AND COMMUNICATION IN THE SMART GRID

Session Chairs

Elisa Belloni

University of Perugia

Matteo Intravaia

University of Florence

A3-TS3 90

REAL-TIME ECONOMIC DISPATCH FOR PRINCE LAB MICROGRID USING INTERCHANGE SIGNAL

Giovanni Maulà (Politecnico di Bari)*; Luigi Pio Savastio (Politecnico di Bari);
Elia Brescia (Politecnico di Bari); Enrico Elio De Tuglie (Politecnico di Bari);
Désiré Rasolomampionona (Warsaw University of Technology);
Mariusz Klos (Warsaw University of Technology)

A3-TS3 91

STATISTICAL APPROACH TO RESIDENTIAL LOAD MODELING USING INDEX METRICS

Luigi Pio Savastio (Politecnico di Bari)*; Elisa Belloni (Università di Perugia);
Giovanni Maulà (Politecnico di Bari); Giulia Amato (Politecnico di Bari);
Elia Brescia (Politecnico di Bari); Enrico Elio De Tuglie (Politecnico di Bari)

A3-TS3 135

MONITORING AND ENERGY SIMULATION ANALYSIS OF A MECHANICAL WORKSHOP WITH PHOTOVOLTAIC SYSTEM AND ELECTRIC MOBILITY INFRASTRUCTURES INTEGRATION

Elisa Belloni (Università degli Studi di Perugia)*

A3-TS3 138

NEXT-GEN HYDROGEN ENERGY: THE PRINCE MICROGRID AS A SCALABLE SOLUTION

Giulia Amato (Politecnico di Bari)*; Luigi Pio Savastio (Politecnico di Bari);
Giovanni Maulà (Politecnico di Bari); Enrico Elio De Tuglie (Politecnico di Bari)

A3-TS3 156

IT ARCHITECTURE FOR NEXT-GENERATION SMART GRIDS THE TELESMEG & RECONEDGE EXPERIENCE

Tommaso Pecorella (Università di Firenze)*;
Matteo Intravaia (Università di Firenze); Fabrizio Brasca (Wind Tre SpA);
Luca Capra (Spindox); Niccolò Mazzi (Spindox); Alfonso Conte (OpenFiber);
Elvina Giandullina (Hewlett Packard Italia Srl); Muriel Capabianca (CRS4);
Maria Laura Clemente (CRS4); Carlo Impagliazzo (CRS4)

A3-TS3 201

GPT-POWERED CHATBOT FOR DISSEMINATION AND SIMULATION OF RENEWABLE ENERGY COMMUNITIES

Lorenzo Becchi (UNIFI)*; Matteo Intravaia (UNIFI); Marco Bindi (UNIFI);
Gabriele Maria Lozito (UNIFI); Maria Cristina Piccirilli (UNIFI);
Vittoria Cacciavillani (UNIFI); Riccardo Marconi (UNIFI)

