# SUM2026

## 9th Multidisciplinary Symposium on Circular Economy & Urban Mining

20-22 May 2026, Procida, Italy

# PRELIMINARY PROGRAMME

(Updated on 23 April 2026)

# Symposium Schedule

Specific CE streams | Industrial sources & processes | Non technical issues | Biomass valorization | Italian session

## Wednesday 20 May 2026

| | | | | | |
|---|---|---|---|---|---|
| 09:30 - 11:00 | OPENING SESSION<br>Welcome addresses and introductory lectures<br>Chairs: Luisa Martins (PT), Andreas Bartl (AT) | | | | |
| 11:30 - 12:45 | SESSION A01<br>Circular Economy Strategies<br>Chair: | SESSION B01<br>Waste Quality and Collection<br>Chair: | SESSION C01<br>Workshop - Critical Raw Materials in Energy Transition<br>Chair: M. Šyc (CZ) | SESSION D01<br>Workshop - Advancing the Future of Steel Slag in Construction<br>Chair: A. Conforti (IT) | |
| 12:45 - 15:00 | *Lunch break* | | | | |
| 15:00 - 16:15 | SESSION A02<br>Plastics<br>Chair: | SESSION B02<br>Energy in Circular Economy<br>Chair: | SESSION C02<br>Circular Economy Strategies in Different Countries of the World<br>Chair: | SESSION D02<br>Workshop - $CO_2$ Hydrates for Carbon Capture, Utilization and Storage<br>Chair: A.P. Ribeiro (PT) | |
| 16:45 - 18:00 | SESSION A03<br>Decision Tools in Circular Economy<br>Chair: | SESSION B03<br>Artificial Intelligence in Circular Economy<br>Chair: | SESSION C03<br>Circular Economy in Managing Industrial Waste<br>Chairs: | SESSION D03<br>Workshop - Multidisciplinary Issues with PFAS in Circular Economy<br>Chair: T. Rashwan (UK) | |
| from 18:30 to midnight | SOCIAL EVENT: Welcome aperitif dinner on the terrace and karaoke evening | | | | |

## Thursday 21 May 2026

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| 09:30 - 10:45 | SESSION A04<br>Material Recycling from WEEE<br>Chair: | SESSION B04<br>Bioplastics<br>Chair: | SESSION C04<br>Circular Economy in Construction & Demolition Waste Management<br>Chair: | SESSION D04<br>Workshop - Legal Issues in Circular Economy and in End-of-Waste Procedures<br>Chair: M. Pettersson (SE) | |
| 11:15 - 12:30 | SESSION A05<br>Treatment for Textile Waste Recycling<br>Chair: | SESSION B05<br>Residues from Cars<br>Chair: | SESSION C05<br>Urban Drainage in Circular Economy<br>Chair: | SESSION D05<br>Workshop - Circular Bioeconomy & Insect-based Solutions for Environmental Sustainability<br>Chairs: A.P. Ribeiro, L. Martins (PT) | SESSION E05<br>Workshop - Infrastrutture Urbane in Territori Circolari<br>Chairs: A. Attademo, F. Paragliola, S. Piccirillo, M. Rigillo (IT) |
| 12:30 - 15:00 | *Lunch break* | | | | |
| 15:00 - 16:15 | SESSION A06<br>Role of Circular Economy in Wastewater Treatment<br>Chair: | SESSION B06<br>Insects Biorefinery<br>Chair: | SESSION C06<br>Workshop - Sustainable and Circular Architecture<br>Chair: M. Rigillo (IT) | SESSION D06<br>Workshop - Landfill Mining for Recovering Material and Energy Resources<br>Chair: R. Cossu (IT) | SESSION E06<br>Workshop - RUS: Ruolo degli Studenti per l'Economia Circolare nelle Università - Parte 1<br>Chairs: E. Perotto, M.C. Lavagnolo (IT) |
| 16:45 - 18:00 | SESSION A07<br>Resource Recovery and Environmental Impacts from Ashes<br>Chair: | SESSION B07<br>Microalgae and Plants Cultivation & Resource Recovery<br>Chair: | SESSION C07<br>Workshop - Activation of IRACE Focus Groups<br>Chair: R. Cossu (IT), L. Martins (PT) | SESSION D07<br>Workshop - Circularity in Health Care Waste Management<br>Chair: | SESSION E07<br>Workshop - RUS: Ruolo degli Studenti per l'Economia Circolare nelle Università - Parte 2<br>Chair: E. Perotto (IT) |
| from 18:30 onwards | SOCIAL EVENT | | | | |

## Friday 22 May 2026

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|---|---|---|---|---|---|
| 09:30 - 10:45 | SESSION A08<br>Management of Different Organic Waste Fraction<br>Chair: | SESSION B08<br>Critical Raw Materials<br>Chair: | SESSION C08<br>Workshop - Closing the Loop for Textiles?<br>Chair: A. Bartl (AT) | SESSION D08<br>Workshop - Strategies for Sustainability Education in Master's Programs<br>Chair: E. Boccaleri (IT) | SESSION E08<br>Workshop - Ruolo del Deposito sul Terreno dei Residui dell'Economia Circolare<br>Chair: R. Cossu (IT) |
| 11:15 - 12:30 | SESSION A09<br>Energy Production from Biomass<br>Chair: | SESSION B09<br>Circular Economy Case Studies from Universities<br>Chairs: | SESSION C09<br>Workshop - Crucial Issues in Critical Raw Materials Management<br>Chairs: A. Serpe, M.C. Lavagnolo (IT) | SESSION D09<br>Workshop - Sustainable and Circular WM in Developing Countries & Emerging Economies<br>Chair: R. Ramush (UK) | |
| 12:30 - 15:00 | *Lunch break* | | | | |
| 13:00 - 14:30 | IRACE - General Assembly<br>Chairs: L. Martins (PT), R. Cossu (IT) | | | | |
| 15:00 - 16:15 | SESSION A10<br>Conversion of Organic Waste to Biochar<br>Chair: | SESSION B10<br>Circular Strategies for WEEE<br>Chair: | SESSION C10<br>Microplastics Contamination and Removal<br>Chair: | SESSION D10<br>Workshop - The Role of Energy in the Circular Economy<br>Chair: A. Fantappiè (IT) | |
| 16:45 - 18:00 | CLOSING SESSION<br>Chair: R. Cossu (IT) | | | | |
| from 20:00 onwards | SOCIAL EVENT: Closing dinner and dancing party with live music | | | | |

## Poster Session - from 20 to 22 May 2026

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|---|---|
| 09:30 - 18:00 | SESSION PP<br>POSTER PRESENTATIONS |

**SESSION OP / / 20th May 2026 09:30 -11:00**
**OPENING SESSION**
Chair / *Presidente*: Luísa Martins (PT), Andreas Bartl (AT)

- ***Welcome Remarks***

- ***Keynote Presentations:***

  ***- A. Cunningham*** *(UK)*
  One Health and Sustainability: two sides of the same coin

  - ***L. Milios*** *(SE)*
  Insights into the upcoming Circular Economy Act – Anticipated instruments and background research by the Joint Research Centre of the European Commission

**SESSION A01 / / 20th May 2026 11:30 -12:45**
**CIRCULAR ECONOMY STRATEGIES**
Chair / *Presidente*: TBD

***C. Dalhammar*** *(SE)*
'Refuse' as a circular economy strategy: exnovation in product policy

***N. Fraeyman****, R. Cossu, S. Malfait, V. Duprez, K. Vanderwee, L. Demarre, E. Kiekens, S. Huysfeld, L. Boone, J. Dewulf (BE)*
Science, the art of prioritization and recyclability

