

SYMPOSIUM GUIDEBOOK
GUIDA DEL SIMPOSIO

We wish to express our sincere gratitude to the Municipality of Procida, and in particular to Mayor Raimondo Ambrosino and his outstanding team – Giuditta Lubrano Lavadera, Deputy Mayor; Leonardo Costagliola, Councillor for Tourism; and Salvatore Scotto di Rinaldi – for the warm welcome, the continued enthusiasm in supporting our Symposium, and their invaluable assistance in its organization in this remarkable island.

Desideriamo esprimere la nostra più sincera gratitudine al Comune di Procida e, in particolare, al Sindaco Raimondo Ambrosino e alla sua straordinaria squadra – Giuditta Lubrano Lavadera, Vicesindaco; Leonardo Costagliola, Assessore al Turismo; e Salvatore Scotto di Rinaldi – per il caloroso benvenuto, per l'entusiasmo con cui continuano a sostenere il nostro Simposio e per il prezioso supporto nell'organizzazione del SUM in questa straordinaria isola.

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MINISTERO DELL'AMBIENTE
E DELLA SICUREZZA ENERGETICA



Comune
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SUM2026

9TH MULTIDISCIPLINARY SYMPOSIUM ON CIRCULAR ECONOMY
AND URBAN MINING / 20-22 MAY 2026 / PROCIDA, NAPLES, ITALY

Organised by / Organizzato da:



With the scientific involvement of / Con il coinvolgimento di:

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BOKU University, AT • Estonian University of Life Sciences, EE •
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EPHA • European Public Health Alliance
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FEAD • European Waste Management Association
GWCN • Global Waste Cleaning Network
JSMCWM • Japan Society of Material Cycles and Waste Management
CEWMS • Circular Economy, Waste, Materials and Sustainability
GITISA • Italian Group of Environmental and Sanitary Engineering
AIAT • Italian Association of Environmental and Planning Engineers
AICA • International Association for Environmental Communication
UNIRIMA • Italian National Union of Recovery & Recycling Paper Companies

WELCOME LETTER

LETTERA DI BENVENUTO

Dear Delegate,

following the success of the 8th edition held in 2025, we are excited to welcome you again in Procida at SUM 2026, 9th Multidisciplinary Symposium on Circular Economy and Urban Mining.

Please find here below some key info about the conference and the exciting social events that will take place during the Symposium.

Free shuttle service

To ensure maximum accessibility to the symposium venue, the organisers have arranged a free shuttle service departing from Piazza dei Martiri, available on Wednesday 20 / Thursday 21 / Friday 22. Timetable: see page 20.

SOCIAL EVENTS

Wednesday 20 May - Welcome aperitif dinner & Karaoke evening (page 34)

from 18:45 to midnight - Santa Margherita Monastery, Terrace

Join us for a welcome apericena on a breathtaking seaside terrace, with a lively and engaging Karaoke night - an informal and spirited opportunity to connect, unwind, and, for those who wish, take the stage and join the fun. The perfect way to kick off the conference!

Free event for symposium delegates. Accompanying persons who wish to participate should purchase the ticket (35 € + VAT 22%) at the registration desk. In order to take part in the event, reservation is requested. Please book your place upon your arrival.

Tuesday 21 May - Under the Stars of Corricella: Dinner & Music Night (page 48)

20:00 - La Locanda del Postino + Blu Lounge Bar

We invite you to enjoy an authentic experience in the charming Marina Corricella, the most characteristic village of Procida. Among colorful houses overlooking the sea and timeless alleyways, you will savor a dinner of fresh seafood in a warm and convivial atmosphere. The evening will continue at Blu, an elegant lounge bar, with a DJ set and entertainment.

Seats are limited! In order to take part in the dinner, reservation is mandatory. Please book your place upon your arrival. The cost is € 60 + VAT 22% per person

Wednesday 22 May - Final Procida Dinner with Live Music (page 60)

Meeting point: from 19:45 - Piazza dei Martiri - round-trip taxi service included
20:30 - La Pergola Restaurant

Enjoy the traditional closing dinner beneath an authentic Procida lemon grove and Dancing party with live music!

50% of the price is included in the Symposium entrance fee. The remaining 50% will be paid by each delegate and amounts to € 45 + VAT 22%. Accompanying persons should purchase the full ticket (€ 90 + VAT 22%).

Reservation is mandatory. Please book your place at the registration desk.

We hope you enjoy the Symposium!
The Organising Secretariat

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PRESENTATION

PRESENTAZIONE

We are pleased to gather once again, after one year, for SUM 2026 – the 9th Multidisciplinary Symposium on Circular Economy and Urban Mining.

Following the outstanding success of the 2025 edition – the year in which the Symposium became an annual event – SUM has further consolidated its position as a leading conference in the field of circular economy. This growth is reflected in the **increasing number of scientific contributions** and in the expansion of the programme, with parallel oral session tracks increasing from three to four, alongside an additional session held in Italian.

