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**10:30 – 12:45**

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**10:30 – 12:30**

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**16:30 – 18:15**

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Chairs: Marco Trapanese (University of Palermo) and Gaetano Zizzo (University of Palermo)

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09:00 – 10:30

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**14:30 – 15:45**

**Room: C320**

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**Chairs:** Marco Trapanese (University of Palermo) and Gaetano Zizzo (University of Palermo)

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**15:45 – 16:45**

**Room: C330**

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**14:30 – 16:15**

**Room: C340**

**Advanced numerical modelling (B)**

**Chairs:** Maurizio Cellura (University of Palermo) and Stefano Massucco (University of Genova- PES chapter Chair)

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**14:30 – 16:30**

**Room:** C320

**Blockchain technologies: challenges and opportunities**

**Chairs:** Giuseppe Bianchi (University of Roma Tor Vergata) and Franco Chiaraluce (Polytechnic University of Marche)

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**Invited: Blockchain technology beyond cryptocurrencies .....** N/A  
Ivan Visconti (University of Salerno)

**Verification of vehicular mobility through multiple blockchains .....** N/A  
Michele Macagno (Politecnico di Torino, Italy)  
Carla Fabiana Chiasseroni (Politecnico di Torino, Italy)  
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**17:00 – 19:15**

**Room: C330**

**Advanced materials for photovoltaic applications**

**Chairs:** Isodiana Crupi (University of Palermo) and Antonio Agresti (University of Rome Tor Vergata)

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Yan Busby (Laboratoire Interdisciplinaire de Spectroscopie Electronique, Italy)

Francesco Bonaccorso (Istituto Italiano di Tecnologia, Graphene Lab, Italy)

Aldo Di Carlo (University of Tor Vergata, Italy)

**Invited: Silicon nanowires obtained by plasma based CVD for application in solar cells ..... N/A**

Rosaria Puglisi (CNR- IMM – Catania)

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Salvatore Sanzaro (CNR-IMM, Italy)

Antonino La Magna (CNR-IMM, Italy)

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Luisa D'Urso (Università di Catania, Dipartimento di Scienze Chimiche, Italy)

Antonino La Magna (Consiglio Nazionale delle Ricerche - IMM)

Antonio Terrasi (Università di Catania, Dipartimento di Fisica e Astronomia, Italy)

Rosaria Puglisi (Consiglio Nazionale delle Ricerche- Istituto per la Microelettronica ed i Microsistemi, Italy)

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Paul Procel (Delft University of Technology, The Netherlands)

Marco Lanuzza (University of Calabria, Italy)

Felice Crupi (University of Calabria, Italy)

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**17:00 – 18:45**

**Room: C340**

**Computer Vision**

**Chair:** Marco La Cascia (University of Palermo)

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Cristina Silvano (Politecnico di Milano, Italy)  
Mirko Falchetto (STMicroelectronics, Italy)  
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**17:00 – 18:45**

**Room: C320**

**Contact Management in connected Society & Enterprises**

**Chairs:** Marie-Hélène Abel (University of Technology of Compiègne – SMC France Chapter Chair), Hedi Karray (Ecole Nationale d'Ingénieurs de Tarbes)

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**Invited: Modular ontology overview and usecases. What advantages for the industry? .....** .....N/A  
Sylvie Despres (Université Paris Nord)

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## Wednesday, September 12

09:00 – 11:00

Room: C330

**Remote sensing models and methods to support sustainable development and disaster management (A)**

**Chairs:** Antonio Iodice (University of Napoli Federico II – GRS South Chapter Chair) and Ferdinando Nunziata – (University of Napoli Parthenope)

**Invited: Spaceborne synthetic aperture radars for the next decade.....N/A**  
Daniele Riccio (Univ. Napoli Federico II)

**Multi-polarization method to detect mud flat areas and depolarized targets using spaceborne SAR data.....N/A**

Emanuele Ferrentino (Università degli studi di Napoli Parthenope, Italy)

Armando Marino (The University of Stirling, United Kingdom (Great Britain))

Ferdinando Nunziata (Università di Napoli Parthenope, Italy)

Maurizio Migliaccio (Universita' Napoli Parthenope, Italy)

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Angelo Gifuni (Università di Napoli Parthenope, Italy)

Maurizio Migliaccio (Università di Napoli Parthenope, Italy)

**Further Insights on the Co-Polarized Phase Difference Over the Ocean .....N/A**

Carina de Macedo (Università di Napoli Parthenope, Italy)

Andrea Buono (Università di Napoli Parthenope, Italy)

Maurizio Migliaccio (Università di Napoli Parthenope, Italy)

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Miguel Moctezuma (Universidad Nacional Autonoma de Mexico, Mexico)

