ISIEA 2026

5th International Symposium on Industrial Engineering and Automation

People, Planet, and Progress: New Trends in Design and Manufacturing

Bolzano - June 17-19, 2026

Co-funded by the European Union

SUN RISE SMALLER (STRATEGIC) UNIVERSITIES NETWORK FOR REGIONAL INNOVATIVE AND SUSTAINABLE EVOLUTION

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ISIEA 2026

17 - 19 June 2026
Free University of Bozen-Bolzano
Campus NOI Techpark Bozen-Bolzano
Faculty of Engineering

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Call for papers

The chairs of ISIEA 2026 are Aurora Berni, Yuri Borgianni, Margherita Molinaro and Guido Orzes with the participation of Dominik Matt as honorary chair. They cordially invite you to submit your most recent contribution within the General Track and/or Special/Invited Tracks organized by peers, which deal with specific topics. Contributions can be in the form of full-papers, which will be published in a Scopus-indexed collection of proceedings, and extended abstracts, which will be included only in the book of abstracts. Both forms of contributions will be reviewed and have to be presented in person at the conference.

General track

Topics of the General Track include, but are not limited to:

- Social and Environmental Sustainability
- Smart and Sustainable Production
- Industry 4.0 / Industry 5.0
- Flexible and Human-Centered Manufacturing
- Innovative Learning Methods in Engineering
- Digital Twins and Internet of Things
- Mechanical Design & Optimization
- Mechatronics & Automation, Robotics
- Supply Chain Management
- Purchasing Management
- Sustainable Design
- User Experience and Social Sustainability in Engineering research

Special tracks

The topics of the Special tracks are:

- Circular Economy in the Manufacturing Industry: challenges and opportunities
- Sustainable Supply Chain Management
- Achieving Sustainable Industry 5.0: The Role of Lean and Digitalization
- Transforming Operations and Supply Chains with AI: Skills, Challenges, and Strategies
- Bridging Research and Practice of Value-based & Digitally-enabled Healthcare Systems
- Energy system transition- possibilities and challenges for industry
- Survey research in Operations Management
- Large-Scale Additive Manufacturing
- Beyond users' preferences and functions: alternative starting points for product design
- Automated Design for Manufacturing
- Natural Materials in Engineering: Biocomposites, Perception, and Product Design
- XR-Based Approaches for Product Presentation and Interaction
- Design interactions: how sustainability, creativity and perception work contextually

Special Tracks

Circular Economy in the Manufacturing Industry: challenges and opportunities

Chairs: Gianmarco Bressanelli, Marco Perona, Nicola Saccani University of Brescia, Italy

Contact: gianmarco.bressanelli@unibs.it

Abstract and call for contributions

Circular Economy represents an innovative paradigm for achieving sustainable transformation in the manufacturing industry. Implementing Circular Economy requires a variety of actions—such as product redesign, novel business models, and closed-loop supply chains—while being increasingly enabled by digital technologies. Beyond environmental benefits, Circular Economy can also lead to economic advantages for manufacturing firms, including cost reduction, reduced risks, and improved competitiveness. However, achieving circularity in manufacturing remains challenging, and many companies are still lagging behind in this transition. This Special Track aims to create a forum for discussing the latest research on the challenges and opportunities that manufacturing firms encounter on their path toward Circular Economy. We welcome contributions addressing, but not limited to: Challenges and barriers hindering Circular Economy adoption in manufacturing; antecedents, drivers, and enablers of Circular Economy practices; business models and supply chain management for Circular Economy; assessment of the sustainability impacts of Circular Economy scenarios. Both theoretical and practical contributions are encouraged, using diverse research methods including case studies, surveys, simulations, and qualitative approaches.

Sustainable Supply Chain Management

Chairs: Stefan Seuring, University of Kassel, Germany; Philipp C. Sauer, NEOMA Business School, France

Contact: seuring@uni-kassel.de

Abstract and call for contributions

In the context of global environmental and social crises, manufacturing, operations and supply chains need to transform to more sustainable modes of operation. This special track intends to provide a discussion forum on the latest research on Sustainable Supply Chains and their management. Authors are welcome to submit papers with a sound theoretical grounding and supported by empirical evidence that help understand the current challenges in the field, as well as suitable responses to them. In this wider context, papers covering any industry or geographical context for the following fields of research will be considered, amongst others: Sustainability in Supply Chains, Supply Chain Due Diligence, Traceability in Supply Chains, Supply Chain Governance, Technologies for Sustainable Supply Chains, Tensions in Supply Chain Management, Circular Supply Chains, Sustainable Supply Chains in Emerging Economies.