Organised once again in this unique and inspiring setting, SUM 2026 will bring together leading international experts, researchers, practitioners, and policy-makers from diverse disciplinary backgrounds to explore the latest advancements and key challenges in circular economy, sustainable resource management, and urban mining.

The previous edition, held in Procida in 2025, was a remarkable success, attracting participants from 26 countries and a wide range of disciplines. Building on this momentum, SUM has established itself as a truly multidisciplinary annual event, acknowledging both the increasing complexity of circular economy issues and the urgent need for integrated, cross-sectoral solutions.

SUM 2026 is scientifically organised by **IRACE - International Research Association on Circular Economy**, and benefits from the contribution of a multidisciplinary Executive Committee composed of scholars from several prestigious universities worldwide.

The Symposium fosters open dialogue and collaboration among experts in Engineering, Economics, Law, Environmental Sciences, Medicine, Psychology, Sociology, and many other fields, promoting a science-based approach that effectively connects research, policy, and practice.

SUM 2026 is held under the patronage of the Italian Ministry of the Environment and Energy Security, the Campania Region, the Municipality of Procida, ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, and ISPRA - the Italian Institute for Environmental Protection and Research. The Symposium is also held under the aegis of Tavolo di Roma.

Siamo lieti di ritrovarci, a distanza di un anno, per il SUM 2026 - 9° Simposio Multidisciplinare su Circular Economy e Urban Mining.

*A seguito dello straordinario successo dell'edizione 2025, anno in cui il Simposio è diventato un appuntamento annuale, il SUM ha ulteriormente consolidato la propria posizione come conferenza di riferimento nel settore dell'economia circolare. Tale crescita si riflette nell'**aumento dei contributi scientifici** e nell'**ampliamento del programma**, con le sessioni parallele di presentazioni orali passate da tre a quattro, oltre a una sessione aggiuntiva in lingua italiana.*

Organizzato ancora una volta in questa cornice unica e suggestiva, SUM 2026

riunisce esperti, ricercatori, professionisti e decisori politici di rilievo internazionale, provenienti da diversi ambiti disciplinari, per esplorare i più recenti sviluppi e le principali sfide nell'ambito dell'economia circolare, della gestione sostenibile delle risorse e dell'urban mining.

L'edizione precedente, tenutasi a Procida nel 2025, ha registrato un grande successo, attirando partecipanti da 26 Paesi e da una vasta gamma di discipline. Sulla base di questo slancio, SUM si è affermato come un evento annuale autenticamente multidisciplinare, riconoscendo la crescente complessità delle tematiche legate all'economia circolare e l'urgenza di soluzioni integrate e trasversali.

*SUM 2026 è organizzato scientificamente da **IRACE – International Research Association on Circular Economy** e si avvale del contributo di un Comitato Esecutivo Multidisciplinare composto da studiosi provenienti da numerose università di prestigio a livello internazionale.*

Il Simposio promuove il dialogo aperto e la collaborazione tra esperti di Ingegneria, Economia, Diritto, Scienze Ambientali, Medicina, Psicologia, Sociologia e molti altri ambiti, favorendo un approccio basato sull'evidenza scientifica che connette ricerca, politiche e pratica.

Il SUM 2026 si svolge sotto il patrocinio del Ministero dell'Ambiente e della Sicurezza Energetica, della Regione Campania, del Comune di Procida, di ENEA - Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile, e di ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale. Il Simposio si tiene inoltre sotto l'egida del Tavolo di Roma.



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Comune di Procida



Sara Deidda
Official Photographer
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SUM 2026 Organising Secretariat:
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info@euowaste.it / www.euowaste.it / www.sumsymposium.it

SYMPOSIUM STRUCTURE

STRUTTURA DEL SIMPOSIO

The scientific programme of SUM 2026 is organised into four parallel sessions, alongside a fifth track dedicated exclusively to oral sessions in Italian, and will include more than 150 presentations from 34 countries worldwide.

The presentations are organised into oral sessions, workshops, and poster sessions. Oral sessions last 75 minutes and include four presentations (40 minutes), followed by 30/35 minutes for discussion. Workshops focus on controversial issues in the circular economy and include a few introductory lectures to stimulate debate among participants.

Poster presentations are continuously accessible in a dedicated area.

Il programma scientifico del SUM 2026 è strutturato in 4 sessioni parallele più una quinta track dedicata alle sole presentazioni in lingua italiana e comprende più di 150 presentazioni ricevute da 34 Paesi.

Le presentazioni sono organizzate in sessioni orali, workshop e poster. Le sessioni orali hanno una durata di 75 minuti, e includono 4 presentazioni (40 minuti) seguite da un momento di discussione con il pubblico di circa 30/35 minuti.