A3-TS3 225

MODELING AND ANALYSIS OF PHOTOVOLTAIC LOCAL ENERGY MARKETS BASED ON DATA FROM A REAL DATASET

Vicente Galiano Ibarra (Universidad Miguel Hernández de Elche)*

THURSDAY H 15:00 > 17:00
Room IMPERIAL 3

**SS15 REAL-TIME SIMULATION
FOR POWER SYSTEMS:
APPLICATIONS, CHALLENGES,
AND FUTURE DIRECTIONS**

Session Chairs

Cosimo Iurlaro

Politecnico di Bari

Fabrizio De Caro

Università degli Studi del Sannio

Andrea Mazza

Politecnico di Torino

- A3-TS4 **7** **EXTERNAL NETWORK REDUCTION FOR STATE ESTIMATOR**
Chad Hirsh (Duquesne Light Company)*;
Kiamran Radjabli (Utilicast)
- A3-TS4 **80** **ONLINE IMPEDANCE IDENTIFICATION
AND TRANSFER FUNCTION MODELING IN PHIL APPLICATIONS**
Lucas Braun (KIT)*
- A3-TS4 **264** **CONTROL HARDWARE-IN-THE-LOOP ASSESSMENT
OF AN ENERGY MANAGEMENT SYSTEM
FOR RENEWABLE ENERGY COMMUNITIES**
Carmine Rodio (RSE - Ricerca sul Sistema Energetico)*
- A3-TS4 **293** **ENABLING REAL-TIME DIGITAL TWIN:
AN AUTOMATIC PROCEDURE FOR IMPLEMENTING
RADIAL DISTRIBUTION NETWORKS IN SIMULINK**
Giorgio Benedetto (Politecnico di Torino); Andrea Mazza (Politecnico di Torino)*;
Mahmood Hosseini Imani (Politecnico di Torino);
Ettore Bompard (Politecnico di Torino); Gabriele Fedele (ARETI SpA);
Lorenzo Centini (ARETI SpA); Ercole De Luca (ARETI SpA);
Paolo Sancioni (ARETI SpA); Daniele Porcu (Enel Grids Srl);
Alessio Sechi (e-distribuzione)
- A3-TS4 **340** **POWER SYSTEMS DISTRIBUTED REAL-TIME SIMULATIONS
VIA SERVERLESS INSPIRED COMPUTING**
Giovanni Salvatore Barbato (University of Campania "Luigi Vanvitelli");
Michele De Santis (University of Campania Luigi Vanvitelli)*;
Roberto Langella (University of Campania "Luigi Vanvitelli");
Antonio Picone (University of Campania "Luigi Vanvitelli");
Luigi Rubino (University of Campania "Luigi Vanvitelli")
- A3-TS4 **343** **FAST FREQUENCY SUPPORT IN ISOLATED DISTRIBUTION NETWORKS
BY MEANS OF DISTRIBUTED CONTROL OF V2G ELECTRIC VEHICLES**
Cosimo Iurlaro (DEI - Politecnico di Bari)*;
Mohammad Rajabi Nasab (DEI - Politecnico di Bari);
Guglielmo Cassettino (DEI - Politecnico di Bari);
Sergio Bruno (DEI - Politecnico di Bari);
Massimo La Scala (DEI - Politecnico di Bari)

THURSDAY H 15:00 > 17:00
Room IMPERIAL 4

SS23 GREEN ENERGY COMMUNITIES AND SMART SUSTAINABLE ISLANDS - 2

Session Chairs

Francesco Grimaccia

Politecnico di Milano

Rodolfo Araneo

Sapienza University of Rome

Renato Procopio

University of Genoa

A3-TS5 **145**

PHYSICS-INFORMED NEURAL NETWORK COMBINED WITH SPARSE IDENTIFICATION NONLINEAR DYNAMICS FOR BATTERY SOC ESTIMATION

Quanxi Guo (Politecnico di Milano)*;
Francesco Grimaccia (Politecnico di Milano);
Alessandro Niccolai (Politecnico di Milano);
Yanan Zhang (Southeast University);
Stefano Bracco (Università di Genova)

A3-TS5 **214**

COST STRUCTURE ANALYSIS OF BASELOAD CAPABLE PV PLANTS WITH BATTERY HYDROGEN HYBRID STORAGE IN LOCAL DC GRIDS

Jonas Ott (Deggendorf Institute of Technology)*;
Otto Kreutzer (Deggendorf Institute of Technology)

A3-TS5 **336**

COMBINED CLASSIFICATION OF BATTERY STATE-OF-LIFE AND CHARGING REGIMES BY RECURRENT DEEP NEURAL NETWORKS

"Federico Succetti (University of Rome Sapienza);
Antonello Rosato (University of Rome Sapienza);
Massimo Panella (University of Rome Sapienza)*;
Rodolfo Araneo (University of Rome Sapienza);
Alessandro Dell'Era (University of Rome Sapienza)"

A3-TS5 **337**

A CLUSTERING-BASED APPROACH FOR FAST MODELING OF MEMRISTIVE DEVICES FOR ENERGY STORAGE

"Massimo Panella (University of Rome Sapienza)*;
Rodolfo Araneo (University of Rome Sapienza);
Antonello Rosato (University of Rome Sapienza)"

A3-TS5 **339**

MANAGEMENT ENERGY SYSTEMS FOR SMART ISLANDS (MESSI): THE CASE STUDY OF PONZA ISLAND

"Rodolfo Araneo (University of Rome "La Sapienza")*;
Erika Stracqualursi (University of Rome "La Sapienza");
Massimo Panella (University of Rome "La Sapienza");
Antonello Rosato (University of Rome "La Sapienza");
Massimo Mitolo (Irvine Valley College);
Salvatore Musu (Società Elettrica Ponzese SpA)"

