

for **it** *aal*

***Ambient Assisted Living
13° Forum - Firenze 2024***

Scientific Program

The 13^o Forum of Italian Ambient Assisted Living (ForItAAL 2024) serves as the annual gathering for professionals, companies, end-user organizations, policymakers, research institutions, and universities.

ForItAAL provides a platform for discussing the challenges posed by digital transformation and smart technologies in the field of active and healthy aging. The primary goal is to foster innovation, share knowledge, and explore opportunities within the realms of Ambient Assisted Living, Active & Healthy Ageing, and Smart Living. Esteemed national and international speakers will contribute to the discussion.

ForItAAL intends to offer an opportunity for knowledge and insight into the effectiveness of welfare policies based on the integration of social and health care, and focused on the centrality of coordinated, multidisciplinary and innovative responses to the health and care needs of the users, in their working and domestic environments. It is significantly important the adoption of collaborative and integrated approach between operators and professional figures involved in the care system, in a synergy that enhances resources and skills and aims to improve and optimise the system of social, health and social services dedicated to families, older people, and the most fragile segments of the population.

Venues

Opening

Istituto degli Innocenti

Piazza Ss. Annunziata 12,

“Sala Brunelleschi”

50121 Firenze

Main Event &

Summer School

Centro Didattico Morgagni

Viale Morgagni 40/44

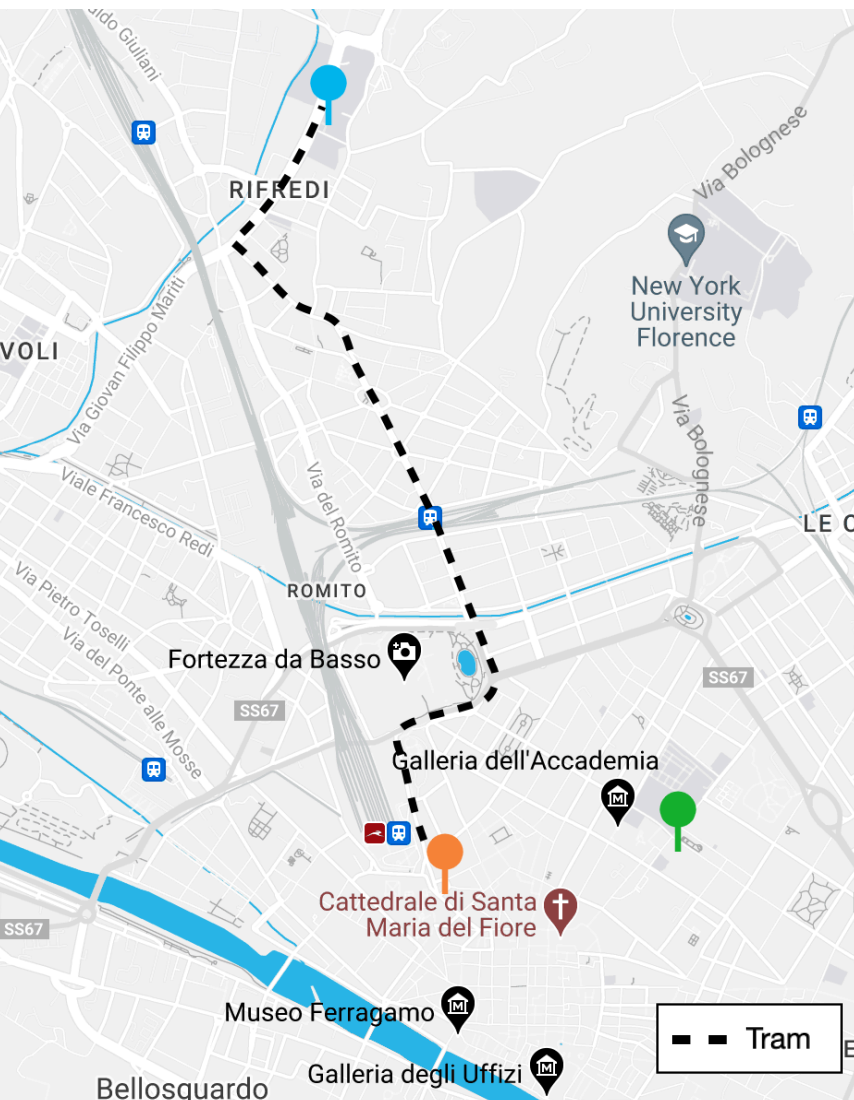
50123 Firenze




Social Dinner

Ristorante B-Roof

Grand Hotel Baglioni, Piazza dell'Unità 6


50123 Firenze



| When | 25th | 26th | 27th | 28th |
|-------|-------------------------------|--|--|--|
| Where | Centro Didattico Morgagni | Istituto degli Innocenti | Centro Didattico Morgagni | Centro Didattico Morgagni |
| 08:30 | | Registration | | |
| 09:00 | | Opening | Paper Session 2 (from 09:15) | Paper Session 6 (from 09:30) |
| 09:30 | |  <i>A Digital Future for Healthy Ageing & Summer School</i> | | |
| 11:00 | <i>ForItAAL Summer School</i> | Coffee Break | | |
| 11:30 | |  <i>A Digital Future for Healthy Ageing & Summer School</i> | Paper Session 3 | Paper Session 7 Closure |
| 13:00 | Lunch | | | |
| 14:00 | |  <i>A Digital Future for Healthy Ageing</i> | Paper Session 4 | |
| 15:30 | <i>ForItAAL Summer School</i> | Coffee Break | | |
| 16:00 | | Paper Session 1 | Paper Session 5 | |
| 17:30 | | | ForItAAL General Assembly | |
| 18:30 | | Welcome Reception | | |
| 20:30 | | | Social Dinner | |


Summer School