I workshop sono incentrati su temi controversi dell'Economia Circolare; includono brevi presentazioni introduttive per aprire il dibattito tra i partecipanti.

I poster saranno sempre accessibili ai partecipanti al Simposio, in una zona dedicata.

CONFERENCE ROOMS / SALE CONGRESSUALI

The symposium will be held primarily at Palazzo D'Avalos. Sessions in Italian will take place at the Palazzo della Cultura / Museo Civico, while the opening session will be held at the Monastery of Santa Margherita (see pagg. 14-17).

Il simposio si terrà prevalentemente presso Palazzo D'Avalos. Le sessioni in lingua italiana si svolgeranno presso il Palazzo della Cultura / Museo Civico, mentre la sessione di apertura avrà luogo presso il Cenobio di Santa Margherita (vedi pagine 14-17).

Session A:	Blue Room - Palazzo D'Avalos / first floor
Session B:	Pink Room - Palazzo D'Avalos / first floor
Session C:	Azure Room - Palazzo D'Avalos / first floor
Session D:	Red Room - Palazzo D'Avalos / ground floor
Session E:	Museo Civico / Saletta primo piano
Posters:	Entrance hall - ground floor
Coffee breaks:	Courtyard - Palazzo D'Avalos

CONFERENCE VENUES

LE SEDI DEL SIMPOSIO

The SUM Symposium has selected a non-conventional destination designed to encourage genuine reflection: **Procida**, a gem in the Bay of Naples and Italy's Capital of Culture in 2022.

Amidst its pastel-colored alleys and the scent of the sea, the island offers an atmosphere where focus and contemplation arise naturally. This intimate setting provides the **ideal foundation for a scientific forum of global and multidisciplinary scope**.

Just as scientific research is dedicated to uncovering value within resources, Procida rewards attention to detail and a more deliberate pace. It serves as a fitting context in which the complex processes of the Circular Economy and Urban Mining can be discussed with clarity and scientific rigour.

*Per il SUM Symposium è stata scelta una destinazione non convenzionale: **Procida**, gioiello del Golfo di Napoli e già Capitale Italiana della Cultura nel 2022.*

*Tra i vicoli color pastello e l'aria salmastra, l'isola offre un'atmosfera in cui la concentrazione e la riflessione nascono spontaneamente. Questa cornice intima è divenuta la **base naturale per un forum scientifico di portata globale e multidisciplinare**.*

Così come la ricerca scientifica è dedita a individuare il valore nelle risorse, Procida premia l'attenzione ai dettagli e un ritmo più consapevole, fornendo il contesto ideale per discutere i complessi processi dell'Economia Circolare e dell'Urban Mining con chiarezza e rigore scientifico.



Cenobio di Santa Margherita

OPENING SESSION / SESSIONE APERTURA



The Opening Session of SUM 2026 will be held, for the first time, within the evocative setting of the **Cenobio di Santa Margherita**. The now deconsecrated church retains its historical and spiritual charm while serving as a unique cultural venue, offering a scene of extraordinary beauty with breathtaking views over the entire island. The building is easily accessible on foot with a scenic walk of approximately 5 minutes from Piazza dei Martiri. To ensure maximum accessibility for all participants, the organisers will provide a **free shuttle service** departing from Piazza dei Martiri (please refer to p. 20 for the schedule).

*La Opening Session del SUM 2026 si terrà, per la prima volta, nella suggestiva cornice del **Cenobio di Santa Margherita**. La Chiesa, oggi sconsacrata, offre uno scenario di straordinaria bellezza con una vista mozzafiato sull'intera isola ed è facilmente raggiungibile a piedi con una passeggiata panoramica di circa 5 minuti da Piazza dei Martiri. Per garantire la massima accessibilità a tutti i partecipanti, l'organizzazione metterà a disposizione un **servizio navetta gratuito** con partenza da Piazza dei Martiri (vedi pagina 20 per gli orari).*

Address / Indirizzo: Salita Castello, 80079 Procida, Italy

Palazzo d'Avalos

SESSIONS / SESSIONI A-B-C-D



Sessions A/B/C/D of SUM 2026 will take place inside **Palazzo d'Avalos**, located at the highest point of the island in the heart of the historic centre, Terra Murata. Palazzo d'Avalos is easily accessible on foot with a scenic walk of approximately 10 minutes from Piazza dei Martiri. To ensure maximum accessibility for all participants, the organisers will provide a **free shuttle service** departing from Piazza dei Martiri (please refer to p. 20 for the schedule).

