

2024 IEEE International Workshop on Metrology for Living Environment (MetroLivEnv 2024)

**Chania, Greece
12-14 June 2024**



**IEEE Catalog Number: CFP24BK9-POD
ISBN: 979-8-3503-8502-1**

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IEEE Catalog Number:	CFP24BK9-POD
ISBN (Print-On-Demand):	979-8-3503-8502-1
ISBN (Online):	979-8-3503-8501-4

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WORKSHOP PROGRAM

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Efstathios Stamatooulos, National Technical University of Athens, Greece
Andrea Natalini, Engineering Ingegneria Informatica, Italy
Marilena Lazzaro, Engineering Ingegneria Informatica, Italy
Chiara Maria Capizzi, Engineering Ingegneria Informatica, Italy
Elissaios Sarmas, EPU-NTUA, Greece
Diego Arnone, Engineering Ingegneria Informatica, Italy
- 349 **Digitalizing Pipeline Network for Hydrogen-Blended Natural Gas Distribution Assessments**
Ben Alex Baby, University of Palermo, Italy
Filippo Luca Alberto Munafò, University of Palermo, Italy
Tancredi Testasecca, University of Palermo, Italy
Marco Beccali, University of Palermo, Italy
Marco Ferraro, National Council of Research, Italy
Germana Poma, AMG Energia SpA, Italy
- 355 **Efficiency Management of Built Environment: The Digitalization of Energy and Service Grids**
Marianna Rotilio, University of L'Aquila, Italy
Chiara Marchionni, University of L'Aquila, Italy
Alessia Massari, University of L'Aquila, Italy
Gianni Di Giovanni, University of L'Aquila, Italy
Davide Simeone, University of Brescia, Italy

Session 5.3 - Advancements in Technology and Digital Innovation for Structural Health Monitoring of Civil Engineering Structures and Infrastructures

Room: Room B

- 361 **Evaluation of Varying Noise Levels' Effects on Damage Detection in Structural Health Monitoring**
Marco Martino Rosso, Politecnico di Torino, Italy
Angelo Aloisio, University of L'Aquila, Italy
Giansalvo Cirrincione, University of Picardie Jules Verne, France
Giuseppe Carlo Marano, Politecnico di Torino, Italy
- 367 **Deep-Learning-Based Onset Time Precision in Acoustic Emission Non-Destructive Testing**
Joanthan Melchiorre, Politecnico di Torino, Italy
Leo D'Amato, Politecnico di Torino, Italy
Federico Agostini, University of Padua, Italy
Amedeo Manuello, Politecnico di Torino, Italy
- 373 **Computational Design Methods Comparison for the Optimization of Variable Section Continuous Beams**
Laura Sardone, Politecnico di Torino, Italy
Stefanos Sotiropoulos, Politecnico di Torino, Italy
- 379 **Workability and Mechanical Properties of Structural Foamed Concretes With Different Dry Densities, and Fine Sand Grain Sizes: Preliminary Study**
Shi Peng, Politecnico di Torino, Italy
Devid Falliano, Politecnico di Torino, Italy
Adriana Bravo Celi, Politecnico di Torino, Italy
Zhengxian Yang, Fuzhou University, China
Giuseppe Carlo Marano, Politecnico di Torino, Italy
Bruno Briseghella, Fuzhou University, China

Friday, June 14

Session 6.1 - New non-intrusive IoT paradigms based on unconventional AI approaches for and by measurement systems and methods