***M. Somma****, V. Melillo, M. Schiavoni (IT)*
Extended producer responsibility and structural stagnation in essential waste streams - Behavioural evidence and institutional realignment in absorbent hygiene products

***Z. Li****, M. Han, G. Fang (CN)*
A circular economy pathway for the wine industry driven by sector-wide cleaner production

***M. Elias****, D. Panepinto, M. Zanetti (IT)*
Correlation Analysis of Global Copper Market Dynamics: A Dual-Perspective Approach for Demand Forecasting

**SESSION A02 / / 20th May 2026 15:00 -16:15**
**PLASTICS**
Chair / *Presidente*: TBD

***T.F. Astrup**, J.B. Horsholt, T. Senanu, C. Hindsgaul, P. Moloney, B. Hauge (DK)*
Unlocking industrial plastic circularity: enablers and barriers revealed

***G. Marmora**, C. Ferrara, V. Roselli, G. De Feo (IT)*
Reusable and single-use packaging in fresh fruit distribution: thresholds of environmental convenience from an LCA perspective

***G. Beggio**, A. Ndiforngu, R. Dall'Anese, T. Bonato, M.C. Lavagnolo (IT)*
PFAS in recycled plastics: from detection to preliminary estimation of humane exposure

*M. Pasetto, G. Beggio, M.C. Lavagnolo, **G. Giacomello**, M. Jamshidi ()*
Environmental and mechanical performance of asphalt mixtures incorporating mixed plastic waste

**SESSION A03 / / 20th May 2026 16:45 -18:00**
**DECISION TOOLS IN CIRCULAR ECONOMY**
Chair / *Presidente*: TBD

***A. Arias**, E. Katsou (GB)*
Framework for sustainable biofuels: indicator development and pathway to digital toolkit and ecolabeling

***I. Marjanovi?**, J.J. Stankovi?, M. Stanojevi? (RS)*
Benchmarking circular economy progress in EU member states: composite index approach

***F. Cecchini**, V. Innocenzi, M. Pizzuti, K. Gallucci, A. Di Giuliano, M. Prisciandaro (IT)*
Integrated renewable methanol–high temperature fuel cell systems for circular carbon utilization: a multiscale modeling and sustainability perspective

***E. Korotenko**, H. Rechberger, J. Jadrný, O. Cencic, M. Šyc (CZ)*
Optimization of waste management technologies using statistical entropy approach: applicability to full-scale systems and enhancement of resource recovery

***D. Fosco**, M. De Molfetta, P.A. Renzulli, B. Notarnicola, D. Sica, S. Supino (IT)*
UAV methane MRV as a tool for circular economy management

**SESSION A04 / / 21st May 2026 09:30 -10:45**
**MATERIAL RECYCLING FROM WEEE**
Chair / *Presidente*: TBD

***L. Grima-Carmena**, S. Pocoví-Martínez, F. Bosch-Mossi, J. Navarro-Sánchez, J. Castellano-Espinosa, C. Silvestre-Ramos (ES)*
Electrochemical leaching of rare earth elements and iron from end-of-life permanent magnets using waste brines and valorization as inorganic pigments

***A. Polsinelli**, A. Di Crescenzo, M. De Marco, P. Ghorbanpour, P. Romano, F. Vegliò, N.M. Ippolito (IT)*
Optimized recycling approaches for silicon and silver in photovoltaic waste

***M. D'Arcangelo**, A. Becci, A. Amato, F. Beolchini (IT)*
Synergistic PCB-Black Mass processing: Fe-regenerated leaching for efficient metal extraction

***B. Boriani**, A. Becci, F. Beolchini, M. del Mar Cerrillo-Gonzalez, M. Villen-Guzman, A. Amato (IT)*
A low impact sequential electrodialysis strategy for critical metal recovery from end of life litium ion batteries

*S. Bastami, M.J. Lacadena, **P. Toniolo** ()*
Enhancing metal recovery from battery black mass using hydrogen peroxide-assisted leaching

**SESSION A05 / / 21st May 2026 11:15 -12:30**
**TREATMENT FOR TEXTILE WASTE RECYCLING**
Chair / *Presidente*: TBD

*E. Sykacek, F. Quartinello, C. Schimper,* ***A. Mautner*** *(AT)*
Influence of disruptors in the re-processing of mixed fiber textile wastes

***S. Rosenbusch****, A. Bartl (AT)*
Screening of green solvents for cotton recycling: decolorization and selective fiber isolation

***D.M. Dereje****, Z. Smania, S. Zanatta, M. Modesti, P. Ostellari, S. Gross, M. Carraro (IT)*
Sustainable valorization of textile waste via nanocellulose extraction using Deep Eutectic Solvents

***L. Van Belleghem****, V. Lemmens, S. Rosenbusch, M. Degelin, R. Dirix, N. Depope, N. Van Velthoven, A. Bartl, D. De Vos (BE)*
Selective depolymerization of elastane via secondary amines as an alternative to conventional dissolution systems: initial results

***N. Depope****, A. Bartl (AT)*
Impact of alkaline pretreatment on PET recovery and thermal stability in DES-Based recycling of textile blends

**SESSION A06 / / 21st May 2026 15:00 -16:15**
**ROLE OF CIRCULAR ECONOMY IN WASTEWATER TREATMENT**
Chair / *Presidente*: TBD

*M. Leone,* ***A. Zoccali****, M. Grana, S. Vito (IT)*
Closing the gap between emission inventories and real operation: full-scale greenhouse gas monitoring in wastewater treatment plants

*F. Cecchini, V. Innocenzi, M. Prisciandaro,* ***G. Mazziotti di Celso*** *(IT)*
Life Cycle Assessment of an industrial wastewater treatment plant: a comparison of environmental impact using fossil and renewable energy sources

***E. Lee****, K.J. Min, C. Park, K.Y. Park (KR)*
Carbon source-dependent aerobic granulation for anaerobic digested sidestream treatment

*M. De Sanctis, S. Murgolo, G. Mascolo,* ***C. Di Iaconi*** *(IT)*
An innovative plant for municipal wastewater recovery

***M. Dassatti****, V. Innocenzi, G. Mazziotti di Celso, T. Dragani, M. Prisciandaro (IT)*
Comparative Assessment of PFAS Removal Technologies: Membrane Processes versus Advanced Oxidation Processes for Sustainable Water Reuse

**SESSION A07 / / 21st May 2026 16:45 -18:00**
**RESOURCE RECOVERY AND ENVIRONMENTAL IMPACTS FROM ASHES**
Chair / *Presidente*: TBD

***X. Lin**, H. Li, D. Yue (CL)*
Thermodynamic simulation on behaviours of typical heavy metals during back-to-furnace process of MSWI fly ash

*D. Bonanno, **A. Luciano**, L. Gurreri, G. Benina, G. Mancini (IT)*
A potential pathway towards the use of Etna volcanic ash for biobased fertilizers

***E. Moslehi**, E. Larsson, G.A. Seisenbaeva, C. Tunsu (SE)*
Selective leaching and crystallization methods to produce potassium and phosphate fertilizers from poultry litter fly ash

**SESSION A08 / / 22nd May 2026 09:30 -10:45**
**MANAGEMENT OF DIFFERENT ORGANIC WASTE FRACTION**
Chair / *Presidente*: TBD