*Le sessioni A/B/C/D del SUM 2026 si terranno all'interno di **Palazzo d'Avalos** situato nel cuore del centro storico, nella zona nota come Terra Murata, il punto più alto dell'isola. Il palazzo è facilmente raggiungibile a piedi con una passeggiata panoramica di circa 10 minuti da Piazza dei Martiri. Per garantire la massima accessibilità a tutti i partecipanti, l'organizzazione metterà a disposizione un **servizio navetta gratuito** con partenza da Piazza dei Martiri (vedi pagina 20 per gli orari).*

Address / Indirizzo: Piazza delle Armi, 80079 Procida, Italy

Museo Civico, Palazzo della Cultura

ITALIAN SESSION E / SESSIONE ITALIANA E



Italian Session “E” will take at the **Museo Civico**, inside **Palazzo della Cultura**. The building is located in the area known as Terra Murata and is easily accessible on foot from both Palazzo d’Avalos (a 2-minute walk) and Piazza dei Martiri (a 10-minute walk). To ensure maximum accessibility for all participants, the organisers will provide a free shuttle service departing from Piazza dei Martiri to Palazzo D’Avalos (please refer to p. 20 for the schedule).

*La sessione italiana E si terrà presso il Museo Civico, all’interno del **Palazzo della Cultura**. L’edificio è situato nella zona nota come Terra Murata ed è facilmente raggiungibile sia da Palazzo d’Avalos (2 minuti a piedi) che da Piazza dei Martiri (10 minuti a piedi).*

Per garantire la massima accessibilità a tutti i partecipanti, l’organizzazione metterà a disposizione un servizio navetta gratuito con partenza da Piazza dei Martiri verso Palazzo D’Avalos (vedi pagina 20 per gli orari).

Address / Indirizzo: via San Michele 1, 80079 Procida, Italy

CHAIRS & SPEAKERS INFO

INFO PRESIDENTI E RELATORI

INFORMATION FOR SESSION CHAIRS & SPEAKERS / ISTRUZIONI PER PRESIDENTI DI SESSIONE E RELATORI

Information for Session Chairs

On arrival at the Symposium venue, Chairs of oral sessions and workshops are kindly requested to contact the Speakers' Desk where curricula vitae of speakers will be provided and any last-minute changes will be notified.

Fifteen minutes prior to the start of the sessions, Chairs should report to the conference room where the session will take place, to meet the speakers.

Chairs are furthermore requested to ensure that all speakers remain seated at the table throughout the entire session and that the timetable is strictly adhered to. This is essential to ensure that each speaker is granted equal time for their presentation (max 10 minutes each) and the Q&A discussion.

Informazioni per i Presidenti di sessione

I Presidenti delle sessioni orali e dei workshop sono gentilmente pregati di fermarsi allo Speakers Desk al proprio arrivo presso la sede del Simposio affinché vengano forniti loro i curricula vitae dei relatori e vengano comunicate eventuali modifiche al programma della sessione che dovranno presiedere.

15 minuti prima dell'inizio delle rispettive sessioni, i Presidenti si presenteranno presso la sala dove si svolgerà la sessione per prendere contatto con i relatori.

I Presidenti di sessione sono inoltre pregati di adoperarsi affinché nessuno dei relatori abbandoni la sala prima della conclusione della sessione e venga rispettata la tempistica prevista. Quest'ultimo aspetto è di particolare importanza al fine di garantire ad ogni relatore lo stesso tempo per la propria presentazione (max 10 minuti ciascuno) e per eventuali domande.

Information for Speakers

Speakers should meet the Chair 15 minutes prior to the start of their session. The Chair will be available in the conference room where the session is to take place. Speakers should be present at the conference table from the beginning of the session and remain for the entire duration. During the presentation commercial advertising should be avoided. Mention of affiliations or company name should be very discreet.

A member of our staff is available at the Speakers' Desk for all requirements. Speakers who have not sent a copy of their PowerPoint presentation to the Organising Secretariat are kindly requested to contact the Speakers' Desk in a timely manner, at least 30 minutes before their session.

If your allotted time runs out, do not under any circumstances hurry to finish the entire presentation but go straight to the conclusions. To this regard, it may be of use to prepare a slide illustrating the conclusions in a summarised version.

Informazioni per i relatori

I relatori dovranno contattare il Presidente della sessione durante la quale presenteranno la propria relazione almeno 15 minuti prima dell'inizio della stessa nella sala conferenze di riferimento. Gli autori dovranno essere presenti al tavolo della conferenza dall'inizio della sessione e rimanervi per tutta la durata della stessa. Nella presentazione va assolutamente evitata qualsiasi forma di pubblicità. Il riferimento a enti o ditte di appartenenza deve essere molto discreto.

Al Banco Relatori sarà sempre presente un incaricato dell'organizzazione per fornire eventuale assistenza. Non sarà possibile utilizzare il computer del banco relatori per preparare le relazioni, ma solo per apportare piccole modifiche e per un controllo finale.