A3-TS5 **345**

IMPACT OF REACTIVE POWER DISPATCH IN A RECURSIVE TWO-STAGE OPTIMAL CONTROL ALGORITHM FOR ISOLATED ELECTRICAL NETWORKS

Marco Menga (DEI - Politecnico di Bari)*;
Roberto Cometa (DEI - Politecnico di Bari);
Guglielmo Cassettino (DEI - Politecnico di Bari);
Cosimo Iurlaro (DEI - Politecnico di Bari);
Sergio Bruno (DEI - Politecnico di Bari);
Massimo La Scala (DEI - Politecnico di Bari)



EEEIC
2025
CRETE

SMART PEOPLE
SMART FUTURE

Gala Dinner

Thursday, **July 17**
Start **20:30**
@ **Minoa Palace Resort**

FRIDAY H 9:00 > 11:00
Room IMPERIAL MAIN HALL

REGULATION AND ELECTRICITY MARKET

Session Chair

Nikolaos Paterakis

Eindhoven University of Technology (TU/e)

- M4-TS1 17 EFFECTIVENESS OF ENERGY-SAVING MEASURES IN REDUCING ENERGY POVERTY**
Olafs Slutins (Riga Technical university);
Laila Zemite (Riga Technical university)*;
Olga Bogdanova (University of Latvia)
- M4-TS1 71 A HOUSEHOLD-LEVEL STUDY ON TACKLING ENERGY POVERTY IN LATVIA**
Laila Zemite (Riga Technical university)*;
Olafs Slutins (Riga technical University);
Karina Palkova (Riga Stradins University);
Davids Kronkalns (Riga Technical University)
- M4-TS1 94 SURROGATE MODEL-BASED REINFORCEMENT LEARNING FOR BIDDING STRATEGIES IN LOCAL FLEXIBILITY MARKETS**
"Haoyang Zhang (Eindhoven University of Technology)*;
Lingkang Jin (Eindhoven University of Technology);
Koen Kok (Eindhoven University of Technology);
Nikolaos Paterakis (Eindhoven University of Technology)"
- M4-TS1 111 PROMOTING GRID FLEXIBILITY THROUGH POLICY: INSIGHTS FROM EU REGULATORY FRAMEWORKS**
Katerina Drivakou (UBITECH ENERGY)*
- M4-TS1 152 HYBRID HEAT PUMP FLEXIBILITY ALLOCATION: QUANTIFIED THERMAL COMFORT-BASED CONGESTION MANAGEMENT**
Xin Li (Eindhoven University of Technology)*;
Jeroen J. Markus (Eindhoven University of Technology);
Stefan de Lange (Eindhoven University of Technology);
Lingkang Jin (Eindhoven University of Technology);
Koen Kok (Eindhoven University of Technology);
Nikolaos G. Paterakis (Eindhoven University of Technology)
- M4-TS1 222 MARKET-BASED ACTIVE AND REACTIVE POWER REDISPATCH TOOL FOR ENHANCING DISTRIBUTION-LEVEL FLEXIBILITY**
Panagiotis Papafiliippou (University of Western Macedonia)*;
Georgios Michos (University of Western Macedonia);
Konstantinos Ourelidis (University of Western Macedonia);
Athanasios Tsalianis (Public Power Corporation S.A.);
Georgios Christoforidis (University of Western Macedonia)