***H. Kumasaka*** *(JP)*
Overcoming institutional barriers to circular economy implementation: private-led Food Loss and Waste (FLW) reduction in Japan

*S.S.H. Dias,* ***A. Leal Vieira Cubas*** *(BR)*
Bioremediation applied to sewage sludge: technologies and challenges in the circular economy

***J.W.C. Wong****, D. Li (CN)*
A Low C/N Strategy for High-Throughput Food Waste Digestate Composting by Reducing Bulking Agent Demand

***K. Orupõld****, M. Kriipsalu, V. Kuusemets, H. Lepisk, T. Tamm, K. Lass, H. Raave, M. Shanskiy (EE)*
Sheep wool: from an economically marginal by-product to a functional soil amendment

***M. Grana****, M. Leone, A. Zoccali, L. Maestroni, E. Ficara (IT)*
Integrated biorefinery for resource recovery from wastewater sludge and municipal organic waste: an industrial application

**SESSION A09 / / 22nd May 2026 11:15 -12:30**
**ENERGY PRODUCTION FROM BIOMASS**
Chair / *Presidente*: TBD

***H. Gohar*** *(IT)*
Pyrolysis for energy & material recovery from biomass

***C.L. Verdezoto****, T. Ender, J. Sprafke, M. Nelles (DE)*
Valorisation of pig slurry solid fraction into bio-based materials

***F. Illuminati*** *(IT)*
Decentralised energy production from agriculture waste

*J.A. Gutierrez González, J.K. Chenwi Minang, M. Muñoz Morales, J. Llanos López,* ***J. Villaseñor Camacho*** *(ES)*
Towards improving biomethane production from solid biowaste by electrohydrolysis pretreatment

**SESSION A10 / / 22nd May 2026 15:00 -16:15**
**CONVERSION OF ORGANIC WASTE TO BIOCHAR**
Chair / *Presidente*: TBD

***S. Klempetsani**, M. Kyriazi, M. Avramidi, E.-A. Giouni (GR)*
Nutrient recovery from secondary biomass streams: pathways for converting organic residues into circular fertilizers

***D. Scrinzi**, D. Bona, R. Basso, M. Zorzi, G. Andreottola, L. Fiori, S. Silvestri (IT)*
Simulated scenarios of hydrothermal carbonization integrated in an industrial plant treating municipal organic waste

***M.A. Rafique**, A. Singh Sidhu, H. Gohar, G. Beggio, M.C. Lavagnolo, F. Faleschini (IT)*
Parameter optimisation for enhanced CO2 sequestration in biochar

***F. Khodaparastan**, C. Batty, C. Wilkinson, J. Bowen, A. Fraser-McDonald, C. Switzer, M.A.B Zanoni, L. Kinsman, T.L. Rashwan (GB)*
Volatile and semi-volatile organic compounds released during biomass valorisation in applied smouldering systems

**SESSION B01 / / 20th May 2026 11:30 -12:45**
**WASTE QUALITY AND COLLECTION**
Chair / *Presidente*: TBD

***Z. Stasiškiene**, E. Meiliene (LT)*
From fragmented local action to coordinated circular transition: Lithuania's Green Municipalities Innovation Center model

***K. Kawai** (JP)*
Separate collection of food waste and disposal quantities: evidence from Japanese municipalities

***P. Midula**, J. Hykš, O. Hjelmar, M. Šyc (CZ)*
The application of up-flow percolation tests in the environmental assessment of waste materials

*G. Bonifazi, G. Capobianco, R. Gasbarrone, **R. Palmieri**, S. Serranti (IT)*
Preliminary automated Vis–SWIR spectroscopy classification of earthquake-generated construction and demolition waste (C&DW) for European Waste Catalogue (EWC) code assignment and hazard discrimination

***J. Slavík**, K. Rybová, B. Bannertová (CZ)*
Littering, Clean Environment Index and their significance for modeling of cleaning costs - the case study of the Czech Republic

**SESSION B02 / / 20th May 2026 15:00 -16:15**
**ENERGY IN CIRCULAR ECONOMY**
Chair / *Presidente*: TBD

*L. Barnikel,* ***D.M. Yazan*** *(NL)*
From local energy transition to positive energy districts: a systemic roadmap for Aadorp/The Netherlands

***M. Nogueira****, J. Bastos, O. Moreira, P. Brito, R. Fragoso (PT)*
RE-FEED: Renewable Energy Production at Farm Level for Energy Efficiency and Defossilisation

*A.L. Fernando,* ***C. Rodrigues****, C. Dias, J. Costa, B. Barbosa, E. Alexopoulou (PT)*
Low indirect land use change (ILUC) industrial crops to bioenergy, biofuels and bioproducts in marginal soils: site-specific environmental potential and limitations of poplar to bioenergy and biochar

**SESSION B03 / / 20th May 2026 16:45 -18:00**
**ARTIFICIAL INTELLIGENCE IN CIRCULAR ECONOMY**
Chair / *Presidente*: TBD

***P. Hennebert**, H. Mamo, G. Beggio (FR)*
Artificial intelligence–assisted education and problem-solving for hazardous chemical waste management in East and Central Africa

***M. Abukmeil**, Y. Wu, F. Di Maio (NL)*
AI-driven multi-sensor material identification in construction and demolition using a robotic drilling platform

***H. Weber**, G. Koinig, J. Aberger, T. Fink, A. Tischberger-Aldrian (AT)*
Object-based sorting of post-consumer textiles at pilot scale using AI-supported models

**SESSION B04 / / 21st May 2026 09:30 -10:45**
**BIOPLASTICS**
Chair / *Presidente*: TBD

*G. Bonifazi, G. Capobianco,* ***P. Cucuzza****, S. Serranti (IT)*
Recycling-oriented identification of fossil-based plastics and bioplastics in packaging waste using hyperspectral imaging and hierarchical classification

***W. Peng****, Y. Xu, H. Zhang, F. Lü, P. He, X. Zhou (CN)*
Enhanced biodegradation of PBAT via enzymatic facilitation under simulated industrial composting

***C. Sica****, V.A. Palumbo, C. Copat, G. Oliveri Conti, M. Ferrante (IT)*
Microwave-assisted aqueous extraction of Poly(3-hydroxybutyrate) (PHB) from Spirulina platensis: characterization and preliminary biodegradation for sustainable packaging applications

**SESSION B05 / / 21st May 2026 11:15 -12:30**
**RESIDUES FROM CARS**
Chair / *Presidente*: TBD

***M. Ljunggren**, D. Das, S. Henriksson (SE)*
Circular management of critical raw materials in the European vehicle fleet

***A. Masiello**, A. Marotta, G. Costanzo, A. Spagnuolo, C. Vetromile, M.R. di Cicco, F. De Cristofaro, M.L. Sorrentino, C. Lubritto (IT)*
From recycled end-of-life tires to smart sensing flooring: an applied circular economy pathway for livestock housing

***C. Amon**, H. Morgan, X. Wang, I.D. Williams (GB)*
Preliminary results for the use of flow cytometry as a new technique to quantify tyre wear particles

*A. Benato, R. Bertani, M. Dabalà, **S. Gross**, M.C. Lavagnolo, A. Manzardo, M. Mozzon, F. Picano, P. Sgarbossa, A. Stoppato ()*
Car fluff valorisation through unconventional treatments

**SESSION B06 / / 21st May 2026 15:00 -16:15**
**INSECTS BIOREFINERY**
Chair / *Presidente*: TBD

***V. Grossule*** *(IT)*
Overview on recovery of resources from insects

***L.M.D.R.S. Martins****, A.P.C. Ribeiro, A. Figueiras (PT)*
Advancing the EU circular bioeconomy: valorization of black soldier fly biowaste into high-value cosmetic ingredients