TUESDAY 25 June Centro Didattico Morgagni, Room 102 (First Floor)

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|---------------|--|--------------------|
| 10:00 | Registration Open | |
| 10:45 | Opening Summer School | |
| 11:00 – 12:00 | Architecture and Technology Integration in healthcare spaces to promote health <i>Prof. Nicoletta Setola, University of Florence</i> <i>Dr. Elena Bellini, University of Florence</i> | |
| 12:00–13:00 | ICTs for social- and health-care tele-monitoring applications <i>Prof. Lorenzo Mucchi, University of Florence</i> | |
| 13:00 – 14:00 |  | Light Lunch |
| 14:00 – 15:00 | Robotics and AI <i>Dr. Alessandra Sorrentino, University of Florence</i> | |
| 15:00 – 16:30 | Lessons learnt from Pharaon Italian pilots <i>Dr. Laura Fiorini, University of Florence</i> | |
| 16:30 – 17:00 | Tour of the Biomedical and Robotics Lab – UNIFI | |

WEDNESDAY 26 June Istituto degli Innocenti, Sala Brunelleschi

(see details in the next page)

| | | |
|--------------|---|---------------------|
| 09:00 | Open Ceremony | |
| 09:30 | Innovation in Action: Pharaon pilot results | |
| 11:00 |  | Coffee Break |
| 11:30 | Transforming care and lives: Pharaon’s journey towards sustainable impact and market solutions | |

WEDNESDAY 26 June

From Registration

8:15 Istituto degli Innocenti, Sala Brunelleschi
Piazza SS. Annunziata 12, 50121

09:00

Opening of Pharaon Day and ForItAAL

09:00 Opening ceremony

- **Greetings and practical information**
- **Introduction to ForItAAL and Pharaon Day**
Filippo Cavallo, University of Florence
Pietro Aldo Siciliano, IMM-CNR, Cluster SMILE
- **Institutional Greetings**
Serena Spinelli, Assessore Politiche Sociali, Edilizia Residenziale
Pubblica e Cooperazione Internazionale Regione Toscana

09:30 Innovation in Action: Pharaon pilot results

Session Chair: Christiane Grünloh, Roessingh Research and Development

- **Introduction to Pharaon Project** – Erika Rovini, University of Florence
- **Presentation of Global Results** – Pietro Dionisio, MEDEA S.R.L.
- **Experience and success stories from Pilots**
 - The Netherlands: Femke Nijboer, University of Twente
 - Slovenia: Mateja Erce Paoli, InnoRenew CoE
 - Portugal: Elisabete Pitarma, Caritas Coimbra;
Mariana Camacho, Misericordia da Amadora
 - Andalusia: Ana Perandrés, Ageing Lab Foundation
 - Murcia: Francisco Melero, CETEM
 - Italy: Laura Fiorini, UNIFI
- **Q/A**

11:00



Coffee Break

11:30 Transforming care and lives: Pharaon's journey towards sustainable impact and market solutions

Session Chair: Damir Haskovic, MINDS&SPARKS GmbH

- **Presentation of the impact assessment and MAFEIP cost-effectiveness results**
 - **Sustainability of the Andalusian pilot** – Pietro Dionisio, MEDEA S.R.L.