FRIDAY H 9:00 > 11:00
Room IMPERIAL 1

MAINTENANCE, OPERATION AND SAFETY - 2

Session Chair

Pantelis Mikropoulos

Aristotle University of Thessaloniki

- M4-TS2 69 CHALLENGES IN DESIGNING UNDERGROUND CABLE SHEATH BONDING IN RURAL PV ENERGY COMMUNITIES**
"Christos Melios (University of Cyprus);
Charalambos Charalambous (University of Cyprus)*;
Nikolaos Kokkinos (ELEMKO SA)"
- M4-TS2 87 DC CORROSIVE CHALLENGES IN RADIAL MULTI TERMINAL HVDC SYSTEMS: UNDERSTANDING THE ROLE OF HVDC ELECTRODES UNDER EMERGENCY OPERATIONS**
Anna Demetriou (University of Cyprus);
Alexandros Nikolaidis (University of Cyprus);
Charalambos Charalambous (University of Cyprus)*
- M4-TS2 139 PERFORMANCE EVALUATION OF SAMPLED VALUE-BASED DISTANCE PROTECTION**
Giulia Amato (Politecnico di Bari)*;
Jan Kowalik (Warsaw University of Technology);
Désiré Rasolomampionona (Warsaw University of Technology);
Marcin Januszewski (Warsaw University of Technology);
Ryszard Kucharski (Warsaw University of Technology);
Radosław Szreder (Warsaw University of Technology);
Karol Kurek (Warsaw University of Technology);
Luigi Pio Savastio (Politecnico di Bari)
- M4-TS2 219 A CALCULATION METHOD FOR GLOBAL GROUNDING SYSTEMS OF MEDIUM VOLTAGE DISTRIBUTION NETWORKS**
Tommaso Bragatto ("Sapienza" University of Rome)*;
Alberto Geri (Sapienza University of Rome);
Marco Maccioni (Sapienza University of Rome);
Fabio Massimo Gatta (Sapienza University of Rome)
- M4-TS2 305 CAPACITIVE CURRENT BREAKING ISSUES IN LARGE RES POWER PLANT CABLE NETWORKS**
Tommaso Bragatto ("Sapienza" University of Rome)*;
Fabio Massimo Gatta ("Sapienza" University of Rome);
Alberto Geri ("Sapienza" University of Rome);
Jacopo Dell'olmo ("Sapienza" University of Rome);
Marco Maccioni ("Sapienza" University of Rome)

FRIDAY H 9:00 > 11:00
Room IMPERIAL 2**SMART BUILDINGS**

Session Chair

Fabio Bisegna

Sapienza University of Rome

- M4-TS3 48** **EVALUATING VENTILATION STRATEGIES FOR ENERGY-EFFICIENT CLASSROOM DESIGN USING OPEN-SOURCE CFD SOFTWARE (OPENFOAM®)**
Joseph gerges (CESI)*
- M4-TS3 57** **NET-ZERO ENERGY BUILDINGS: A COMPREHENSIVE REVIEW OF OBJECTIVES AND METHODOLOGIES IN RECENT RESEARCH**
"Hamid Zakernezhad (Research Center for Systems and Technologies (SYSTEC) Faculty of Engineering University of Porto Porto, Portugal); Mohammad Sadeq Javadi Estahbanati (INESC TEC)*; Sergio F. Santos (Center for Mechanical and Aerospace Engineering Sciences and Technologies (C-MAST) University of Beira Interior Covilhã, Portugal); Mehرداد Setayesh Nazar (Electrical Engineering Faculty, Shahid Beheshti University, Tehran, Iran); João P. S. Catalão (Research Center for Systems and Technologies (SYSTEC) Faculty of Engineering University of Porto Porto, Portugal)"
- M4-TS3 59** **FAIR ENERGY SHARING STRATEGY FOR SMART HOMES IN LOCAL ENERGY COMMUNITIES**
Farideh Ghanavati (University of Aveiro)*; Gerardo J. Osório (University of Beira Interior Center Mech. Aerospace Scien. Techno. (C-MAST) Covilhã, Portugal); João C. O. Matias (University of Aveiro Gover. Competitiveness Public Policies (GOVCOPP) Aveiro, Portugal); João P. S. Catalão (Fac. Eng. Univ. Porto (FEUP) Res. Center Syst. Techno. (SYSTEC), Advanced Prod. Int. Syst. Assoc. Lab. (ARISE), Porto, Portugal)
- M4-TS3 64** **COST-EFFECTIVE INDOOR TEMPERATURE CONTROL STRATEGIES FOR SMART HOME APPLICATIONS**
"Mohammad Sadeq Javadi Estahbanati (INESC TEC)*; Tiago Soares (INESC TEC, Porto, Portugal); José Villar (INESC TEC, Porto, Portugal); António Sérgio Faria (INESC TEC, Porto, Portugal)"
- M4-TS3 150** **EMPLOYING MULTI-CRITERIA DECISION ANALYSIS FOR THE SELECTION OF LUMINAIRES: A PHOTOMETRIC APPROACH TO COLOUR PREFERENCES AND ENERGY EFFICIENCY**
Anastasios Dimitrakakis (NTUA)*; Athanasios Kotseos (NTUA); Vasilios Androvitsaneas (NTUA); Frangiskos Topalis (NTUA)
- M4-TS3 321** **PREDICTIVE CONTROL OF ELECTRIC WATER HEATERS IN INDIVIDUAL DWELLINGS EQUIPPED WITH SOLAR PHOTOVOLTAIC PANELS**
Ourmima Laguili (PROMES-CNRS); Julien Eynard (PROMES-CNRS); Stéphane Grieu (PROMES-CNRS)*