Achieving Sustainable Industry 5.0: The Role of Lean and Digitalization

Chairs: Susana Nicola, José Carlos Sá, ISEP, Polytechnic of Porto, Portugal

Contact: sca@isep.ipp.pt

Abstract and call for contributions

In the context of the transition to Industry 5.0, the convergence of sustainability, advanced engineering, and intelligent automation in industrial processes is gaining attention. This special track aims to facilitate discussion on the latest research examining how Lean methodologies and digitalization strategies can contribute to a more sustainable and adaptive industrial ecosystem. Authors are welcome to submit papers exploring the integration of Lean principles with cutting-edge technologies, such as artificial intelligence (AI), the internet of things (IoT), digital twins, predictive analytics, and intelligent automation. Themes related to practical applications, including the development of smart apps using large language models (LLMs), the use of low-code platforms for agile deployment, app development using no-code solutions, and the implementation of data-driven decision support systems, will also be accepted. Papers covering smart manufacturing, sustainable operations, human-machine collaboration, digital lean tools, industrial process engineering, real-time monitoring and control, human-centric automation, and continuous improvement in manufacturing operations will also be considered. This track highlights innovative contributions supporting the evolution of Industry 5.0 through sustainable, efficient, and intelligent engineering solutions that align with environmental and societal goals.

Transforming Operations and Supply Chains with AI: Skills, Challenges, and Strategies

Chairs: Marcos Dieste, Matteo Podrecca, University of Padova, Italy;
Maria Pia Ciano, Nottingham University Business School, UK; Francesco Arcidiacono, Schaeffler Automotive Buehl, Germany

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Abstract and call for contributions

In the context of operations and supply chain management (OSCM), artificial intelligence (AI) is attracting increasing attention as a transformative force shaping efficiency, adaptability, and value creation. This special track intends to provide a discussion forum on the latest research exploring how AI reshapes OSCM, with particular emphasis on the interplay between technological capabilities, organizational processes, and workforce readiness and skills. Authors are welcome to submit papers that investigate AI adoption, skill development, implementation challenges, and the broader economic, social, and managerial implications of AI in OSCM. Papers addressing adjacent fields will also be considered, including applications of big data analytics, machine learning, and automation, as well as contributions on education, training, policy, and human-technology interaction in AI-driven contexts. By integrating multiple perspectives, this track aims to advance theoretical understanding and provide actionable insights for managers, educators, and policymakers in the AI era of OSCM.

Bridging Research and Practice of Value-based & Digitally-enabled Healthcare Systems

Chairs: Elena Pessot, Simone Gitto, University of Siena, Italy;
Daniele Spoladore, National Research Council of Italy, Italy;
Sara Vannelli, University of Florence, Italy

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Abstract and call for contributions

The increasing attention towards patient health outcomes in the so-called Value-Based Healthcare (VBHC), together with the exponential developments in digital technologies, especially Artificial Intelligence (AI), is redefining care delivery. However, a significant gap remains between technological advancements and real-world implementation. This special session explores how AI-driven predictive analytics, digital platforms, and interoperable ecosystems can enhance patient-centred care, improve clinical decision-making, and optimize resource allocation for healthcare services and logistics. It intends to provide a discussion forum on the latest research and practical applications of digital technologies and organizational design principles to enhance VBHC from multiple viewpoints. Authors are welcome to submit papers aiming to explore the balance between standardisation and personalisation of care, the ethical concerns around data privacy and bias, the data collection and integration challenges, and the need for scalable, evidence-based solutions to support decision-making and delivery of healthcare services. Papers covering the following fields will also be considered:

- New trends and challenges in AI and Advanced Analytics applications in healthcare
- Clinical Decision Support Systems
- Scalability and Interoperability of Digital Health Solutions
- Impact of digital technologies in managing patients and pharmaceutical logistics
- Policy and regulation for AI in Healthcare
- Change management and organizational design principles for VBHC

Energy system transition- possibilities and challenges for industry

Chair: Eva Thorin, Mälardalen university, Sweden

Contact: eva.thorin@mdu.se

Abstract and call for contributions

In the context of mitigation of climate change and increasing sustainable energy supply, energy systems all over the world is in transition with for example increased integration of renewable energy sources, electrification, digitalisation, flexibility solutions including storage etc. This special track intends to provide a discussion forum on the latest research on energy supply for industry and the challenges and opportunities the transition of the energy system brings. Authors are welcomed to submit papers aiming to discuss measures for industry to secure energy supply, possibilities for industry to interact with the energy system, and to improve sustainable and efficient energy use in industry.