***M. Henjak****, V. Grossule (IT)*
Treatment of fish farming wastewater using Black Soldier Fly larvae: treatability test and resource recovery assessment

***A.P.C. Ribeiro****, L.M.D.R.S. Martins, A.O. Figueiras (PT)*
Differences in solubility and crystallinity of chitosan extracted from seafood waste and black soldier fly larvae

**SESSION B07 / / 21st May 2026 16:45 -18:00**
**MICROALGAE AND PLANTS CULTIVATION & RESOURCE RECOVERY**
Chair / *Presidente*: TBD

***V.A. Riggio**, D. Alpe, M. Zanetti (IT)*
Planar led photobioreactors for microalgal cultivation and CO? biofixation: platform, scalability and a chlorella flour case study

***V.A. Palumbo**, C. Sica, C. Copat, G. Oliveri Conti, L. Falqui, M. Ferrante (IT)*
Sustainable extraction and valorization of carotenoids from Chlorella spp. through the exploitation of industrial waste streams for algal growth and bioactive compound production

*M. Dassatti, E. De Amicis, D. Marinidis, V. Innocenzi, B. Mattei,* ***M. Prisciandaro*** *(IT)*
Cavitation-assisted recovery of lipids from Chlorella vulgaris and Chlorella sorokiniana: a preliminary experimental evaluation

**SESSION B08 / / 22nd May 2026 09:30 -10:45**
**CRITICAL RAW MATERIALS**
Chair / *Presidente*: TBD

***M. Cera**, G.P. De Gaudenzi, A. Bjerke, G. De Gioannis, F. Asunis, A. Muntoni, A. Serpe (IT)*
pH-controlled selective leaching of Co and W from hardmetal waste using lactic acid

*I. Alessandri, P. Barra, E. Bontempi, M.F. Casula, D. Chiriu, S. Cocco, A. Cornelio, P. Cosseddu, G. De Gioannis, C. Di Santo, C. Doria, P. Franceschini, S. Javaid, M. Lovatti, A. Mascia, A. Muntoni, C. Olla, L. Pilia, V.M.I. Piro, P.C. Ricci, R. Ruggiero, G. Sarzana, M. Schirru, I. Vassalini, A. Zanoletti, **A. Serpe** (IT)*
SMaRT PCBs: Sustainable materials recycling technology for printed circuit boards

***A. Bonoli, F. La Marca** ()*
The technological supply chain of permanent magnets: critical issues and opportunities in the Italian context

*S. Cota, **L. Melandri**, P. Fleming Rubio, L. Itani, T. Tolio ()*
Advancing circularity of Rare Earth Elements and Permanent Magnets in Europe: the PERMANET approach

*A. Guerrer, M. Carraro, **S. Gross** ()*
Deep Eutectic Solvents (DES) for the sustainable recovery of Critical Raw Materials used in electrocatalysts synthesis

**SESSION B09 / / 22nd May 2026 11:15 -12:30**
**CIRCULAR ECONOMY CASE STUDIES FROM UNIVERSITIES**
Chair / *Presidente*: TBD

***R.C.C. Mesquita Micaroni**, C.S.G. Penteado, A.P. Bortoleto (BR)*
Waste prevention program at University of Campinas (UNICAMP)

***L. Adami**, L. Giacomini, A. Rosca, A. Draghici, E.C. Rada (IT)*
EU educational projects on plastic: the case of EDU4PlasticC

***A. Leal Vieira Cubas**, A. De Luca Sampaio Canto, A.R. Aguiar Dutra, A.P. Provin, J. Baltazar Salgueirinho Ozorio de Andrade Guerra (BR)*
Circular fashion in practice: sustainability education through denim upcycling in design programs

**SESSION B10 / / 22nd May 2026 15:00 -16:15**
**CIRCULAR STRATEGIES FOR WEEE**
Chair / *Presidente*: TBD

***S. García Galán**, F.J. Iglesias Godino, J. Contreras Ubric, F.A. Corpas Iglesias, J.E. Muñoz Expósito (ES)*
SICAPERMA: Building a Resilient European Value Chain for Nd-Fe-B Permanent Magnet Recycling

***B. Kopacek** (AT)*
Circular Economy Business Models – Key for Resilience and the "Clean Industrial Deal"?

***T. Naseri**, K. Kuchta (DE)*
From Scrap to Black Mass: Process Heterogeneity and Pretreatment Challenges Toward Direct Regeneration of LFP Batteries

**SESSION C01 / / 20th May 2026 11:30 -12:45**
**WORKSHOP - CRITICAL RAW MATERIALS IN ENERGY TRANSITION**
Chair / *Presidente*: Michal Šyc (CZ)

***M. Syc** (CZ)*
Critical Raw Materials recovery - Introduction

***R. Kumari**, M. Syc (CZ)*
Recycling of Supercapacitors: challenges and opportunities for urban mining

***L.C. Villa Vargas** (CZ)*
Recycling of nickel from solid oxide cells: efficiency in hydrometallurgical recycling processes

***A. Bulkin**, P. Kameníkova, M. Šyc (CZ)*
Recycling of lithium-ion batteries: influence of battery material composition and topology on efficiency of selected recycling processes

***M. Tammaro**, G. Fiorentino, A. Zucaro (IT)*
Circular economy as tools for the ecological transition: the case of critical raw materials and the contribution of ENEA

**SESSION C02 / / 20th May 2026 15:00 -16:15**
**CIRCULAR ECONOMY STRATEGIES IN DIFFERENT COUNTRIES OF THE WORLD**
Chair / *Presidente*: TBD

*C.C.C. Cheng,* ***B. Steuer*** *(HK)*
What circular economy policies drive waste reduction and recycling in East Asia? Comparing patterns in Japan, South Korea, Taiwan, Singapore and Hong Kong

***L. Casarano*** *(IT)*
Navigating precarity and potential: informal waste picking and the challenges of formalisation on Pemba island

***S. Jovanovic****, V. Jankovic-Milic, M. Džunic (RS)*
Resource efficiency and urban quality of life: a multidimensional sustainability assessment in Serbia

*A. Fileni,* ***M. La Monica****, L. Fraccascia, L. Cutaia (IT)*
Drafting a national-scale application for industrial symbiosis at Italian level: first results based on an input-output analysis

***V. Marttila****, W. Ruismäki, M. Räikkönen (FI)*
MFA-based economic value modelling for smartphone recycling in Finland

**SESSION C03 / / 20th May 2026 16:45 -18:00**
**CIRCULAR ECONOMY IN MANAGING INDUSTRIAL WASTE**
Chair / *Presidente*: TBD

***E. Pitacco****, K. Brunelli (IT)*
Unlocking the full recycling potential of hot rolling residues

***P. Janos****, J. Vlcek (CZ)*
Implementing Circular Economy in energy-intensive industry: where success is decided

***D.M. Yazan*** *(NL)*
From industrial symbiosis to hubs for circularity: systemic advancements, technology scale-up, and business insights from IS2H4C project

***M. Ghadimi Soyeni****, K. Brunelli, M. Brotto, M. Bellotto (IT)*
Optimization of Aluminothermic process for Ferrosilicon Production from White Ladle slag

***S. Salhofer****, G. Kain, F. Idam (AT)*
Reuse and repair in the construction sector – Is this a beneficial option? A box-type windows case study