FRIDAY H 9:00 > 11:00
Room IMPERIAL 3

CIRCUITS, SENSORS AND ACTUATORS - 2

Session Chair

Ioannis Gonos

National Technical University of Athens

- M4-TS4 6** **DESIGN AND ANALYSIS OF A ROBUST MULTI-STAGE ECG OP-AMP CIRCUIT IN 180 NM CMOS TECHNOLOGY**
Mohammad Alzyod (King Fahd University of Petroleum and Minerals)*
- M4-TS4 38** **SCALABILITY AND PERFORMANCE STUDY OF AN INNOVATIVE BATTERY BASED ON ELECTRIC-CIRCUIT MODELS**
Petra Alexandra Reisz (AIT Austrian Institute of Technology GmbH)*;
Klara Maggauer (AIT Austrian Institute of Technology GmbH);
Fei Haojie (Tomas Bata University in Zlín);
Thaiskang Jamatua (Tomas Bata University in Zlín);
Viera Pechancová (Tomas Bata University in Zlín)
- M4-TS4 88** **ON THE SHIELDING EFFECTIVENESS OF MV/LV SUBSTATION WALLS IN THE PRESENCE OF IEMI SOURCES**
Giuseppe Attolini (University of Rome "La Sapienza");
Magdalena Budnarowska (Gdynia Maritime University);
Erika Stracqualursi (University of Rome "La Sapienza")*;
Salvatore Celozzi (University of Rome "La Sapienza")
- M4-TS4 97** **A COMPREHENSIVE REVIEW OF HVDC CIRCUIT BREAKERS AND PROTECTION SYSTEMS**
Renato Sgriscia (Sapienza, University of Rome);
Riccardo Loggia (Sapienza, University of Rome)*;
Vincenzo Ciniello (Sapienza, University of Rome);
Cristina Moscatiello (Sapienza, University of Rome);
Stefano Lauria (Sapienza, University of Rome);
Luigi Martirano (Sapienza, University of Rome)
- M4-TS4 346** **CONTROL OF A LINEAR SWITCHED RELUCTANCE ACTUATOR BASED IN DIRECT INSTANTANEOUS FORCE CONTROL WITH PWM**
Luis Pestana (Polytechnic Institute of Viseu);
Maria Calado (University of Beira Interior)*;
Silvio Mariano (University of Beira Interior)

FRIDAY H 9:00 > 11:00
Room IMPERIAL 4

POWER ELECTRONICS AND COMPONENTS

Session Chair

Kyriaki-Nefeli Malamaki

Independent Power Transmission Operator (IPTO)