Room: Main Hall

- 384 Design of an Air Pollution Monitoring System Based on a Low-Cost Sensor Node**
Rocío A Guerrón, University of Calabria, Italy
Domenico Luca Carnì, University of Calabria, Italy
Francesco Lamonaca, University of Calabria, Italy
Marco Lanuzza, University of Calabria, Italy
Ramiro Taco, University of Calabria, Italy
Francesco D'Amore, National Research Council, Italy
Mariantonia Bencardino, National Research Council, Italy
- 390 Safeguarding Sensitive Data in the Era of IoT: A Study on Security Protocols for Distributed Measurement Systems**
Antonio Gentile, National Research Council, Italy
Davide Macrì, National Research Council, Italy
Francesco Lamonaca, University of Calabria, Italy
- 397 A Real Network Performance Analysis Testbed for Encrypted MQTT in DMS**
Antonio Gentile, National Research Council, Italy
Emilio Greco, National Research Council, Italy
Domenico Luca Carnì, University of Calabria, Italy
- 403 Network of Extended Reality-Enabled Laboratories for Remote Practical Training: Didactic in Between Virtual and Real Living Environment**
Francesco Lamonaca, University of Calabria, Italy
Annalisa Liccardo, University of Naples Federico II, Italy
Domenico Luca Carnì, University of Calabria, Italy
Eleonora Bilotta, University of Calabria, Italy
Anna Maria Palermo, University of Calabria, Italy
Giuseppe Spadafora, University of Calabria, Italy
- 409 Enhancing Privacy in Real-Time Stream Processing: Federated Transfer Learning Approaches**
Shwetha Jog, Marwadi University, India
Damodharan Palaniappan, Marwadi University, India
Jabbar MA, Vardhaman College of Engineering, India

Session 6.2 - Probability and Mathematical Statistics for Living Environment and Metrology

Room: Room A

- 415 Denoising Probabilistic Diffusion Models for Synthetic Healthcare Image Generation**
Antonella Iuliano, University of Basilicata, Italy
Pietro Liò, University of Cambridge, United Kingdom
Federico Romaniello, University of Basilicata, Italy
- 421 Urban Air Pollution Forecasting: A Machine Learning Approach Leveraging Satellite Observations and Meteorological Forecasts**
Giacomo Blanco, LINKS Foundation, Italy
Luca Barco, LINKS Foundation, Italy
Lorenzo Innocenti, LINKS Foundation, Italy
Claudio Rossi, LINKS Foundation, Italy

- 427 **Maximum Temperature Prediction Using Remote Sensing Data via Convolutional Neural Network**
Lorenzo Innocenti, LINKS Foundation, Italy
Giacomo Blanco, LINKS Foundation, Italy
Luca Barco, LINKS Foundation, Italy
Claudio Rossi, LINKS Foundation, Italy
- 432 **A Contribution to the Spatial Analysis of Territorial Systems Based on Graph-Structured Data**
Simone Corrado, University of Basilicata, Italy
Federico Romaniello, University of Basilicata, Italy
Francesco Scorza, University of Basilicata, Italy
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Session 6.3 - Building Information Modelling, sensors, and digital technologies: towards the development of multidomain platforms to monitor the built environment

Room: Room B

- 437 **Automatic Modelica BEM Generation From IFC BIM**
Hasan Sayegh, EDF, France
Georgios N Lilis, University College London, United Kingdom
Mathias Bouquerel, EDF, France
Thierry Duforestel, EDF, France
Kyriakos Katsigarakis, University College London, United Kingdom
Dimitrios Rovas, University College London, United Kingdom
- 442 **Modular Real-Time Monitoring System Architecture for Materials and Technologies to Improve Urban Heat-Island Effect and Water Runoff in HE MULTICLIMACT**
Diego Zamora-Sánchez, TECNALIA, Basque Research and Technology Alliance, Spain
Alberto Armijo, TECNALIA, Basque Research and Technology Alliance, Spain
Mireia Fernandez, COMSA SA, Spain
Adrian Lochner, NATURALEA, Spain
Jose Carlos Jimenez, TECNALIA, Basque Research and Technology Alliance, Spain
Beñat Arregi, TECNALIA, Basque Research and Technology Alliance, Spain
- 448 **3D Structure Estimation of Room Environment Using Semantic Segmentation and Model Fitting**
Junya Morioka, Meiji University, Japan
Ryusuke Miyamoto, Meiji University, Japan
- 454 **Measuring the Occupants' Well-Being in the Built Environment: Towards the Integration of Physiological and Environmental Parameters in a Multidomain BIM-Based Platform**
Gloria Cosoli, Università eCampus, Italy
Rifat Seferi, LIS Live Information System, Italy
Dianel Ago, Callisia, eCampus University, Italy
Marco Arnesano, Università eCampus, Italy
Marcel Schweiker, RWTH Aachen University, Germany
Rania Christoforou, RWTH Aachen University, Germany
Mina Moayyedi, RWTH Aachen University, Germany
Gian Marco Revel, Università Politecnica delle Marche, Italy
- 460 **Advancing Resilience of the Built Environment by Digital and Measurement Technologies**
Camilla Lanfranconi, RINA-C, Italy
Clemente Fuggini, RINA-C, Italy
Gloria Cosoli, Università eCampus, Italy
Gian Marco Revel, Università Politecnica delle Marche, Italy
Rita Chirico, RINA-C, Italy
Miltiadis Kontogeorgos, RINA-C, Italy
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POSTER SESSION