WEDNESDAY 26 June

- **Distinctive elements for exploitation**

- **Presentation of CATAALOG** – Paulina Villalobos Quesada, MINDS&SPARKS GmbH
- **Standardization in methodologies** – Madlen Schmutde, DIN, German Institute for Standardisation

12:00 Innovation in Europe: achievements from large scale pilots

Session Chair: Ilenia Gheno, AGE Platform Europe

- **From knowledge to implementation: strategies, lessons learned and recommendations**

- Christiane Grünloh, Roessingh Research and Development
- Francesco Giuliani, Fondazione Casa Sollievo della Sofferenza IRCCS
- Valentina Fiordelmondo, AIAS Bologna Onlus
- Elena Rocher, Valencia Innovation Capital
- Eleonora Vanni, President of LegaCoopSociali

13:00



Lunch

14:00 Esplorare il futuro delle politiche per un invecchiamento sano e attivo

Session Chair: Filippo Cavallo, University of Florence (UNIFI)

- **Introduction to Round Table** – Filippo Cavallo, University of Florence
- **Interventions of policy makers**

- Leonardo Marras, Assessore Economia, Attività Produttive, Politiche del Credito e Turismo, Regione Toscana
- Valentina Romano, Director of Welfare Department Apulia Region
- Gianna Elisa Berlingiero, Director of Economic Development Department Apulia Region
- Pietro Aldo Siciliano, IMM-CNR, Cluster SMILE
- Álvaro Hernando Hernando, Policy Officer at the EU AI Office
- Raffaele Spallone, Dirigente Divisione II – Politiche per la digitalizzazione delle imprese, l'innovazione e analisi dei settori produttivi

15:30



Coffee Break

WEDNESDAY 26 June

16:00 Paper Session 1 – Experiences and achievements in large scale pilots

Chair: Isabelle Lesterpt, G erontop le Nouvelle-Aquitaine

Stakeholder Skill Training in Participatory Health Research: Themes and Topics for Future Research

Kira Oberschmidt, **Christiane Gr nloh**, Kevin Doherty, Ria Wolkorte, Sheree May Sa mannshausen, Lara Siering,  sa Cajander, Michal Dolezel, Svante Lifvergren, Karin van den Driesche

Impact of Training Programmes in Digital Skills to Reduce Unwanted Loneliness in Older Andalusian Women

Ana Mar a Perandr s G mez, Mar a P rraga-Vico, David D az-Jim nez, Javier Medina-Quero, Aurora Polo-Rodr guez

AmiCare: Ambient Intelligent and Assistive System for Caregivers support: (re)design of functionalities for the framework of the Pharaon project

Miguel  ngel Beteta, Rafael Maestre-Ferriz, Andres L. Bleda, Sergio Abbenante, Juan Luis Leal Contreras

Health Empowerment for Older Adults through IoT: A case study of telecare for Chronic Heart Failure patients

Mar a Victoria Bueno Delgado, Franciso J. Melero-Mu oz, Miguel  ngel Beteta, Rafael Maestre-Ferriz, Gorka S nchez-Nanclares

“I thought: everybody wants to participate, right?” – Exploring patient motivation for taking part in long-term qualitative research

Kira Oberschmidt, Christiane Gr nloh, Marijke Broekhuis, Michael Bui, Monique Tabak

18:00 Closure of the day

18:30



Welcome reception (for those who registered)

THURSDAY 27 June

Centro Didattico Morgagni, Auditorium B (First Floor)

08:30 *Registration Open*

09:15 *Paper Session 2 - Technological Innovations in Dementia, Parkinson's, and Post-Stroke Rehabilitation*

Chairs Erika Rovini, Università degli Studi di Firenze

Gianmaria Mancioffi, Università degli Studi di Firenze

09:15 *Non-drug therapy through multisensory stimulation for patients with severe dementia: Multisensory Stimulation Lab (MS-Lab) project*

Grazia D'Onofrio, Alessandra De Luca, Gianfranco Borrelli, Alessandro De Robertis, Giovanni Diraco, Filomena Ciccone, Viviana Politi, Giulia Greco, Leonardo D'Alessandro, Francesco Crudele, Pierfrancesco Losito, Alberto Boccadamo, Massimo Pistoia, Daniele Sancarlo

09:30 *Development of tasks for SoftBank Pepper to prevent the onset of Mild Cognitive Impairment in older adults*