- M4-TS5 192** **EVALUATION OF VIRTUAL SYNCHRONOUS GENERATOR AND DROOP CONTROL IN MICROGRIDS USING REAL-TIME HARDWARE-IN-THE-LOOP FOR INVERTER-BASED RESOURCES**
Ahmed Ibrahim (Florida International University)*;
S M Sajjad Hossain Rafin (Florida International University);
Osama Mohammed (Florida International University)
- M4-TS5 5** **ADVANCED CONTROL OF BUCK-BOOST CONVERTERS WITH A GEO-TUNED TI(1+PD) CONTROLLER FOR DESIGN INSIGHTS AND PERFORMANCE OPTIMIZATION**
"Mostafa Jabari (Sapienza University of Rome)*;
Mohammad Ghoreishi (Sapienza University of Rome);
Tommaso Bragatto (Sapienza University of Rome);
Alberto Geri (Sapienza University of Rome);
Marco Maccioni (Sapienza University of Rome);
Massimo Cresta (ASM Terni S.p.A.)"
- M4-TS5 93** **LIMITATIONS OF DECOUPLED-SEQUENCE CURRENT INJECTION OF GRID-TIED CONVERTERS FOR VOLTAGE SUPPORT UNDER ASYMMETRIC GRID FAULTS**
Antonio Di Pasquale (University of Naples Federico II)*;
Emanuele Fedele (University of Naples Federico II);
Mario Pagano (University of Naples Federico II);
Renato Rizzo (University of Naples Federico II)
- M4-TS5 198** **MODELLING OF ELECTRONIC POWER CONVERTERS WITH OUTPUT INDUCTANCE DURING FAULTS IN LVDC SYSTEMS**
Julian Valbuena Godoy (Politecnico di Milano)*;
Francesca Oliva (Politecnico di Milano);
Simone Negri (Politecnico di Milano);
Dejan Pejovski (ABB SpA, Smart Power Division);
Roberto Faranda (Politecnico di Milano)
- M4-TS5 255** **FAULT TOLERANT OPERATION OF A THREE-LEVEL BOOST CONVERTER WITH MINIMAL INPUT CURRENT RIPPLE IN BOTH HEALTHY AND FAULTY CONDITIONS**
Merlin LIMON (Institut Jean Lamour);
Arnaud GAILLARD (Université Marie et Louis Pasteur);
Philippe Poure (please add your institution)*
- M4-TS5 265** **DESIGNING A THREE-PHASE DUAL-ACTIVE BRIDGE FOR WATER ELECTROLYZERS CONSIDERING VOLTAGE VARIATIONS**
Fabian Herzig (Siemens Energy Global GmbH & Co. KG)*;
Rik W. De Doncker (RWTH Aachen University)

FRIDAY H 11:30 > 13:30
Room IMPERIAL MAIN HALL

ENVIRONMENTAL PHENOMENA AND POLLUTION

Session Chair

Ioannis Gonos

National Technical University of Athens

- N4-TS1 165** **ELECTRIC VEHICLE BATTERY RECYCLING ISSUES
IN BRITISH COLUMBIA, CANADA**
Ali Palizban (BCIT)*
- N4-TS1 216** **FREQUENCY OF WORKERS WITH ACTIVE IMPLANTED
OR WEARABLE MEDICAL DEVICES POTENTIALLY SUBJECTED
TO INTERFERENCE PROBLEMS AT THE WORKPLACES**
ALBERTO MODENESE (University of Modena & Reggio Emilia)*
- N4-TS1 231** **LIGHTNING-RELATED FATALITIES AND DAMAGES IN GREECE:
A STATISTICAL ANALYSIS (2020-2024)**
Konstantinos Koutras (Technical University of Crete);
Michail Pitsikalis (Technical University of Crete)*;
Eleni Tsolou (University of Patras);
Garyfallia Selimi (European Public Law Organisation);
Eleni Anna Anagnostopoulou (University of Patras);
Georgios Peppas (Technical University of Crete);
Eleftheria Pyrgioti (University of Patras)
- N4-TS1 275** **EVALUATION OF MAGNETIC AND ELECTRIC FIELD IMPACTS
OF HIGH VOLTAGE INFRASTRUCTURES**
aldo Canova (Politecnico di Torino)*
- N4-TS1 300** **PASSIVE LOOP SHIELD MODELING
AND SOLUTIONS FOR BUILDINGS**
aldo Canova (Politecnico di Torino)*