Flavio Parmiggiani (ISAC CNR, Italy)

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**09:00 – 10:15**

**Room: C340**

**Nanotechnologies for industry 4.0**

**Chairs:** Roberto Macaluso (University of Palermo) and Yogendra Kumar Mishra (Kiel University)

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**Invited: Nanowire technology for sensing applications.....N/A**

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Fabrizio Di Francesco (Escuela de Ciencia y Tecnología, Universidad Nacional de San Martín, Argentina)

Natalia Caroli (Escuela de Ciencia y Tecnología, Universidad Nacional de San Martín, Argentina)

Mariano Garcia Inza (Facultad de Ingeniería - UBA, Argentina)

Federico Golmar (Escuela de Ciencia y Tecnología, Universidad Nacional de San Martín, Argentina)

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Roberto Macaluso (University of Palermo, Italy)

Costantino Giuseppe Giaconia (Università di Palermo, Italy)

Salvatore Mirabella (University of Catania, Italy)

Eric Feltin (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

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Leonardo Palmisano (University of Palermo, Italy)

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**09:00 – 10:45**

**Room: C320**

**5G, from technology to its enabled applications**

**Chairs:** Fabio Graziosi (University of L'Aquila) and Luca Valcarenghi (Scuola Superiore Sant'Anna Pisa)

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**Invited: EMF exposure evaluations for Future Networks Based on TDD and massive MIMO: new international regulations .....N/A**

Samuela Persia, (Fondazione Ugo Bordoni, Italy)

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Gabriele Cecchetti (Scuola Superiore Sant'Anna, Italy)

Anna Lina Ruscelli (Scuola Superiore Sant'Anna, Italy)

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Fabio Graziosi (University of L'Aquila, Italy)	
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Flavio Otello Pierangeli (Wind Tre, Italy)	
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<b>Room: C330</b>	
<b>Remote sensing models and methods to support sustainable development and disaster management (B)</b>	
<b>Chairs:</b> Antonio Iodice (University of Napoli Federico II GRS South Chapter Chair) and Ferdinando Nunziata (University of Napoli Parthenope)	
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**12:15 – 13:00**

**Room: C330**

**Smart communities for resilient and innovative cities**

**Chairs:** Daniele Ronsivalle (University of Palermo) and Stefano Epifani (DTI)

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**Invited: Open cities: towards a new governance of cities and territory ..... N/A**

Roberto Lippi (Coordinador para los Países Andinos, Bogotá - Programa de Naciones Unidas para los Asentamientos Humanos, ONU-HABITAT)

**Cities and skills for integration: what can urban planning do? Experiences and reflections between public spaces and collective interest for urban and community (smart) resilience ..... 522**

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**11:30 – 12:45**

**Room: C340**

**Nanotechnologies for industry 4.0**

**Chairs:** Roberto Macaluso (University of Palermo) and Yogendra Kumar Mishra (Kiel University)

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**Invited: Flame based ZnO tetrapod nanomaterials for multifunctional applications ..... N/A**

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Michael Roos (Universität Ulm, Germany)

Ariful Udoj (Formerly at Ulm University, Germany)

Steffen Strehle (Universität Ulm, Germany)

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Viviana Figa' (Consiglio Nazionale delle Ricerche - Istituto per lo Studio dei Materiali Nanostrutturati, Italy)

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Mauro Mosca (University of Palermo, Italy)

Roberto Macaluso (University of Palermo, Italy)

Ugo Lo Cicero (Istituto Nazionale di Astrofisica, Italy); Andrea Zaffora

Francesco Di Franco (Università degli Studi di Palermo, Italy)

Monica Santamaria (Università degli Studi di Palermo, Italy)

Luca Razzari (INRS, Canada)

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**11:30 – 13:00**

**Room: C320**

**High Integrity and High Accuracy for Intelligent Transportation Systems**

**Chairs:** Claudio Sacchi (University of Trento) and Cosimo Stallo (Radiolabs)

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**Invited: GNSS High precision for anyone: dream or reality? .....** N/A  
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Maurizio Salvitti (Radiolabs, Italy)  
Elena Cinque (University of L'Aquila, Italy)  
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Pietro Salvatori (RadioLabs, Italy)  
Alessandro Neri (University of ROMA TRE, Italy)  
Francesco Rispoli (Ansaldo, Italy)

## Thursday, September 13

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09:00 – 10:30

Room: C330

**Sustainable marine transportation**

Chair: Mirko Marracci (University of Pisa)

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**Invited: Modern marine transportation systems: safety, security and environmental aspects .....** N/A  
Bruno Tevené (Chief Technology Office - Underwater Systems, Leonardo Defence Systems)