I relatori che non avessero inviato una copia della loro presentazione PowerPoint alla Segreteria Organizzativa prima del Simposio sono cortesemente pregati di recarsi al Banco Relatori almeno 30 minuti prima dell'inizio della loro sessione.

Durante la presentazione, nel caso stia per terminare il tempo a disposizione, si prega di non accelerare per esporre il resto della relazione ma di passare direttamente alle conclusioni. A tal proposito, potrebbe rivelarsi utile preparare una slide che sintetizzi le conclusioni.

USEFUL INFORMATION

INFORMAZIONI UTILI

WHAT'S INCLUDED IN YOUR REGISTRATION / CHE COSA È INCLUSO NELLA VOSTRA REGISTRAZIONE

- Access to all Symposium sessions and workshops
- Coffee breaks
- Free shuttle service from Piazza dei Martiri to the conference venue (see details below)
- Conference Proceedings (Access to the Members Area)
- Welcome aperitif dinner & Karaoke Night
- 50% of the cost of the Closing Dinner and Live Music Party (€45 + 22% VAT) - transport by taxi included
- Conference material and Symposium Guidebook
- Symposium app

- *Accesso a tutte le sessioni del Simposio*
- *Coffee break*
- *Servizio di navetta gratuito da Piazza dei Martiri alla sede del Simposio (vedi dettaglio orari qui sotto)*
- *Accesso alla members area contenente gli Atti del Simposio*
- *Apericena di benvenuto e serata Karaoke*
- *50% del costo della Cena finale del Simposio con Live Music Party (€45 + 22% IVA) - trasporto andata e ritorno in taxi incluso*
- *Materiale congressuale e guida del Simposio*
- *App del Simposio*

FREE SHUTTLE SERVICE / SERVIZIO NAVETTA GRATUITO

To ensure maximum accessibility to the symposium venue, the organisers have arranged a free shuttle service departing from Piazza dei Martiri, available on Wednesday 20 / Thursday 21 / Friday 22 with the following schedule:

- Morning: from 9:00 to 9:30 / from 10:45 to 11:15
- Afternoon: from 14:30 to 15:00 / from 16:15 to 16:45

Per garantire la massima accessibilità alla sede del Simposio, in concomitanza con l'inizio di tutte le sessioni, nelle giornate di Mercoledì 20, Giovedì 21 e Venerdì 22, è a disposizione di tutti i partecipanti un servizio di navetta gratuito, con partenza da Piazza dei Martiri, nei seguenti orari:

- *Mattino: dalle 9:00 alle 9:30 / dalle 10:45 alle 11:15*
- *Pomeriggio: dalle 14:30 alle 15:00 / dalle 16:15 alle 16:45*

ISLAND APP

APP PROCIDA



MAKE THE MOST OF YOUR STAY: DOWNLOAD THE PROCIDA ISLAND APP!

Procida Island is the official app of the beautiful island of Procida, available for both iOS and Android devices.

Designed for both locals and visitors, the app offers a complete guide to all businesses and services on the island - no exceptions. Whether you're looking for a cozy restaurant, local artisans, or essential services, you'll find everything you need at your fingertips.

Explore interactive maps, discover must-see spots with detailed descriptions, and stay up to date with ferry schedules, bus timetables, and beach locations - all in one place.

Make the most of your time on the island: download Procida Island now!

VIVI AL MEGLIO IL TUO SOGGIORNO: SCARICA LA APP PROCIDA ISLAND

Procida Island è l'app ufficiale della splendida isola di Procida, disponibile per dispositivi iOS e Android.

Pensata sia per i residenti che per i visitatori, l'app offre una guida completa a tutte le attività e i servizi presenti sull'isola – nessuno escluso. Che tu stia cercando un ristorantino accogliente, artigiani locali o servizi essenziali, troverai tutto ciò di cui hai bisogno a portata di mano.

Esplora mappe interattive, scopri i luoghi imperdibili con descrizioni dettagliate e rimani sempre aggiornato su orari dei traghetti, linee degli autobus e spiagge – tutto in un'unica app.

Vivi Procida al massimo: scarica subito Procida Island!



MOBILE APP & PROCEEDINGS

APP E ATTI DEL SIMPOSIO

Enhance your event experience with our official app! Powered by **Eventify**, the app allows you to:

- view the full agenda and session details
- bookmark favourite sessions and build your personal schedule
- read speaker profiles
- connect with fellow attendees and expand your network
- share photos and posts on the social feed
- receive real-time updates and news on all conference activities
- find useful info about Procida, ferry & bus timetables, places to see, local recommendations

Download it now and check out all the powerful features!

INSTRUCTIONS FOR DOWNLOAD

Mobile app (for smartphones and tablets)

The mobile app is available in the App Store and Google Play Store:

- Download the **Eventify** app
- Open the app and search for SUM 2026
- Click on the event and then on “View more” to access all contents

To unlock all features, log in entering the same email address you used to register for the Symposium. You will receive an email with your personal passcode to log in to the app.