Room: Cultural center of Chania

- 465 **An Overview of a New Statistical Non-Intrusive Load Monitoring (NILM) Analysis and Recognition Approach for Domestic Environments: DENARDO**
Peppino Fazio, University Ca' Foscari of Venice - DSMN, Italy
Miralem Mehic, University of Sarajevo, Bosnia and Herzegovina
Maria Caterina Mannone, Ca' Foscari University of Venice, Italy
Flavio Astorino, PowerMeter Srls, Italy
Miroslav Voznak, VSB - Technical University of Ostrava, Czech Republic
- 470 **Networking Solutions for the Evaluation of Nature Based Interventions in Cities**
Stelios Kalogridis, Plegma Labs, Greece
Emmanuel S. Sardis, National Technical University of Athens, Greece
Eftychios Protopapadakis, University of Macedonia, Greece
Anastasios D Doulamis, National Technical University of Athens, Greece
Ioannis Kavouras, National Technical University of Athens, Greece
Nikolaos Ipiotis, Plegma Labs, Greece
- 475 **Induction Cooker Acoustic Assessment: Sound Quality Analysis and Correlation With Jury Test Results**
Valentina Pasquinelli, Università Politecnica delle Marche, Italy
Adriano Scaburri, Faber Spa, Italy
Anna Annoscia, Faber Spa, Italy
Leonardo Boccardo, Faber Spa, Italy
Paolo Castellini, Università Politecnica delle Marche, Italy
Milena Martarelli, Università Politecnica delle Marche, Italy
- 481 **Procedures and IT Infrastructures to Manage Nation-Wide Terrestrial Laser Scanners' Massive Data**
Marcello Marzoli, Ministry of Internal Affairs - National Fire Corps, Italy
Stefano Marsella, Ministry of Internal Affairs - National Fire Corps, Italy
Davide Pozzi, Ministry of Internal Affairs - National Fire Corps, Italy
Emanuela Natale, University of L'Aquila, Italy
Giulio D'Emilia, University of L'Aquila, Italy
- 487 **Sensing, Digital, and Management Strategies to Enhance the Built Environment Resilience in Cities**
Gloria Cosoli, Università eCampus, Italy
Alessandra Mobili, Università Politecnica Delle Marche, Italy
Francesca Tittarelli, Università Politecnica Delle Marche, Italy
Adriano Mancini, Università Politecnica Delle Marche, Italy
Alessandro Galdelli, Università Politecnica Delle Marche, Italy
Mosé Rossi, Università Politecnica Delle Marche, Italy
Gabriele Comodi, Università Politecnica Delle Marche, Italy
Giuseppe Scarpelli, Università Politecnica Delle Marche, Italy
Antonio Ferretti, Geotechnical Engineering Services Ltd., Italy
Giovanni Marinelli, Università Politecnica Delle Marche, Italy
Luca Domenella, Università Politecnica Delle Marche, Italy
Monica Pantaloni, Università Politecnica Delle Marche, Italy
Gian Marco Revel, Università Politecnica Delle Marche, Italy
- 493 **Innovative Applications of Deep Learning in Cultural Heritage Development and Preservation: A Customization Perspective**
Naman Bhatia, Manipal University Jaipur, India
Geeta Rani, Manipal University Jaipur, India
Vijaypal Dhaka, Manipal University, India
- 498 **A Deep Learning-Powered Intelligent System for Crowd Management and Seamless Navigation for Cultural Heritage Exploration**
Sonam Sonam, Manipal University Jaipur, India
Geeta Rani, Manipal University Jaipur, India
Vijaypal Dhaka, Manipal University Jaipur, India
- 503 **Fast Earthquake Damage Assessment System**
Antonino D'Alessandro, Istituto Nazionale di Geofisica e Vulcanologia, Italy
Salvatore Scudero, Istituto Nazionale di Geofisica e Vulcanologia, Italy
Giovanni Vitale, Istituto Nazionale di Geofisica e Vulcanologia, Italy