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**PROT-ONE: Better Batteries for Sustainable Marine Transportation .....** 582

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09:00 – 10:30

Room: C330

**Compliant non-destructive testing**

Chairs: Giovanni Mazzanti (University of Bologna) and Pietro Romano (University of Palermo)

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Luca De Rai (Prysmian Group)

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**09:00 – 10:30**

**Room: C320**

**Safety Security and Privacy for Cyber-Physical Systems**

**Chairs:** Pierluigi Gallo (University of Palermo) and Sara Foresti (University of Milano, Computer Chapter Chair)

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<b>Invited: Building trusted and reliable services over cyber- physical systems .....</b>	<b>N/A</b>
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Giorgia Barone (University of Palermo, Italy)	
Phan Hien (PTIT, Vietnam)	

<b>A Novel Architecture for Cyber-Physical Security in Industrial Control Networks .....</b>	<b>619</b>
Giuseppe Bernieri (University of Padua, Italy)	
Mauro Conti (University of Padua, Italy)	
Federica Pascucci (Università degli Studi Roma Tre, Italy)	

<b>LoRa signals classification through a CS-based method .....</b>	<b>625</b>
Leopoldo Angrisani (University of Naples Federico II, Italy)	
Mauro D'Arco (University of Naples Federico II, Italy)	
Crescenzo Dassi (University of Naples Federico II, Italy)	
Annalisa Liccardo (University of Naples Federico II, Italy)	

<b>e-Fairs: a Cyber-Physical System for Aggregation and Economy of Scale in e-Commerce.....</b>	<b>630</b>
Pierluigi Gallo (University of Palermo, Italy)	
Ignazio Gallo (University of Insubria, Italy)	

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**14:00 – 15:45**

**Room: C330**

**Environmental monitoring and prediction**

**Chairs:** Angelo Genovese (University of Milano) and Renè Garello (IMT Atlantique)

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<b>Invited: Extracting information from a neural network: from statistics to physical processes. application in hydro(géo)logy .....</b>	<b>N/A</b>
Anne Johannet (IMT Mines Alés, France)	

<b>Photometric and fluorimetric data for pollution monitoring in river waters .....</b>	<b>637</b>
Ekaterina A. Bondarenko (Peter the Great Saint-Petersburg Polytechnic University, Russia)	
Anastasiya Mikhailova (Peter the Great Saint-Petersburg Polytechnic University, Russia)	
Julia Lednova (Peter the Great Saint-Petersburg Polytechnic University, Russia)	
Maria Andrianova (Peter the Great Saint-Petersburg Polytechnic University, Russia)	

<b>Improvement of a predictive data-driven model for rainfall-runoff global characterization of Aa river....</b>	<b>643</b>
Baya Hadid (IMT LILLE DOUA, France)	
Eric Duviella (IMT LILLE DOUAI, France)	
Stéphane Lecoeuche (IMT LILLE DOUAI, France)	

<b>Estimating Missing Information by Cluster Analysis and Normalized Convolution .....</b>	<b>649</b>
Davide Andrea Guastella (University of Toulouse, France)	
Cesare Valenti (University of Palermo, Italy)	
<b>Towards the Prediction of Renewable Energy Unbalance in Smart Grids .....</b>	<b>655</b>
Ruggero Donida Labati (Università degli Studi di Milano, Italy)	
Angelo Genovese (Università degli Studi di Milano, Italy)	
Vincenzo Piuri (Università degli Studi di Milano, Italy)	
Fabio Scotti (Università degli Studi di Milano, Italy)	
<b>Preliminary monitoring and route location of macro energetic project - Nord Stream 2 marine gas pipeline .....</b>	<b>660</b>
Alexander Chusov (Peter the Great St. Petersburg Polytechnic University, Russia)	
Julia Lednova (Peter the Great St. Petersburg Polytechnic University, Russia)	
Mikhail Shilin (Peter the Great St. Petersburg Polytechnic University, Russia)	
Vladimir Zhigulsky (Russian State Hydrometeorological University, Russia)	
Alexandra Ershova (Russian State Hydrometeorological University, Russia)	
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<b>14:00 – 16:15</b>	
<b>Room: C340</b>	
<b>Smart technologies and modelling for avionics</b>	
<b>Chairs:</b> Alberto Milazzo (University of Palermo) and Antonio Faba (University of Perugia)	
<b>Invited: Resonant circuits for wireless power transfer and possible application to avionics .....</b>	<b>N/A</b>
Alberto Reatti (University of Firenze, Italy)	
<b>Design and Assessment of Optimized EMI Filters for Avionic Applications .....</b>	<b>666</b>
Graziella Giglia (Università di Palermo, Italy)	
Guido Ala (Università di Palermo, Italy)	
Leonardo Mistretta (Università di Palermo, Italy)	
Costantino Giuseppe Giaconia (Università di Palermo, Italy)	
Simone Quondam Antonio (University of Perugia, Italy)	
Hari Rimal (University of Perugia, Italy)	
<b>Design Centering of Wireless Power Transfer Systems for Avionics .....</b>	<b>672</b>
Alberto Reatti (University of Florence, Italy)	
Fabio Corti (University of Florence, Italy)	
Simone Quondam Antonio (University of Perugia, Italy)	
Hari Rimal (University of Perugia, Italy)	
<b>Cockpit Pilot Warning System: a preliminary study .....</b>	<b>678</b>
Calogero Orlando (Kore University of Enna, Italy)	
Andrea Alaimo (Kore University of Enna, Italy)	
Antonio Esposito (Kore University of Enna, Italy)	
<b>Dynamic Model of soft ferrites for Avionic Applications .....</b>	<b>682</b>
Hari Rimal (University of Perugia, Italy)	
<b>GNSS and GALILEO for Cis-lunar and Moon Navigation .....</b>	<b>687</b>
Gabriele Impresario (ASI - Italian Space Agency, Italy)	
Giuseppe D'Amore (ASI - Italian Space Agency, Italy)	
Cosimo Stallo (Radiolabs, Italy)	
Luigi Ansalone (ASI - Italian Space Agency, Italy)	
Alberto Tuozzi (ASI - Italian Space Agency, Italy)	