If you lose the passcode, don't worry - you'll receive the email each time you log in.

Be sure to check the “Event Guide” tab for detailed and useful info about the conference and Procida!

Desktop version (for computers)

The web version is accessible at: <https://sumsymposium.eventify.io/>

To unlock all features, click on “Login” in the top right corner and enter the same email address you used to register for the Symposium. You will receive an email with your personal passcode to log in to the app.

If you lose the passcode, don't worry - you'll receive the email each time you log in.

SYMPOSIUM PROCEEDINGS

All accepted papers are available for download (PDF documents) from the website members' area (available upon login to registered participants only) at: <https://www.sumsymposium.it/en/members-area>



Massimizza la tua esperienza: l'app ufficiale del Simposio ti aspetta!
Sviluppata da Eventify, l'app ti consente di:

- esplorare il programma e salvare le tue sessioni preferite
- leggere i profili dei relatori
- connetterti con altri partecipanti ed espandere il tuo network
- condividere foto e post nel social feed
- ricevere aggiornamenti e notizie in tempo reale su tutte le attività della conferenza
- trovare informazioni utili su Procida, orari di traghetti e autobus, luoghi da visitare e consigli locali

Scaricala subito e scopri tutte le sue esclusive funzionalità!

ISTRUZIONI PER IL DOWNLOAD

App per smartphone e tablet

La app è disponibile su App Store e Google Play Store:

- Scarica l'app **Eventify**
- Apri l'app e cerca SUM 2026
- Clicca sull'evento e poi su "View more" per accedere a tutti i contenuti

Per sbloccare tutte le funzionalità, accedi con il tuo profilo inserendo lo stesso indirizzo email utilizzato per registrarti al Simposio. Riceverai un'email con il tuo codice personale per accedere all'app.

Se perdi il codice, non preoccuparti: riceverai l'email ogni volta che effettui l'accesso.

Assicurati di consultare la sezione "Event Guide" per tutte le info dettagliate sulla conferenza e su Procida!

Versione Computer (PC e notebook)

La app è accessibile anche da computer al seguente link:

<https://sumsymposium.eventify.io/>

Per sbloccare tutte le funzionalità, accedi con il tuo profilo inserendo lo stesso indirizzo email utilizzato per registrarti al Simposio. Riceverai un'email con il tuo codice personale per accedere all'app.

Se perdi il codice, non preoccuparti: riceverai l'email ogni volta che effettui l'accesso.

ATTI DEL SIMPOSIO

Tutti i paper accettati sono disponibili per il download (file PDF) nell'area riservata del sito ufficiale del Simposio (accesso con login solo per i partecipanti) all'indirizzo: <https://www.sumsymposium.it/en/members-area>

SOCIAL PROGRAMME

EVENTI SOCIALI

Social events have always been an essential component of our conferences' success. More than simple convivial gatherings, they provide valuable opportunities where professional dialogue is enriched by genuine human connections, within a relaxed and engaging atmosphere.

For SUM 2026, we have designed a social programme aimed at immersing participants in the unique character of Procida through its picturesque landscapes and authentic local flavours.

We invite you to discover the events we have planned.

Gli eventi sociali hanno sempre rappresentato una componente essenziale del successo dei nostri convegni. Più che semplici momenti conviviali, costituiscono preziose occasioni in cui il dialogo professionale si arricchisce di autentiche relazioni umane, in un'atmosfera rilassata e coinvolgente.

Per il SUM 2026 abbiamo ideato un programma sociale pensato per immergere i partecipanti nel carattere unico di Procida, attraverso i suoi paesaggi suggestivi e i suoi sapori autentici. Vi invitiamo a scoprire gli eventi in programma.



Wednesday / 20 May / 18:45

WELCOME APERITIF DINNER ON THE TERRACE AND KARAOKE EVENING

Join us at the Santa Margherita Monastery for a welcome apericena on a breathtaking seaside terrace. The evening will continue inside the Monastery with a lively **karaoke night** accompanied by an **open bar** - **Pag. 34**



Thursday / 21 May / 20:00

UNDER THE STARS OF CORRICELLA: DINNER AND MUSIC NIGHT

Enjoy an authentic experience in the charming Marina Corricella. Among colorful houses overlooking the sea and timeless alleyways, you will savor a dinner of fresh seafood. The evening will continue at Blu, an elegant lounge bar, with a DJ set and entertainment. **Page 48**



Friday / 22 May / 20:30

FINAL PROCIDA DINNER WITH LIVE MUSIC

The dinner will take place at La Pergola Restaurant, set beneath a charming lemon grove. The evening will feature a dance party with live music, where guests can enjoy the night together until late. 50% of the cost is included in the Symposium entrance fee. **Reservations are mandatory.** Please book your place - **Page 60**