**SESSION C04 / / 21st May 2026 09:30 -10:45**
**CIRCULAR ECONOMY IN CONSTRUCTION & DEMOLITION WASTE MANAGEMENT**
Chair / *Presidente*: TBD

***S. Pezzutto**, P. Thöni, G. Libardoni (IT)*
The PROSUST Project - Planning tool for sustainable construction in South Tyrol

***T. Iannuzzi**, F. Rossi, F. Corsini, M. Niero, M. Fundoni, A.C. Galvao, M. Frey (IT)*
Assessing Circular Business Models Configurations from the Buyer's Perspective: A Multi-criteria Analysis in the Construction Industry

*S. Malinconico, **F. Paglietti**, S. Bellagamba, E. Zucca, A. Aurigemma, G. Bonifazi, S. Serranti (IT)*
Asbestos in soil: safety procedures for sampling

***A. Piemonti**, G. Plizzari, S. Sorlini (IT)*
Can recovered inert materials from street sweeping waste be used for concrete production? State of the art and future perspectives

***J. Vizel**, K. Orion (EE)*
Influence of fine-fraction construction and demolition waste on the strength and moisture performance of concrete

**SESSION C05 / / 21st May 2026 11:15 -12:30**
**URBAN DRAINAGE IN CIRCULAR ECONOMY**
Chair / *Presidente*: TBD

*S. Raje,* ***J. Sansalone*** *(US)*
Recovery Tools for Particulate Matter in Traffic-Dominated Urban Microclimates Benefits Health, Ecology and Sustainability

***K. Houlihan****, H. Morgan, X. Wang, I.D. Williams (GB)*
Urban rivers under strain from wastes: a thematic synthesis on sources, stressors, and solutions

***J. Sansalone****, I. Gnecco, A. Palla (US)*
Granulometric distribution of metals on particulate residuals transported in urban drainage

***E. Pulvirenti****, L. Falqui, M. Ferrante, G. Oliveri Conti (IT)*
Innovative filter to reduce microplastic pollution and protect aquatic ecosystems and human health

**SESSION C06 / / 21st May 2026 15:00 -16:15**
**WORKSHOP - SUSTAINABLE AND CIRCULAR ARCHITECTURE**
Chair / *Presidente*: Marina Rigillo (IT)

*F. Paragliola, **M. Rigillo**, A. Cignarella, M.Segreto ()*
Innovation and research for sustainable and circular construction. Material–process–design

***S. Longo**, M. Mistretta, F. Nocera, M. Cellura, M. Derito, F. Guarino (IT)*
Life-cycle resource consumption of hydroponic green roof systems

***L. Amenta**, N. Fierro, P. De Martino (IT)*
Mapping the metabolism of city–port threshold areas: infrastructures, public spaces and circular strategies for wastescapes

**SESSION C07 / / 21st May 2026 16:45 -18:00**
**WORKSHOP - ACTIVATION OF IRACE FOCUS GROUPS**
Chair / *Presidente*: Raffaello Cossu (IT), Luísa Martins (PT)

Further details available soon.

**SESSION C08 / / 22nd May 2026 09:30 -10:45**
**WORKSHOP - CLOSING THE LOOP FOR TEXTILES?**
Chair / *Presidente*: Andreas Bartl (AT)

Textile waste is growing rapidly worldwide, yet true fiber-to-fiber recycling remains rare. At the same time, regulatory developments in Europe and other regions increasingly require separate collection of textiles and the development of circular material systems. Complex blends, disruptive materials such as elastane, and insufficient sorting technologies continue to prevent large-scale circularity. The rapid growth of fast fashion and the increasing complexity of textile products make recycling particularly challenging. As a result, large volumes of textiles are still recycled into low-value (open-loop) applications, incinerated, or exported, rather than being recovered in closed-loop systems and reintroduced into new textile production. Short introductory presentations will highlight key bottlenecks along the textile urban mining chain, including consumer dynamics, advanced sorting technologies, and emerging separation strategies for blended fabrics. The session is designed as a discussion-oriented workshop to identify the most critical technological and systemic barriers and discuss whether current recycling approaches are sufficient to enable truly circular textile systems.

**Introductory lectures:**

- ***G. De Feo****, M. Napoli, R. Gargano, U. Vietri, D.R. Cirasuolo (IT)*
  Fast fashion and textile waste: education as a strategic lever for textile urban mining and circular consumption transition

- ***H. Weber*** *(AT)*
  NIR-based sorting technologies for post-consumer textile waste

- ***L. Van Belleghem*** *(BE)*
  Selective removal of elastane from blended textiles to enable recycling

- ***A. Mautner*** *(AT)*
  Disruptors in textile recycling: challenges in processing mixed fiber waste streams

- ***S. Rosenbusch*** *(AT)*
  Solvent-based pretreatment strategies for cotton-rich textile waste

Moderated round-table discussion with the participants. The discussion will focus on the following guiding questions:

- Can we realistically close the loop for textiles?
- Which technological bottlenecks and system barriers currently prevent large-scale fiber-to-fiber recycling?
- Is closed-loop recycling the only viable pathway, or can open-loop systems play a meaningful role in textile circularity?
- Are current sorting and recycling technologies sufficient, or are more fundamental changes in textile design, consumption patterns and waste management systems required?

**SESSION C09 / / 22nd May 2026 11:15 -12:30**
**WORKSHOP - CRUCIAL ISSUES IN CRITICAL RAW MATERIALS MANAGEMENT**
Chair / *Presidente*: Angela Serpe, Maria Cristina Lavagnolo (IT)

Critical Raw Materials (CRMs) are at the core of the green and digital transitions, yet their supply raises complex environmental, political, and social challenges. Extraction from primary resources is often associated with significant environmental impacts, intensive energy and water consumption, as well as risks to ecosystems and local communities. At the same time, the geographical concentration of resources and supply chains creates geopolitical vulnerabilities and strategic dependencies. In this context, the use of secondary resources—through recycling and recovery from end-of-life products—represents a key strategy to mitigate these issues, although it also entails technological, economic, and regulatory challenges. This contribution analyzes the interconnections between environmental sustainability, supply security, and social responsibility, highlighting the crucial role of the circular economy and innovation in recovery processes to build more resilient, ethical, and sustainable value chains.

Further details available soon.

**SESSION C10 / / 22nd May 2026 15:00 -16:15**
**MICROPLASTICS CONTAMINATION AND REMOVAL**
Chair / *Presidente*: TBD

*C.A. Cossu, V. Poli, L. Litti,* ***M.C. Lavagnolo*** *(IT)*
Microplastics as a global threat in water, ocean and land

*D. Santoro, K. Nasr Esfahani, S. Mancini,* ***O. Santoro****, T. Masi, C. Pablos, M.D. Molina, J. Marugán, S.F. Camelo, M.I. Leão Silva, C. Manaia, O. Nunes, M. Lois, J.L. Romalde, A. Cobelo, E. Abollo, S. Pascual, M. López, R. Ríos, G.P. Di Sansebastiano, F. Ugolini (IT)*
Bioreactive storage for reclaimed wastewater: an integrated barrier against micropollutants, viruses, antibiotic resistance and microplastics

***S. Kanwal****, V. Poli, L. Litti, M.C. Lavagnolo (IT)*
Assessing microplastics release in supply water

**SESSION D01 / / 20th May 2026 11:30 -12:45**
**WORKSHOP - ADVANCING THE FUTURE OF STEEL SLAG IN CONSTRUCTION**
Chair / *Presidente*: Antonio Conforti (IT)

The workshop aims at presenting the state of the research regarding the PRIN research project "STEELCRETE", funded by the Ministry of the University and Research, Italy (MUR), on the application of steelmaking slags in concrete for structural applications.