**Power Losses in Ferromagnetic Steel Sheets for Avionic Environment.....** 692  
Simone Quondam Antonio (University of Perugia, Italy)  
Hari Rimal (University of Perugia, Italy)

**Exploiting Fog as a Service Model for Designing Specialized Airport Information Systems .....** N/A  
Fahad Masood Siddiqui (Project Management Consultants, Mott MacDonald Group)

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**14:00 – 15:15**

**Room:** C320

**Telemedicine and e-Health: medical image data and datasets into healthcare interoperability with IoT**  
**Chairs:** Giuseppe Caruso (University of Paermo) and Luigi Rovati (University of Modena and Reggio Emilia)

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**Towards an electronic medical record for precision oncology: information and knowledge management .....** 703  
Norbert Maggi (University of Genoa, Italy)  
Carmelina Ruggiero (University of Genova, Italy)  
Mauro Giacomini (University of Genova, Italy)

**Spectral Repeatability of a Hyperspectral System for Human Iris Imaging .....** 708  
Luca Di Cecilia (University of Modena and Reggio Emilia, Italy)  
Francesco Marazzi (University of Modena and Reggio Emilia, Italy)  
Luigi Rovati (University of Modena and Reggio Emilia, Italy)

**Implementation of an IoT Node for biomedical applications .....** 713  
Sofia Bonfanti (Politecnico di Milano, Italy)  
Giulia Crocioni (Politecnico di Milano, Italy)  
Francesca Cunsolo (Politecnico di Milano, Italy)  
Giambattista Gruosso (Politecnico di Milano, Italy)

**An Algorithm for Estimating Gait Parameters through a Commercial Sensorized Carpet.....** 719  
Riccardo Bagarotti (University of Pavia, Italy)  
Elisa M Zini (University of Pavia, Italy)  
Elisa Salvi (University of Pavia, Italy)  
Lucia Sacchi (University of Pavia, Italy);  
Silvana Quaglini (University of Pavia, Italy)  
Giordano Lanzola (University of Pavia, Italy)

**Automating Lung Cancer Identification in PET/CT Imaging .....** 725  
Eleonora D'Arnese (Politecnico di Milano, Italy)  
Emanuele Del Sozzo (Politecnico di Milano, Italy)  
Arturo Chiti (Humanitas Research Hospital, Italy)  
Tanya Berger-Wolf (University of Illinois at Chicago, USA)  
Marco D Santambrogio (Politecnico di Milano & MIT, Italy)

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**15:15 – 16:00**

**Room: C320**

**Distributed ICT for health and wellness**

**Chairs:** Fernanda Irrera (University of Roma La Sapienza, ED Chapter Chair) and Maria-Alexandra Paun (IEEE Switzerland Chair)

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**Invited: Smart devices for health and AAL in the new concept of smart living.....N/A**  
Pietro Siciliano (IMM-CNR Lecce, Italy)

**A computer vision algorithm for the estimation of the human hair diameter .....732**

Gabriele Maroni (University of Study of Bergamo, Italy)

Valerio Uberti (University of Study of Bergamo, Italy)

Simone Facheris (University of Study of Bergamo, Italy)

Fabio Previdi (University of Study of Bergamo, Italy)