DAY 1 / WEDNESDAY
MAY 20

WEDNESDAY MAY 20

MORNING

9:30 - 11:00 / MONASTERY OF SANTA MARGHERITA

OPENING SESSION AND INTRODUCTORY LECTURES

Chair / *Presidente*: Luísa Martins (PT), Andreas Bartl (AT)

WELCOME ADDRESSES / *SALUTI DI BENVENUTO*

- Luísa Martins, *IRACE President - Técnico, University of Lisbon (PT)*
- Andreas Bartl, *TU Wien (AT)*
- Paolo Russo, *President of Tavolo di Roma (IT)*
- Leonardo Costagliola, *Councillor for Tourism, Municipality of Procida (IT)*

OPENING LECTURES / *RELAZIONI DI APERTURA*

One Health and Sustainability: two sides of the same coin

by Andrew Cunningham, Institute of Zoology, Zoological Society of London (UK)

This talk highlights the relevance of the One Health approach within the context of circular economy. It shows how human activities drive both infectious diseases and biodiversity loss, linked to linear production models. Special focus will be given to livestock production as a key nexus between health, environment, and resource use.

The lecture expands to planetary health, emphasizing the impact of ecosystem degradation. It will underline the need to rethink global food systems in a sustainable, regenerative way. An integrated perspective will position circular economy as a key driver for healthier systems.

Insights into the upcoming Circular Economy Act: Anticipated instruments and background research by the Joint Research Centre of the European Commission

by Leonidas Milios, Joint Research Centre (JRC) of the European Commission

This talk will present the strategic role of the Circular Economy in strengthening Europe's sustainability and economic resilience. It will introduce the upcoming Circular Economy Act (CEA) and its relevance within the EU policy framework. Key challenges will be addressed, including critical raw materials, market fragmentation, and the gap between virgin and recycled materials.

The lecture will outline the main pillars of the CEA and its contribution to industrial competitiveness and resource security. Insights from the Joint Research Centre will highlight ongoing work supporting the development of the Act.

Particular focus will be given to End-of-Waste criteria and improved recovery of critical materials from waste streams. The talk will provide a forward-looking perspective on how EU policies can accelerate the transition to a circular economy.

At the end of the Opening Session, we will transfer to Palazzo D'Avalos, where SUM will continue over the following days and where coffee breaks will be served.



COFFEE BREAK / 11:00 - 11:30

WEDNESDAY MAY 20

MORNING



Andrew Cunningham
Zoological Society of London (UK)

Prof. Andrew Cunningham is a veterinarian who has worked at the Zoological Society of London since 1988, where he is Deputy Director of Science. His research focuses on infectious and non-infectious diseases affecting wildlife conservation, including disease emergence and zoonotic spill-over.

He has made key contributions to wildlife disease research, including the discovery of a new ranaviral disease in amphibians and the first definitive evidence of a species extinction caused by an infectious disease. He also co-led the international team that identified the chytrid fungus responsible for global amphibian declines, earning a CSIRO medal, and investigated vulture declines in South Asia. His work on zoonotic viruses in African bats earned him a Royal Society Wolfson Research Merit Award in 2010. He is a Fellow of the Royal College of Veterinary Surgeons and received the British Veterinary Association's Advancement of Veterinary Science award in 2025. He has served on the Quadripartite One Health High Level Expert Panel and the WHO/Europe One Health Technical Advisory Group, and currently advises the UK government on wildlife disease and vector-borne disease surveillance.



Leonidas Milios
Joint Research Centre
European Commission

Dr. Leonidas Milios is a Scientific Project Officer at the Joint Research Centre (JRC) of the European Commission. Leonidas' current research activity at the JRC is tightly related to the multiple facets of circular economy transition, including product and waste policy impact assessments, the definition of End-of-Waste criteria under the Waste Framework Directive, as well as recyclability assessment of packaging under the Packaging and Packaging Waste Regulation.

Prior to his current role, Leonidas was engaged for several years in academia, as well as in various consulting roles, both in the public and private sector within the area of resources and waste management.

Leonidas holds a PhD in Industrial Environmental Economics from Lund University, with a strong focus on circular economy policy analysis, and a MSc Degree in Environmental Engineering and Sustainable Infrastructure from the Royal Institute of Technology (KTH).