- 509 **A Takagi-Sugeno Fuzzy Logic Motor Control for Robot for Assistance to Individuals With Impairments**
Enrico Petritoli, Roma Tre University, Italy
Fabio Leccese, Roma Tre University, Italy
- 514 **Structural- Material Investigations on the Monumental Complex of San Domenico in Cosenza**
Claudia Dichiera, NoDo Servizi srl, Italy
Claudia Guzzo, NoDo Servizi srl, Italy
Renato Sante Olivito, University of Calabria, Italy
Alessio Capilupi, University of Calabria, Italy
- 520 **Satellite data for studying underground water in Malta: the DEMUWA project**
Sebastiano D'Amico, University of Malta, Malta
Luciano Galone, University of Malta, Malta
Emanuele Colica, University of Malta, Malta
Luca Piroddi, University of Malta, Malta
Adam Gauci, University of Malta, Malta
Paola Baccheschi, INGV, Italy
Cristiano Tolomei, INGV, Italy

Session 7.1 - Sensors and Systems for Environmental and Marine Monitoring

Room: Main Hall

- 525 **TETI Project - a Multiparameter Modular Buoy for a Comprehensive and Cost Effective Sea Water Monitoring**
Simone Panfiglio, University of Messina, Italy
Valentina Trovato, University of Bergamo, Italy
Maria Rosaria Plutino, National Council of Research, Italy
Silvia Sfameni, National Council of Research, Italy
Luca De Santis, NET7, Italy
Gianluca Insolubile, Nextworks Srl, Italy
Leonardo Iannucci, Politecnico di Torino, Italy
Luca Lombardo, Politecnico di Torino, Italy
Sabrina Grassini, Politecnico di Torino, Italy
Roberto Montanini, University of Messina, Italy
Antonino Quattrocchi, University of Messina, Italy
Antonio Cannuli, University of Messina, Italy
- 531 **H2 Sensing Performances of Ag₂O/Co₃O₄ Composites**
Madiha Khan, University of Messina, Italy
Simona Crispi, National Council of Research, Italy
Angelo Ferlazzo, University of Catania, Italy
Mozaffar Hussain, Air University, Pakistan
Antonio Cannuli, University of Messina, Italy
Giovanni Neri, University of Messina, Italy
- 536 **NiO-Promoted Metal Oxides/SPCE Electrochemical Sensors for Glucose Monitoring in Environmental Applications**
Zahra Akbari, University of Messina, Italy
Mokhtar Hjiri, Imam Mohammad Ibn Saud Islamic University, Saudi Arabia
Norah Hamad Alonizan, Imam Abdulrahman Bin Faisal University, Saudi Arabia
Giovanni Neri, University of Messina, Italy
- 541 **Fluorimetric and Ratiometric Probes Based on Carbon Nanomaterials Derived From the Brewing Industry Waste for Iron(III) Ion Detection in Aqueous Environments**
Viviana Bressi, University of Mediterranea of Reggio Calabria, Italy
Angelo Ferlazzo, University of Catania, Italy
Claudia Espro, University of Messina, Italy
Giovanni Neri, University of Messina, Italy

Session 7.2 - Measurements for enhancing sustainability and circularity of the construction sector: how to valorize construction and demolition wastes and optimize buildings life cycle?