FRIDAY H 11:30 > 13:30
Room IMPERIAL 1

ADVANCES IN PHOTOVOLTAIC TECHNOLOGY

Session Chair
Eleftheria Pyrgioti
University of Patras

- N4-TS2 32** **TECHNO-ECONOMIC ANALYSIS OF INTEGRATING WIND AND BESS INTO AN EXISTING GRID-TIED SOLAR PV SYSTEM**
Riad Mollik Babu (University of Asia Pacific)*;
Dipta Paul (American International University - Bangladesh);
Md Shahidul Islam (University of Asia Pacific);
Mohammad Maruf Hossain (University of Asia Pacific)
- N4-TS2 96** **ENERGY AND ECONOMIC OPTIMIZATION OF APV AND APV-CPV AGRIVOLTAIC SYSTEMS USING PYTHON: STUDY OF A TOMATO FARM**
Olga Di Marino (Università degli studi di Salerno)*;
Carlo Renno (University of Salerno)
- N4-TS2 100** **ANALYSIS OF THE INFLUENCE OF BEAM IRRADIANCE CONVERSION FACTOR ON PV MODULE MOUNTING SYSTEMS**
Arsenio Barbon (Oviedo University);
Covadonga Bayon-Cueli (DNV);
Luis Bayon (Oviedo University)*;
Jaime Martinez-Suarez (INGEPEC)
- N4-TS2 196** **STATISTICAL APPROACH FOR TEMPERATURE COEFFICIENTS EVALUATION OF HIGHLY EFFICIENT PV MODULES TESTED IN NORTHERN ITALY**
Gabriele Malgaroli (POLITECNICO DI TORINO)*;
Francesco Giraudo (Politecnico di Torino);
Alessandro Ciocia (Politecnico di Torino);
Alberto Lizzeri (Edison Spa);
Luca Saglietti (Edison Spa);
Filippo Spertino (Politecnico di Torino)
- N4-TS2 316** **SHORT-TERM FORECASTING OF PV PRODUCTION USING PARAMETRIC AND NONPARAMETRIC METHODS**
João Faria (Institute of Telecommunications)*;
José Pombo (Institute of Telecommunications);
Mária do Rosário Calado (Institute of Telecommunications);
Sílvia Mariano (Institute of Telecommunications)

FRIDAY H 11:30 > 13:30
Room IMPERIAL 2

TRANSMISSION AND DISTRIBUTION SYSTEMS

Session Chair

Pantelis Mikropoulos

Aristotle University of Thessaloniki

- N4-TS3 338** **INTERACTIONS BETWEEN GROUNDING SYSTEMS AND BURIED CONDUCTIVE OBJECTS**
Erika Stracqualursi (University of Rome "La Sapienza")*; Rodolfo Araneo (University of Rome "La Sapienza"); Massimo Mitolo (Irvine Valley College)
- N4-TS3 35** **ELECTRICAL SAFETY IN MV INDUSTRIAL POWER SYSTEMS: AN INNOVATIVE SOLUTION WITH COMPENSATED NEUTRAL**
Vincenzo Ciniello (Sapienza, University of Rome); Riccardo Loggia (Sapienza, University of Rome)*; Renato Sgriscia (Sapienza, University of Rome); Stefano Lauria (Sapienza, University of Rome); Luigi Martirano (Sapienza, University of Rome)
- N4-TS3 143** **ACTIVE POWER LOSSES IN THE CRETE-PELOPONNESE SUBSEA HVAC INTERCONNECTION: INSIGHTS FROM ONE-YEAR MEASUREMENTS**
Georgios Barzegkar-Ntovom (Independent Power Transmission Operator S.A.); Angelos Noudilis (Independent Power Transmission Operator S.A)*; Jemma J. Makrygiorgou (Independent Power Transmission Operator S.A.); Efthimia Chassioti (Independent Power Transmission Operator S.A.); Ioannis Moraitis (Independent Power Transmission Operator S.A.)
- N4-TS3 238** **GROUND FAULT ANALYSIS FOR THE NEW 36 KV-50 HZ "RES" COLLECTION SYSTEMS**
Vincenzo Ciniello (Sapienza, University of Rome); Riccardo Loggia (Sapienza, University of Rome)*; Francesco Palone (Terna); Luigi Martirano (Sapienza, University of Rome); Stefano Lauria (Sapienza, University of Rome)
- N4-TS3 320** **EVALUATION OF OVERVOLTAGES STRESSING INSULATING DOWN-CONDUCTOR SYSTEMS DUE TO DIRECT LIGHTNING STRIKES USING ATP-EMTP**
Petros Tsouris (Aristotle University of Thessaloniki)*; Pavlos Samaras (Aristotle University of Thessaloniki); Pantelis Mikropoulos (Aristotle University of Thessaloniki); Thomas Tsovilis (Aristotle University of Thessaloniki); Nikolaos Kokkinos (ELEMKO S.A.)

FRIDAY H 11:30 > 13:30
Room IMPERIAL 3

SS13 ADVANCEMENTS IN ELECTRIC VEHICLE BATTERY CHARGING INFRASTRUCTURE

Session Chairs

Alberto Dolara, Michela Longo

Politecnico di Milano

N4-TS4 129

DYNAMIC MODELING OF DISTRIBUTED ENERGY HUBS WITHIN A SMART DC RAILWAY ELECTRIFICATION SYSTEM

Ana Cabrera Tobar (Politecnico di Milano);
Alberto Dolara (Politecnico di Milano)*;
Luca Dori (Politecnico di Milano)

N4-TS4 175

SARIMA-BASED FORECASTING FOR CAMERA-DRIVEN SMART PARKING SYSTEMS

Mohammad Ghoreishi (Sapienza University of Rome)*;
Mostafa Jabari (Sapienza University of Rome);
Tommaso Bragatto (Sapienza University of Rome);
Francesca Santori (ASM Terni S.p.A.);
Massimo Cresta (ASM Terni S.p.A.)