**Introductory Lectures:**

***A. Conforti*** *(IT)*
Introduction - Steel production in Italy via Electric Arc Furnace (EAF): main by-products and waste streams

***A. Conforti*** *(IT)*
Overview of the STEELCRETE Project: objectives and research framework

***F. Lollini*** *(IT)*
Mix design strategies and durability performance of concretes with EAF slag

***F. Faleschini*** *(IT)*
Structural applications of EAF slag in concrete

***A. Abbà*** *(IT)*
Environmental aspects related to the use of EAF slag

**SESSION D02 / / 20th May 2026 15:00 -16:15**
**WORKSHOP - CO2 HYDRATES FOR CARBON CAPTURE, UTILIZATION AND STORAGE**
Chair / *Presidente*: Ana Paula Ribeiro (PT), Karey Maynor (US)

This workshop will focus on the emerging role of carbon dioxide hydrates as a tool for carbon management within Carbon Capture, Utilisation and Storage (CCUS) strategies and circular economy frameworks. CO2 hydrates offer unique opportunities for dense, reversible CO2 storage, separation, and transport, as well as for integration with energy and resource management systems. Their potential relevance spans industrial CO2 capture, offshore and subsea storage, gas separation, and coupling with renewable energy and water systems. Through a series of concise introductory presentations, the workshop will provide an overview of the fundamental principles of CO2 hydrate formation, stability, and kinetics, followed by discussion of recent technological developments and system-level concepts. Particular emphasis will be placed on utilisation-oriented perspectives, including hydrate-based CO2 capture and separation, temporary storage and transport, and hybrid approaches linking hydrates with mineralisation, conversion processes, or energy storage.
The session will actively engage participants in structured discussions to identify key scientific, technical, and economic challenges that currently limit large-scale deployment of hydrate-based solutions. By bringing together researchers and practitioners from chemistry, materials science, process engineering, and environmental systems, the workshop aims to clarify the realistic role of CO2 hydrates in future carbon management strategies and to define priority directions for research, development, and demonstration.

**SESSION D03 / / 20th May 2026 16:45 -18:00**
**WORKSHOP - MULTIDISCIPLINARY ISSUES WITH PFAS IN CIRCULAR ECONOMY**
Chair / *Presidente*: Tarek Rashwan, F. Khodaparastan (UK), M. Johansson (SE)

Per- and polyfluoroalkyl substances (PFAS) have been central compounds used in a range of modern materials – everything from fire-fighting foams to cosmetics. There are thousands of synthetic compounds within the PFAS classification. It is now widely understood that PFAS contamination poses severe environmental risks. Due to PFAS' toxic and persistent properties, small concentrations can bioaccumulate in the food chain, affecting human and environmental health. Activated carbon or ion exchange resin have been used to remove PFAS from drinking water. Anesthetic gases such as isoflurane, desflurane, and sevoflurane have been widely used in medical applications; these gases are trapped in activated carbon after use for disposal. Other PFAS-contaminated materials necessitate active treatment, e.g., municipal solid waste, sewage sludge, and hazardous waste.
PFAS represents a complicated threat to a circular economy, as wide variety of compounds must be removed to extremely low concentrations to support safe, circular processes. This need has led to a flurry of technological and regulation developments across EU countries further abroad. However, it is challenging to develop appropriate technologies and regulations to appropriately manage these risks within wastes given the diversity of PFAS chemicals, with >10 000 unique compounds, and their resistance to traditional treatments, due to the strong C-F bonds in the compounds. Legal frameworks governing contamination liability create complex incentive structures that can influence remediation decisions. Understanding these dynamics is essential to identifying pathways for integrating PFAS management within circular economy approaches. This workshop will overview technical and regulatory hurdles in responding to the threats posed by PFAS in a circular economy and then open for discussion among participants. The intention of this workshop is to share knowledge among participants to better understand the multidisciplinary challenges associated with PFAS in a circular economy – and discuss collaborative opportunities to address these challenges.

**SESSION D04 / / 21st May 2026 09:30 -10:45**
**WORKSHOP - LEGAL ISSUES IN CIRCULAR ECONOMY & IN END-OF-WASTE PROCEDURES**
Chair / *Presidente*: Maria Pettersson, Oskar Johansson (SE)

This workshop explores the legal and regulatory challenges shaping the transition to a circular economy, focusing on waste legislation, environmental liability, transboundary waste shipments, eco-design standards, and compliance with EU directives. It will address how legal frameworks influence resource ownership, permitting/licensing for waste-related activities, and the classification, handling, and reuse of waste materials. Special attention will be given to Member State (MS) compliance with EU legislation and the role of international agreements in harmonizing standards.

**Introductory Lectures:**

***C. Dalhammar*** *(SE)*
EU Circular Economy Legislation: Scope and Challenges - Focus on product responsibility

***O. Johansson*** *(SE)*
Waste or Resource – The Function of Waste Law in a Circular Economy

***M. Pettersson*** *(SE)*
Mining Waste Recycling - The Critical Raw Materials Paradox

***P. Hennebert****, E. Dereviankine (FR)*
Two propositions for EU-wide by-product and End-of-Waste procedures reforming the WFD: self-assessment and science-based tripartite approach

**SESSION D05 / / 21st May 2026 11:15 -12:30**
**WORKSHOP - CIRCULAR BIOECONOMY & INSECT-BASED SOLUTIONS FOR ENVIRONMENTAL SUSTAINABILITY**
Chair / *Presidente*: Ana Paula Ribeiro, Luísa Martins (PT)

This workshop will explore innovative strategies for advancing environmental sustainability through circular economy approaches, with a focus on insect-based biorefineries and waste valorisation. Inspired by the INSECTERA research project, the session will examine how insect biomass—particularly Black Soldier Fly by-products—can be transformed into valuable raw materials such as chitin and chitosan, contributing to sustainable materials and health-related applications.
Participants will gain insights into the scientific, technological, and societal dimensions of circular bioeconomy models, including sustainable chemistry, resource recovery, and industrial symbiosis. The workshop aims at encouraging interdisciplinary dialogue between researchers, industry stakeholders, and policymakers interested in sustainable innovation, waste reduction, and green transition pathways.

**Introductory Lectures:**

***L. Martins*** *(PT)*
INSECTERA Project Overview: Circular Economy Approaches to Insect-Based Biorefineries

***A.P.C. Ribeiro*** *(PT)*
From Insect Waste to High-Value Biomaterials: Chitin and Chitosan Applications

**SESSION D06 / / 21st May 2026 15:00 -16:15**
**WORKSHOP - LANDFILL MINING FOR RECOVERING MATERIAL AND ENERGY RESOURCES**
Chair / *Presidente*: Raffaello Cossu (IT)

Further details available soon.