Survey research in Operations Management

Chairs: Andrea Bikfalvi, University of Girona, Spain;
Angela Jäger, Fraunhofer Institute for Systems and Innovation Research ISI Karlsruhe, Germany;
Mantas Vilkas, Kaunas University of Technology, Lithuania
Galina Robertsone, Riga Technical University, Latvia

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Abstract and call for contributions

On the rise and spread of advanced manufacturing technologies (AMT) and new forms of work organization (NFWO) in the context of Industry 4.0 heading towards Industry 5.0, there is a need for recent, sound, large-scale survey research addressing the challenges of operations management (OM). A key and necessary ingredient is the disposal of empirical evidence allowing to raise inquiring research questions and hypothesis, elaborating statistical models, generating results for thought-provoking discussions. Authors are welcome to submit papers aiming to contribute to the growing body of knowledge on survey research in operations management, challenging the academic debate, advancing methodological issues and generating intriguing results. Papers covering the following fields (but not limited to) will be considered:

- Exploring the determinants of specific AMTs and/or NFWO
- Puzzling feasible and meaningful combinations of AMTs and NFWOs
- Demonstrating performance effects of specific AMTs and/or NFWOs, or their combinations
- Reflecting methodological alternatives for an optimal measurement and surveying in OM

Large-Scale Additive Manufacturing

Chairs: Daniel Moreno Nieto, Daniel Moreno Sanchez, Universidad de Cadiz, Spain

Contact: daniel.moreno@gm.uca.es

Abstract and call for contributions

In the context of Additive Manufacturing, the Large Scale is attracting increasing attention. This special track intends to provide a discussion forum on the latest research on additive manufacturing with building volumes of over one cubic meter, in polymers, metals and ceramics. Authors are welcomed to submit papers aiming to share the latest findings and research in any of these specific fields. Contributions related to materials development and characterization, advancements in processes or industrial designs, applications, or any other topics pertinent to the subject will be welcomed for consideration.

Beyond users' preferences and functions: alternative starting points for product design

Chair: Miguel Ángel Artacho Ramírez, Politechnic University of Valencia, Spain

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Abstract and call for contributions

In the 1990s, as markets shifted from demand-driven to offer-driven, user-centered design emerged as a dominant methodology. Capturing the user's voice became crucial for brand differentiation, and user preferences and desires formed the bedrock of most design processes—a trend that has persisted for decades. Yet, recent product innovations suggest a shift in priorities. For instance, disposable water bottles with attached caps now emphasize environmental considerations—reflecting society's growing ecological awareness—even when such design choices may compromise user comfort.

This evolution invites us to reconsider whether a paradigm shift is underway, moving from anthropocentric design towards more ecocentric or biocentric perspectives. While it may be premature to declare a definitive change, it is clear that alternative methodological approaches are emerging, ones that prioritize factors beyond user preferences (though not excluding them entirely).

Notable examples include methodologies that anchor design in the analysis of forms and shapes; material-driven design, where the properties of materials inspire the creation of optimal forms; and sensory-driven proposals, such as those examining acoustic perception during product use. Additionally, ethics-based design seeks to balance social and environmental values with innovation.

This special track aims to highlight perspectives and case studies where the starting point for design diverges from traditional user preferences and demands. Accordingly, we encourage contributions across diverse themes, including but not limited to: sustainable design, nature-based design (eco-design, bionics), value-based design, technology-driven design, shape-based design, material-based design, and sensory-based design.

Automated Design for Manufacturing

Chair: Patrick Pradel, University of Loughborough, UK

Contact: P.Pradel@lboro.ac.uk

Abstract and call for contributions

In the rapidly evolving landscape of digital design tools and technologies, such as data-driven design, generative design, and machine learning, the topic of automated design for manufacturing is gaining increasing attention. This special track aims to provide a platform for discussing the latest research on automating engineering design and product development. Authors are encouraged to submit papers proposing and/or validating cutting-edge approaches within this emerging field. Papers covering simulation-driven design, Gen AI in design, and computational design will also be considered.