Alfonsina D'lorio, **Giovanni Luca Di Benedetto**, Alessandra Sorrentino, Filippo Cavallo, Lucia Di Laora, Gabriella Santangelo, Gennaro Cordasco, Anna Esposito

09:45 *Technologies for Home-based Post-stroke Upper Limb Rehabilitation: A Thematic Analysis of Perspectives among Primary, Secondary, and Tertiary End Users*

Margherita Rampioni, **Sara Leonzi**, Marco Benadduci, Vera Stara

10:00 *Development and Validation of a New Qualitative Pain Assessment Model: Preliminary Results of the WORDSforPAIN Project*

Mario De Marco, Letizia Cipriani, Marco Baccini, Giulio Cherubini, Michele Piazzini, Giacomo Relli, Alice Livoti, Maria L. del Vicario, Stefano G. Doronzio, Gianmarco Tuccini, Goffredo Guidi, Donata Bardi, Roberta Lanfredini, Francesca Cecchi

THURSDAY 27 June

10:15 *Definition of Reliability and Validity of Sensor-Derived Measurements in Parkinson's Disease Population: the INERTIAL Study*

Giulio Cherubini, Mario De Marco, Michele Piazzini, Erika Rovini, Gianmaria Mancioffi, Filippo Cavallo, Marco Baccini, Gemma Lombardi, Francesca Cecchi

10:30 *Study and development of novel experimental methods for rigidity assessment in Parkinson's Disease using sEMG and IMU wearable sensors.*

Beatrice Francalanci, Erika Rovini, Pietro Benvenuti, Filippo Cavallo

10:45 *An Innovative Monitoring System based on non-Intrusive IoT Technologies to improve Elderly Lifestyle*

Ilaria Sergi, Teodoro Montanaro, Amir Ali, Giovanni Barone, Raffaele Verde, Vittorio Reccia, **Gianluca Lerose**, Lorenzo Monti, Nicola Ferrara, Giuseppe Rengo, Leonardo Bencivenga, Marco Aracri, Luigi Patrono

11:00



Coffee Break

11:30 ***Paper Session 3 - Co-design and Technology: Advanced Solutions for Autonomy and Well-being***

Chairs Lorena Rossi, IRCCS INRCA

Alessandra Sorrentino, Università degli Studi di Firenze

11:30 *How do Older Adults Envision a Vocal Assistant? Results of a Voice User Interface Co-design Session.*

Claudia Franceschetti, Rachele Alessandra Marziali, Oscar Zanutto, Laura Lionetti, Valentina Tombolesi, Lorena Rossi, Mirko Di Rosa

11:45 *Independent living of visually impaired elderly supported by voice operated digital assistant*

Federica Calabria, Matilde Bernardi, Alessio Capitanelli, Marta Cristofanini

THURSDAY 27 June

12:00 *AIRCA: co-design of scenarios for treating Autism Spectrum Condition with NAO robot*

Nunzio Alberto Borghese, Eleonora Chitti, Francesca Ciardo, Raffaele Scuotto, Filippo Cavallo, Laura Fiorini, Lorenzo Pugi, Rossana Actis-Grosso, Benedetta Olivari, Marina Tedoldi, Carla Carenzi, Paola Ricciardelli

12:15 *They are the champions - identifying and supporting champions in eHealth Action Research projects*

Kira Oberschmidt, Christiane Grünloh, Mateja Erce, Francisco José Melero Muñoz, Elisabete Raquel Simão Pitarma, Monique Tabak

12:30 *KALI project: a new concept for health promotion within waiting rooms*

Francesco Bertiato, Elena Bellini, Nicoletta Setola

12:45 *How older adults integrate smart and robotic technologies into the daily lives*

Leopoldina Fortunati, Anna Esposito, Manuela Farinosi, Filippo Cavallo

13:00



Lunch

14:00 Paper Session 4 - Advanced Smart Assistive Technologies for Rehabilitation and Treatments

Chairs Laura Fiorini, Università degli Studi di Firenze

Riccardo De Benedictis, Consiglio Nazionale delle Ricerche

14:00 *Pilot robot-assistive approach study for children with autism (PROSPECT) project*

Grazia D'Onofrio, Antonella Calvio, Filomena Ciccone, Sergio Russo, Stella Centra, Sabino Mutino, Pasquale Di Gennaro, Giuseppina Iannacone, Michele Germano, Matteo Crisetti, Marco Lombardo, Francesco Giuliani, Annamaria Petito, Maria R. Pastore