**SESSION D07 / / 21st May 2026 16:45 -18:00**
**WORKSHOP - CIRCULARITY IN HEALTH CARE WASTE MANAGEMENT**
Chair / *Presidente*: TBD

***L. Demarré**, K. Vanderwee, E. Kieckens, V. Duprez, S. Malfait, N. Fraeyman (BE)*
Towards circular healthcare: implementing reusable materials with a focus on sustainability, cost, and logistics

***F. Tommasi** (IT)*
Sustainability and circularity of processes for climate-resilient healthcare services

**SESSION D08 / / 22nd May 2026 09:30 -10:45**
**WORKSHOP - STRATEGIES FOR SUSTAINABILITY EDUCATION IN MASTER'S PROGRAMS**
Chair / *Presidente*: Enrico Boccaleri (IT)

This workshop aims at clubbing the collective expertise of participants to develop a framework for an International Interdisciplinary Master course in Sustainability. The proposed approach is to use the SISTEM (Strategie Integrate per la Sostenibilità e la Transizione Ecologica) Master course, given by the Università del Piemonte Orientale with an innovative digital-based teaching model as a case study and baseline. SISTEM in fact, in the second edition currently ongoing, is a pilot project within the EDUNEXT digital ecosystem, designed to train experts with a time-effective approach. The scope of the workshop is to analyze how to widen this multidisciplinary approach to a global level, addressing macroeconomic challenges and global policies such as the European Green Deal and the UN Sustainable Development Goals (SDGs). Participants will discuss how to integrate diverse fields of knowledge and expertise—from ecology and chemistry to economics and law —into a cohesive international teaching framwork able to overcome the differences in language and to take profit of specific competencies internationally distributed.

**Workshop Agenda:**

- **Introduction:** Presentation of the EDUNEXT project and the SISTEM Master model and teaching programme.

- **Case Study Analysis:** *The 4 Educational Clusters of SISTEM.*
  Analysis of the integrated approach covering Earth Resources, Human Impact (Energy/Waste), Sustainability Strategies (Circular Economy, Supply Chain), and Legal/Soft Skills.

- **Interactive Session:** *Co-designing the International Curriculum.*
  Participants will be divided into working groups to brainstorm an international syllabus that integrates key international partners into the SISTEM framework, designing specific profiles and enlarging the topics:
  - *Topic A:* Integrating Policy & Environmental Law with Society
  - *Topic B:* Circular Economy & Urban Mining (Technical & Economic aspects)
  - *Topic C:* Digital delivery & Results assessment (The EDUNEXT model)
  - *Topic D: ...*

- **Conclusion & Roadmap:** *Defining a Memorandum of Understanding to promote the participation of Universities to an international edition of the Master.*
  Definition of the steps for an academic assessment of the course.

**SESSION D09 / / 22nd May 2026 11:15 -12:30**
**WORKSHOP - SUSTAINABLE AND CIRCULAR WM IN DEVELOPING COUNTRIES & EMERGING ECONOMIES**
Chair / *Presidente*: Roland Ramush (AT)

The workshop draws on the professional experience of organisers and participants to examine how solid waste management systems in low?income and emerging economies can be effectively developed, scaled and financed. By synthesising practical insights from different contexts, it aims to distil empirical evidence on the constraints and enabling conditions that underpin successful, system?level transitions towards sustainable waste management.
Building on this framework, the workshop is structured around three interlinked sections. First, the workshop analyses case studies of projects seeking to establish sustainable waste management systems in different country contexts, focusing on stakeholder involvement, institutional roles, and the extent to which capacity?building goals were met in practice.
Second, the workshop examines the financing of sustainable waste management infrastructure, with a particular emphasis on the role of International Financial Institutions (IFIs) and development finance. The discussion considers how IFIs assess, structure, and sequence investments in municipal solid waste management across varying levels of system maturity and country contexts. Drawing on real project experience, contributions will explore how operations and environmental performance can be improved while maintaining affordability, institutional feasibility, and public acceptance. Topics include project readiness, sequencing, alignment with EU waste legislation and climate objectives, the selection and timing of specific technologies as well as the alignment of financial investments with local institutional and organisational capacity.
Third, the workshop synthesizes the insights from the previous sections to reflect on whether system change in low?income and emerging economies is primarily driven by technological interventions or behavioral and organisational transformation, or the alignment of multiple system components.
Designed as an interactive exchange between researchers, practitioners, financiers, consultants and municipalities, the workshop encourages participants to reflect on why well?intended investments often fall short when confronted with socio?economic, cultural, and environmental complexities, and what this implies for the design of coherent, context?appropriate, and sustainable future waste management interventions.

**Introductory Lectures:**

***R. Ramusch**, S. Salhofer, B. Steuer ()*
Developing & financing solid waste management capacities in low-income and emerging economies: successes and pitfalls

***C. Schenck ()***
Making the invisible, visible: backyard dwellers and waste governance in South Africa

**SESSION D10 / / 22nd May 2026 15:00 -16:15**
**WORKSHOP - ROLE OF ENERGY IN THE CIRCULAR ECONOMY**
Chair / *Presidente*: Andrea Fantappiè (IT)

Further details available soon.

**SESSION E05 / / 21st May 2026 11:15 -12:30**
**WORKSHOP - INFRASTRUTTURE URBANE IN TERRITORI CIRCOLARI**
Chair / *Presidente*: Anna Attademo, Federica Paragliola, Sara Piccirillo, Marina Rigillo (IT)

***Italian Session*** - La necessità di ideare e proporre iniziative incentrate sull'economia circolare ha ormai acquisito un ruolo centrale nelle politiche dell'Unione Europea. In Italia, il Piano Nazionale di Ripresa e Resilienza (PNRR 2021-206, MISSIONE 2), nel recepire le strategie per la transizione ecologica e digitale (COM/2019/640 final; COM(2020) 98 final), incentiva la sperimentazione di processi socialmente condivisi per l'economia circolare e la mitigazione climatica nelle aree urbane. Si definisce, così, un contesto di finanziamento della ricerca molto favorevole, che offre margini di azione per nuovi approcci al progetto dello spazio pubblico con un focus sull'innovazione sociale intesa come convergenza di saperi, capacità del fare, consapevolezza di ruoli e responsabilità istituzionali.
Muovendo da tali premesse, la seconda edizione del workshop ha l'obiettivo di finalizzare la discussione sulla possibilità di prototipare processi decisionali finalizzati a realizzare in modo proattivo le condizioni di governance necessarie per favorire la creazione di filiere circolari alla scala locale, generando di opportunità di sviluppo economico e l'implementazione di politiche innovative di welfare. In particolare, si vuole utilizzare il contesto scientifico e culturale del SUM 2026 per portare l'attenzione verso esperienze di co-progettazione funzionali ad implementare una infrastruttura urbana dedicata al riuso e all'upcycling di prodotti scartati ma ancora, tecnicamente, considerati rifiuto
Il workshop prende avvio dalle ricerche condotte presso il DiARC inerenti la progettazione di un'attrezzatura urbana per la circolarità che risponda ai presupposti di sostenibilità dell'abitare e alle esigenze di servizi e spazi pubblici per la città; un'attrezzatura denominata Circular Urban Hub dedicata ospitare attività di ri-distribuzione, riparazione, rivendita, riuso e upcycling di prodotti volte ad estendere la vita utile di oggetti. Il sistema degli Hub è concepito come una rete di spazi di quartiere in cui convivono attività per l'incontro, l'educazione sociale e il tempo libero, ed attività commerciali destinate alla micro e piccola impresa e finalizzate alla riparazione, redistribuzione, riuso e re-design di particolari tipologie di prodotti (segnatamente quelli del tessile, dell'arredo e del RAE), in accordo con la Direttiva Rifiuti (UE) 2018/851 e con la Direttiva (UE) 2024/1799 che sancisce il diritto alla riparazione dei beni di consumo. L'idea è quella di supportare attivamente la cultura della transizione ecologica e digitale, associando l'attività di raccolta e gestione di prodotti scartati con pratiche socialmente condivise e accettate, diffuse in modo capillare sul territorio e al contatto diretto con i cittadini: «[…] the future is not […] infrastructure and software as a service, but […] a lot of loosely connected mini-services [that] can be easily assembled like Lego blocks and on top of which you can build agile and resilient applications» (https://pierrelevyblog.com, accessed August 21, 2018).
In termini di governance, si tratta di intervenire attraverso l'attivazione di pratiche circolari che intercettano comportamenti quotidiani, facilitando la creazione di diverse condizioni di mercato e di posti di lavoro, ma anche indirizzando la comunità verso azioni di autogestione e di sussidiarietà i cui vantaggi possano essere immediatamente percepiti. Tali interventi operano sia il piano dei flussi materiali che quello delle relazioni sociali, lavorando su una dimensione di scala che, grazie all'uso della rete e delle tecnologie abilitanti, intercetta parimenti la dimensione di vicinato, quella urbana e regionale.