N4-TS4 179

PREDICTIVE MODELING AND ANALYSIS OF ENERGY CONSUMPTION IN EV CHARGING STATIONS USING MACHINE LEARNING TECHNIQUES

"Mostafa Jabari (Sapienza University of Rome)*;
Mohammad Ghoreishi (Sapienza University of Rome);
Tommaso Bragatto (Sapienza University of Rome);
Francesca Santori (ASM Terni S.p.A.);
Marco Maccioni (Sapienza University of Rome);
Francesco Bellesini (EMOTION S.r.l.)"

N4-TS4 236

XAI TO SUPPORT K-MEAN ALGORITHM FOR ANALYSIS OF REAL EVS CHARGING STATION DATA

"Michał Jasiński (Wrocław University of Science and Technology)*;
Elzbieta Jasinska (Wrocław University of Science and Technology);
Miroslava Gono (VSB Technical University of Ostrava);
Marek Jasiński (School no 18 Wrocław);
Luigi Martirano (Sapienza University of Rome);
Radomir Gono (VSB Technical University of Ostrava)"

N4-TS4 304

EV HOSTING CAPACITY IN DISTRIBUTION NETWORKS CONSIDERING RES. GRID LIMITS, AND SUPRAHARMONICS

Iqrar Hussain (Università degli Studi di Cassino e del Lazio Meridionale)*;
Giovanni Mercurio Casolino (Università degli Studi di Cassino e del Lazio Meridionale);
Pietro Varilone (Università degli Studi di Cassino e del Lazio Meridionale);
Paola Verde (Università degli Studi di Cassino e del Lazio Meridionale)

FRIDAY H 11:30 > 13:30
Room IMPERIAL 4

SS21 ENERGY EFFICIENCY AND IEQ IN SMART BUILDINGS AND SMART CITIES

Session Chairs

Marina Bonomolo, Tancredi Testasecca
University of Palermo

- N4-TS5 36** **FULL ELECTRIC RESIDENTIAL UNIT REFURBISHMENT INCLUDING HOME AUTOMATION SYSTEM CLAIMING NZEB**
Roberto Menichelli (Sapienza, University of Rome);
Riccardo Loggia (Sapienza, University of Rome)*;
Vincenzo Ciniello (Sapienza, University of Rome);
Cristina Moscatiello (Sapienza, University of Rome);
Luigi Martirano (Sapienza, University of Rome)
- N4-TS5 307** **A NEW NUMERICAL MODEL FOR THE ANALYSIS OF GEOTHERMAL COOLING USING EAHX SYSTEMS**
Alessandro Buscemi (University of Palermo)*;
Marina Bonomolo (University of Palermo);
Cristina Baglivo (University of Salento);
Stefania Guarino (University of Palermo);
Valerio Lo Brano (University of Palermo);
Paolo Maria Congedo (University of Salento)
- N4-TS5 313** **TOWARDS THE HUMAN-CENTERED LIGHTING EVALUATION AND CONTROL: AN OVERVIEW**
Alessia Alvich (University of Palermo)*;
Tancredi Testasecca (University of Palermo);
Patrizia Ribino (National Research Council);
Cristina Baglivo (University of Salento);
Marco Beccali (University of Palermo);
Marina Bonomolo (University of Palermo)
- N4-TS5 315** **A COMPARISON BETWEEN INDOOR DAYLIGHT PREDICTION METHODS: DAYSIM SIMULATION AND LSTM MODELS**
Tancredi Testasecca (University of Palermo);
Patrizia Ribino (cnr); Giacomo Potenza (cnr);
Cristina Baglivo (University of Salento);
Marco Beccali (University of Palermo);
Marina Bonomolo (University of Palermo)*



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SMART PEOPLE
SMART FUTURE

Tour

Friday, **July 18**
Start at **14:30**

from @ Minoa Palace Resort
to **Archaeological Museum of Chania**