THURSDAY 27 June

14:15 *First results of the RESTART National project*

Mariacarla Staffa, **Riccardo De Benedictis**, Ilaria Amaro, Alessia A. Citarella, Fabiola De Marco, Luigi Di Biasi, Gabriella Cortellessa, Claudia Di Napoli, Francesca Fracasso, Chiara Giacobbe, Marco Matarese, Gabriella Santangelo, Alessandra Sciutti, Genoveffa Tortora

14:30 *Exploring Emotional and Cognitive Engagement in School Age Children: An In-depth Analysis of Interaction with the NAO Social Robot during the Storytelling Activity*

Laura Fiorini, Stefano Scatigna, Lorenzo Pugi, Elena Adelucci, Filippo Cavallo, Alice Bruni, Benedetta Carotenuto, Maria Chiara Di Lieto, Benedetta Del Lucchese, Elisa Matteucci, Antea Scrocco, Giuseppina Sgandurra, Chiara Pecini

14:45 *Integration of Commercial Wearable Sensors and Social Robots into an Edge-Fog-Cloud Architecture to Support Rehabilitation Practice*

Marianna Capecci, Elisa Andrenelli, Albin Bajrami, Gloria Beraldo, Maria Gabriella Ceravolo, Francesco Crudele, Dino D'Alessandro, Massimiliano D'Amico, Alessandro De Robertis, Maurizio Gaziano, Angela La Forgia, Alessia Laforgia, Giovanni Melone, Matteo Palpacelli, Alessandro Umbrico, **Gabriella Cortellessa**

15:00 *Single RGB-D Camera-Based Gait Analysis in Neurological Disorder Monitoring*

Giovanni Diraco, Andrea Manni, Marianna Delussi, Marina de Tommaso, Pietro Siciliano, Alessandro Leone

15:15 *Wearable tactile display of softness for virtual reality-based cognitive rehabilitation*

Gabriele Frediani, **Federico Carpi**

15:30



Coffee Break

THURSDAY 27 June

16:00 Paper Session 5 – Policies and Future Perspectives of Ambient Assisted Living

Chairs **Gabriella Cortellessa**, Consiglio Nazionale delle Ricerche
Gianmaria Mancioffi, Università degli Studi di Firenze

16:00 *Novice action researchers' theoretical understanding and practical implementation of action research in eHealth*

Kira Oberschmidt, Christiane Grünloh, Lex van Velsen

16:15 *Embracing sustainable change in healthcare assistive technologies: strategies for pilot continuity and innovation*

Jasmine Pani, Erika Rovini, Filippo Cavallo, Laura Fiorini

16:30 *Smart Elderly Care in China: a preliminary overview*

Anna Di Toro

16:45 *Adapted Physical Activity and Behavioral Analysis for Active and Healthy Aging*


Paolo Barsocchi, Franca Delmastro, Lorenza Pratali

17:15 *Exploring Workers' and Customers' Acceptance and Safety Perceptions of anti-Covid-19 IoT Technologies in a Retail Setting*

Patrik Pluchino, Filippo Zordan, Valeria Santus, Anna Spagnolli, Andrea Zanella, Alberto Sozza, Giuseppe Bova, Luciano Gamberini

17:30 *Enhancing Robotics for Effective Support in Active Assisted Living Environments*

Riccardo De Benedictis, Claudia Di Napoli, Francesca Fracasso, Gabriella Cortellessa

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| 17:45 – 18:30 | ForItAAL General Assembly | |
| 20:30 |  | Social Dinner & Award Ceremony Ristorante B-Roof Grand Hotel Baglioni, Piazza Dell'Unità 6 |

FRIDAY 28 June

Centro Didattico Morgagni, Auditorium B (First Floor)

08:30 *Registration Open*

09:30 ***Paper Session 6 -Cutting-Edge Technologies for Senior Care and Assisted Living***

Chairs *Alessandro Leone, Consiglio Nazionale delle Ricerche*
Andrea Orlandini, Consiglio Nazionale delle Ricerche

09:30 *Advanced Semantic Integration with RDF and R2RML for Unified Data Management*

Mehran Pourvahab, Anilson Monteiro, Farzaneh Lashgari, Seyed Jalaeddin Mousavirad, Rafael Maestre-Ferriz, Sebastião Pais