Room: Room A

- 546 Circular Economy in the Built Environment Management Supported by Digital Twin. A Review**
Chiara Marchionni, University of L'Aquila, Italy
Alessandra Corneli, Università Politecnica Delle Marche, Italy
- 552 How to Valorize Construction and Demolition Wastes? Beyond the State of the Art Through Vision Systems and Artificial Intelligence Tools**
Gloria Cosoli, Università eCampus, Italy
Giovanni Salerno, Università Politecnica Delle Marche, Italy
Maria Teresa Calcagni, Università Politecnica Delle Marche, Italy
Giuseppe Pandarese, Università Politecnica Delle Marche, Italy
Luca Violini, Università Politecnica Delle Marche, Italy
Henrique de Melo Ribeiro, Brunel Innovation Centre, United Kingdom
Evelyne ElMasri, Brunel University London, United Kingdom
Mohmmad Ali Asgar Abbas, Brunel University London, United Kingdom
Gian Marco Revel, Università Politecnica Delle Marche, Italy
- 558 How to Quickly Characterize Construction and Demolition Wastes? Traditional and Advanced Portable Solutions in Comparison**
Alessandra Mobili, Università Politecnica Delle Marche, Italy
Gloria Cosoli, Università eCampus, Italy
Giovanni Salerno, Università Politecnica Delle Marche, Italy
Maria Teresa Calcagni, Università Politecnica Delle Marche, Italy
Simona Sabbatini, Università Politecnica Delle Marche, Italy
Elena Leoni, Università Politecnica Delle Marche, Italy
Gian Marco Revel, Università Politecnica Delle Marche, Italy
Francesca Tittarelli, Università Politecnica Delle Marche, Italy
Valeria Corinaldesi, Università Politecnica Delle Marche, Italy
Jacopo Donnini, Università Politecnica Delle Marche, Italy

Session 7.3 - Natural radioactivity in living environment - PART II

Room: Room B

- 564 RESRAD Biota Vs ERICA Tool: Challenges and Opportunities for Holistic Radiation Protection**
Giuseppe La Verde, University of Naples Federico II, Italy
Mariagabriella Pugliese, University of Naples Federico II, Italy
Chiara Imperato, University of Naples Federico II, Italy
Gaetano Gagliardo, University of Naples Federico II, Italy
Antonio Sarno, University of Naples Federico II, Italy
- 569 Space Environmental Health: Non-Invasive Holographic Imaging Flow Cytometry for Astronauts Biodosimetry**
Rocco Mottareale, University of Naples Federico II, Italy
Daniele Pirone, CNR-ISASI, Italy
Lisa Miccio, CNR-ISASI, Italy
Vittorio Bianco, CNR-ISASI, Italy
Pasquale Memmolo, CNR-ISASI, Italy
Marco Durante, GSI, Germany
Mariagabriella Pugliese, University of Naples Federico II, Italy
Pietro Ferraro, CNR-ISASI, Italy

575 The Reinvention of ^{226}Ra in an Industrial Area With the Application of a Preventive Radiometric Risk Management Procedure Without the Use of Radiometric Portals or Judicial Collaborators

Rosaria Ippolito, Studio I M, Energy and Environmental Assessments, Italy

Filomena Casaburi, ARPACAL, Italy

Rosario Aloisio, ARPACAL, Italy

Caterina Francesca Dardano, ARPACAL, Italy

Salvatore Procopio, ARPACAL, Italy

580 Enhancement of the Radon Activity Concentration in Crotona Indoor Environments Due to the Employment of TENORM as Inert Material

Antonella Nicolino, University of Calabria, Italy

Mattia Rocco Ligato, University of Messina, Italy

Federica De Luca, University of Messina, Italy

Mario Ferraro, University of Rome Sapienza, Italy

Salvatore Procopio, ARPACAL, Italy