Natural Materials in Engineering: Biocomposites, Perception, and Product Design

Chair: Tim Huber, Luxemburg Institute of Science and Technology (LIST), Luxemburg

Contact: tim.huber@list.lu

Abstract and call for contributions

Circular manufacturing will hinge on materials that are renewable, repairable, and desirable in use. In this context, cellulosic fibre composites are attracting increasing attention for their favourable specific properties and biogenic carbon content. This special track foregrounds product design with biocomposites: integrating colour–material–finish (CMF) strategies for bio-based surfaces; linking fibre architecture, polymer selection, interfaces, and coatings to tactile, acoustic, and olfactory signatures; and employing prototyping methods, material libraries, appearance models, and sensory evaluation, to translate laboratory performance into compelling user experiences. Authors are welcome to submit papers aiming to demonstrate manufacturing readiness, quantify environmental and economic performance with transparent assumptions, and evidence user acceptance through rigorous perception studies and in-context trials. To keep the scope focused, topics include: (1) Fibre architecture & polymer chemistry, UD/woven/non-woven strategies; recyclable/bio-sourced matrices; interface design; (2) Process–structure control; (3) User-centred product integration, co-design with brands, haptic targets, UX metrics driving material specifications; and (4) Application case studies such as mobility interiors, consumer goods, and furniture with requirements mapping, trade-offs, and validation. By bridging materials science, human-centred design, and industrial engineering, the track advances validated, circular products.

XR-Based Approaches for Product Presentation and Interaction

Chairs: Almudena Palacios Ibáñez, Carlos García-García, Universitat Jaume I, Castellón, Spain

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Abstract and call for contributions

Extended Reality (XR) technologies have been present for several decades, yet their application in product design is relatively recent and is attracting increasing attention. Their integration into product presentation has been facilitated by decreasing costs and remarkable improvements in hardware and software, which have significantly enhanced performance and usability. As a result, Virtual Prototyping (VP) is becoming a key approach in product design, offering clear advantages for both industry and academia. By enabling immersive and interactive visualizations, XR reduces the use of physical prototypes, contributing to more sustainable and efficient design and manufacturing practices. This approach not only minimizes material consumption and environmental impact but also accelerates decision-making processes across the product lifecycle. Moreover, XR environments foster collaboration among designers, engineers, clients, and end-users by providing shared spaces for communication and evaluation. The use of advanced Head-Mounted Displays, incorporating features such as eye-tracking and face-tracking further allows for a deeper understanding of user behavior and the emotional impact of products. This special track intends to provide a discussion forum on the latest research on XR for product design and presentation. Authors are welcomed to submit papers exploring novel methods, tools, and case studies, as well as contributions covering sustainability, efficiency, interaction, and stakeholder engagement related to the use of XR for VP.

Design interactions: how sustainability, creativity and perception work contextually

Chair: Laura Ruiz Pastor, Universitat Jaume I, Castellón, Spain

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Abstract and call for contributions

In the context of contemporary design research, the intersections among sustainability, creativity, and perception are emerging as a significant focus, reflecting their growing relevance for both theory and practice. Addressing complex environmental and societal challenges requires not only the development of innovative product solutions but also a critical understanding of how these dimensions interact within different design contexts. This special track intends to provide a forum for discussion on the latest research exploring how design interactions unfold when sustainability, creativity, and perception are considered together. Authors are welcomed to submit papers aiming to advance theoretical perspectives, propose or refine methodological approaches, and present empirical studies that shed light on these contextual interrelations. Papers covering the following fields will also be considered: sustainable product and service design, creativity methods and tools, user perception and experience in real and virtual environments, applications of artificial intelligence to creativity and sustainability, and interdisciplinary approaches connecting design with evolving cultural, social, and technological contexts, including cultural and linguistic influences. This track seeks to deepen understanding of how design interactions contribute to sustainable and meaningful futures.

Submission

Dates and deadlines

Full papers - published

- ❑ 14/02/2026 ➢ Full Paper submission
- ❑ 21/03/2026 ➢ Reviewer's feedback
- ❑ 11/04/2026 ➢ Final submission (Camera ready)

Extended abstracts– not published

- ❑ 18/04/2026 ➢ Papers (abstract) submission
- ❑ 27/04/2026 ➢ Reviewer's feedback
- ❑ 10/05/2026 ➢ Final submission

17-19/06/2026 → ISIEA 2026

The submission system is now open: https://www.conftool.com/isiea2026/

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SUNRISE is a European University Alliance that brings together 9 smaller-sized universities from across Europe, with a strong focus on STEAM disciplines and regional development