09:45 *Enhancing Senior Wellness with Optimized Online Volunteer Services: Presenting a Data-Driven Conceptual Model Using Multimodal Recommender Systems*

Farzaneh Lashgari, Mehran Pourvahab, Anilson Monteiro, Nuno Pombo, Sebastiao Pais

10:00 *Advanced Sensors-based Infrastructure for Active Ageing and Well-Being: the 4Frailty Project*

Bruno Andò, **Mattia Manenti**, Giacomo Corvisieri, Tullio Flavio Fici, Antonio G. Spampinato, Francesco Di Salvo, Emanuele Ragusa, Paolo Zampognaro, Vincenzo Falanga, Federica Saccà

10:15 *A transfer learning approach for an automatic fall detection system based on the combined use of a smartwatch and a smartphone*

Andrea Caroppo, Andrea Manni, Gabriele Rescio, Anna Maria Carluccio, Pietro Aleardo Siciliano, Alessandro Leone

10:30 *Do you want to play with me? Preliminary study of a motor control walking game with Pepper robot*

Marco V. Maselli, Gioele Gavazzi, Jasmine Pani, Alessandra Sorrentino, Gianmaria Mancioffi, Filippo Cavallo, Laura Fiorini

FRIDAY 28 June

10:45 *Embedded Systems and Technologies in Health-Related Industry 4.0/5.0*

Teresa Restivo

11:00



Coffee Break

11:30 *Paper Session 7 – Exploring Social capabilities in AAL application*

Chairs **N. Alberto Borghese**, Università degli Studi di Milano

Alessandra Sorrentino, Università degli Studi di Firenze

11:30 *Towards Semi-Autonomous Avatars to Assist Clinicians in Home and Hospital Environments*

Rachele Piras, **Maddalena Feder**, Giorgio Grioli, Antonio Bicchi, Christian Lunetta, Manuel Giuseppe Catalano

11:45 *Design and Implementation of a storytelling robot: preliminary evaluation of a GAN-based model for co-speech gesture generation*

Lorenzo Pugi, Alessandra Sorrentino, Laura Fiorini, Filippo Cavallo

12:00 *Emotion recognition from unimodal to bimodal: Exploring the effects of communicative modes and gender of stimuli on the decoding accuracy of dynamic emotional expressions.*

Rosa Milo, Terry Amorese, Marialucia Cuciniello, Gennaro Cordasco, Anna Esposito

12:15 *A mobility indoor solution based on the affective state evaluation: the E-MOTIVE project about the Empowering Mobility with affective cOmputing, brain-computer inTerface, Internet of Things, and Vital signs monitoring for Smart WhEelchairs*


Sabrina Iarlori, David Perpetuini, Michele Tritto, Daniela Cardone, Alessandro Tiberio, Manish Chinthakindi, Chiara Filippini, Luca Cavanini, Alessandro Freddi, Francesco Ferracuti, Arcangelo Merla, Andrea Monteriù

FRIDAY 28 June

Towards a High-level Control Architecture for Social Robots in Behavior

12:30 *Change Interventions*

Gloria Beraldo, Alessandro Umbrico, **Andrea Orlandini**

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| 12:45 | ForItAAL Closure | |
| 13:00 |  | Lunch |

Committee

General Chair, Co-Chair

Filippo Cavallo, Università degli Studi di Firenze

Pietro Aldo Siciliano, Consiglio Nazionale delle Ricerche

Program Chair

Alessandra Sorrentino, Università degli Studi di Firenze

Publication Chair

Laura Fiorini, Università degli Studi di Firenze

Exhibition Chair

Jasmine Pani, Università degli Studi di Firenze

Summer School Chair

Bruno Andò, Università di Catania

Award Committee

Leopoldina Fortunati, Università di Udine -Chair

Erika Rovini, Università degli Studi di Firenze

N. Alberto Borghese, Università degli Studi di Milano

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Erica Li Calzi, Beatrice Francalanci, Marco V. Maselli, Gianmaria Mancioppi,
Lorenzo Pugi, Ivana Ragusa, Lorenzo Rettori, Maria Caterina Sestito.

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Mario A. Bochicchio, *Università degli Studi di Bari Aldo Moro*

Irene Burroni, *Centro Sperimentale del Mobile Toscana*

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Paolo Ciampolini, *Università di Parma*

Gabriella Cortellessa, *CNR*

Filippo D'Arpa, *Distretto Tecnologico Sicilia Micro e Nano Sistemi*

Giuseppe De Pietro, *CNR*

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