*A. Attademo, F. Paragliola, S. Piccirillo, M. Rigillo ()*
Infrastrutture urbane emergenti per territori circolari e resilienti. II edizione

**SESSION E06 / / 21st May 2026 15:00 -16:15**
**WORKSHOP - RUS: RUOLO DEGLI STUDENTI PER L'ECONOMIA CIRCOLARE NELLE UNIVERSITà - PARTE 1**
Chair / *Presidente*: Eleonora Perotto, Maria Cristina Lavagnolo (IT)

***Italian Session***.

- ***Maria Cristina Lavagnolo*** *– Università degli Studi di Padova*
  Apertura lavori e moderazione

- ***Eleonora Perotto*** *– Politecnico di Milano*
  Gli esiti principali dell'indagine GdL R&R sul coinvolgimento degli studenti nelle politiche universitarie di gestione e prevenzione rifiuti

- ***Maria Concetta Dragonetto*** *– CONAI, e* ***Pasquale Lepore*** *– Officine Sostenibili*
  Le linee guida RUS-CONAI: un primo bilancio e le possibili prospettive future

- ***Elena Semenzin*** *– Università Cà Foscari Venezia, e* ***Chiara Genta*** *– Politecnico di Torino*
  Le attività del TT Comunità studentesca in ambito prevenzione e gestione rifiuti

- *Coordinano gli interventi degli studenti delle università RUS:* ***Nastasija Koprivica*** *– Università Ca Foscari Venezia, e* ***Zeno Dal Piaz*** *– Università Bicocca*
  Lightning Talks: "Il ruolo degli studenti nelle policy universitarie di prevenzione e gestione rifiuti"

***Il workshop continua nella sessione successiva.***

**SESSION E07 / / 21st May 2026 16:45 -18:00**
**WORKSHOP - RUS: RUOLO DEGLI STUDENTI PER L'ECONOMIA CIRCOLARE NELLE UNIVERSITà - PARTE 2**
Chair / *Presidente*: Eleonora Perotto (IT)

***Italian Session.***

***Continua dalla sessione precedente.***

Discussione
*Modera* ***Giovanni De Feo*** *– Università degli Studi di Salerno*

Interventi programmati:

- ***Franco De Martino*** *– Università degli Studi di Salerno*
  Il ruolo degli studenti nel progetto CONAI-UNISA

- ***Giulia Romano*** *– Università degli Studi di Pisa*
  Il ruolo degli studenti nel progetto CONAI-UNIPI

- ***Marta Giurato*** *– CONAI*
  Le proposte di CONAI per ampliare la collaborazione con la comunità studentesca alla luce delle recenti esperienze in ambito universitario

Interventi a cura del pubblico

Conclusioni
*Eleonora Perotto – Politecnico di Milano*

**SESSION E08 / / 22nd May 2026 09:30 -10:45**
**WORKSHOP - RUOLO DEL DEPOSITO SUL TERRENO DEI RESIDUI DELL'ECONOMIA CIRCOLARE**
Chair / *Presidente*: Raffaello Cossu (IT)

***Italian Session*** - Further details available soon.

**SESSION PP / / 20th May 2026 09:30 -18:00**
**POSTER SESSION**
Chair / *Presidente*: None

Poster presentations will be accessible in a dedicated area throughout all 3 days of the conference.

***R. Ozola-Davidane**, A. Salmina, S. Ozolina-Grinevica (LV)*
Upcycling polyphenol-rich food industry by-products into high-value cosmetic and biomedical materials

***T. Bansal** (HK)*
Smart and integrated B2B based solar circularity platform

*M.G. Macavei, C. Marculescu, **R. Patrascu**, A. Magdziarz (RO)*
Analysis for valorization pathways of animal bone waste

***V.-C. Gheorghe**, G. Petcu, C. Marculescu, A. Magdziarz (RO)*
Study on the potential of chicken bones biochar to produce sustainable and high-value materials

***A. Estokova**, M. Cambal Holosova, M. Fabianova, M. Jas (SK)*
LCA analysis of the cement composites with recycled materials

***D. Sica**, F. Smaldone, S. Supino, B. Esposito (IT)*
Bridging climate change and circular economy: employability skills profiling in the agrifood sector

*R. Ozola-Davidane, **J. Karasa**, S. Ozolina-Grinevica, J. Kostjukovs (LV)*
Secondary phosphorus mining from wastewater using natural mineral sorbents

***J. Havranová**, S. Cernanský (SK)*
Microbial volatilization of arsenic and antimony during bioleaching of mining waste

*J. Havranová, **S. Cernanský** (SK)*
Influence of microscopic filamentous fungi on soil reaction during bioleaching of mining waste rich in Arsenic and Antimony

***P. Basinas**, M. Luxová, K. Chamrádová (CZ)*
Characterization and degradation behaviour of commercial bioplastic shopper bags in long term anaerobic digestion assays

***M.L. Tello Martín**, S. Hilali, E. Stierlin, H. Baarset, M. Pérez (ES)*
Dried salmon sludge as a soybean meal substitute in king oyster mushroom cultivation: yield performance and nutritional value of Pleurotus eryngii within the SAFE Horizon Europe project

*V. Piergrossi, A. Zucaro, M. Pietrantonio, G. Fiorentino, S. Pucciarmati, L. Cafiero, **M. Tammaro** (IT)*
Experimental recycling processes to recover materials from photovoltaic panels

***M. Dassatti**, M. Prisciandaro, V. Innocenzi (IT)*
Experimental Studies on Sustainable Treatment of Textile Wastewater through Hydrodynamic Cavitation Technology and Hybrid Solutions: a Review

***T. Marinkovic**, I. Berezni, N. Tosic, M. Muhadinovic, N. Stanisavljevic, B. Batinic (RS)*
Systematic approach to collection schemes of electric and electronic waste: case study of Novi Sad

***I. Berezni**, T. Marinkovic, A. Kokanovic, M. Muhadinovic, N. Stanisavljevic, B. Batinic (RS)*

Household awareness and participation in e-waste management in Novi Sad, Serbia

***C. Rodrigues****, V.G.L. Souza, B. Sayin, I. Coelhoso, A.L. Fernando (PT)*
Valorization of opuntia ficus-indica cladodes: from agricultural residue to sustainable food packaging

***A. Altaee****, R. Almalki, L. Alsaka, S. Javaid Zaidi ()*
Feasibility of applying double crosslinked carrageenan adsorbent hydrogel in the electrokinetic process

***Y. Shao****, Y. Yuan (CN)*
A comparison of hydrochar and hydrothermal humic acid from simulated garden waste for soil improvement