 **COFFEE BREAK / 11:00 - 11:30**

WEDNESDAY MAY 20

MORNING

SESSION A01 / 11:30 - 12:45 / BLUE ROOM - First Floor

CIRCULAR ECONOMY STRATEGIES

Chair / Presidente: Rainer Stegmann (DE)

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 B01 / 11:30 - 12:45 / PINK ROOM - First Floor

WASTE QUALITY AND COLLECTION

Chair / Presidente: Silvia Serranti (IT)

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



LUNCH BREAK / 12:45 - 15:00

WEDNESDAY MAY 20

MORNING

SESSION C01 / 11:30 12:45 / AZURE ROOM - First Floor

WORKSHOP - CRITICAL RAW MATERIALS IN ENERGY TRANSITION

Chair / Presidente: Michal Šyc (CZ)

This workshop explores the role of critical raw materials (CRMs) in the green energy transition, focusing on recovery and recycling strategies to enhance resource security and resilience. It combines policy perspectives with technological case studies on supercapacitors, solid oxide cells, and lithium-ion batteries, highlighting urban mining, circular economy approaches, and process innovation as key pathways to reduce import dependence and support Europe's energy transition.

Introductory Lectures:

M. Šyc (CZ): Critical Raw Materials recovery - Introduction

R. Kumari, M. Šyc (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. Tamaro, 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 D01 / 11:30 12:45 / RED ROOM - Ground Floor

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



 LUNCH BREAK / 12:45 - 15:00

WEDNESDAY MAY 20

AFTERNOON

SESSION A02 / 15:00 - 16:15 / BLUE ROOM - First Floor

PLASTICS

Chair / *Presidente*: Pierre Hennebert (FR)

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 human exposure

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

SESSION B02 / 15:00 - 16:15 / PINK ROOM - First Floor

ENERGY IN CIRCULAR ECONOMY

Chair / *Presidente*: Jonathan Wong (CN)

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



 **COFFEE BREAK / 16:15 - 16:45**

WEDNESDAY MAY 20

AFTERNOON

SESSION C02 / 15:00 - 16:15 / AZURE ROOM - First Floor

CIRCULAR ECONOMY STRATEGIES IN DIFFERENT COUNTRIES OF THE WORLD

Chair / *Presidente*: Stefan Salhofer (AT)

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. Rääkkönen (FI)

MFA-based economic value modelling for smartphone recycling in Finland

SESSION D02 / 15:00 - 16:15 / RED ROOM - Ground Floor

WORKSHOP - CO₂ HYDRATES FOR CARBON CAPTURE, UTILIZATION AND STORAGE

Chair / *Presidente*: Ana Paula Ribeiro (PT), Karey Maynor (US)

This workshop will explore the emerging role of carbon dioxide hydrates in carbon management within CCUS strategies and circular economy frameworks.

CO₂ hydrates offer promising solutions for dense, reversible storage, as well as for CO₂ separation, transport, and integration with energy and resource systems. The session will begin with short presentations covering the fundamentals of hydrate formation, stability, and kinetics, followed by recent technological developments. Particular attention will be given to utilisation pathways, including capture, separation, temporary storage, transport, and hybrid approaches with mineralisation, conversion, and energy storage.

Interactive discussions will address key scientific, technical, and economic challenges limiting large-scale deployment. By bringing together experts from multiple disciplines, the workshop aims to define the practical role of CO₂ hydrates and identify priorities for future research and innovation.



 **COFFEE BREAK / 16:15 - 16:45**

WEDNESDAY MAY 20

AFTERNOON

SESSION A03 / 16:45 - 18:00 / BLUE ROOM - First Floor

DECISION TOOLS IN CIRCULAR ECONOMY

Chair / *Presidente*: Thomas Astrup (DK)

A. Arias, E. Katsou (UK)

Framework for sustainable biofuels: indicator development and pathway to digital toolkit and ecolabeling

I. Marjanović, J.J. Stanković, M. Stanojević (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 B03 / 16:45 - 18:00 / PINK ROOM - First Floor

ARTIFICIAL INTELLIGENCE IN CIRCULAR ECONOMY

Chair / *Presidente*: Paola Cucuzza (IT)

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

G.V. Recupero, A. Luciano, L. Gurreri, C. Dell'Aquila, G. Mancini (IT)

Towards a Circular Mediterranean: innovative strategies and digital solutions of the medwise project for organic resource management



 **WELCOME APERITIF DINNER & KARAOKE NIGHT / 18:45 - 00:00**

WEDNESDAY MAY 20

AFTERNOON

DAY 1

SESSION C03 / 16:45 - 18:00 / AZURE ROOM - First Floor

CIRCULAR ECONOMY IN MANAGING INDUSTRIAL WASTE

Chair / *Presidente*: Antonella Luciano (IT)

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 D03 / 16:45 - 18:00 / RED ROOM - Ground Floor

WORKSHOP - MULTIDISCIPLINARY ISSUES WITH PFAS IN CIRCULAR ECONOMY

Chair / *Presidente*: Tarek Rashwan (UK)

PFAS are widely used persistent synthetic compounds found in products from firefighting foams to cosmetics. Their toxicity and bioaccumulation pose significant environmental and health risks.

While technologies such as activated carbon and ion exchange resins can remove PFAS from water, more contaminated matrices require advanced treatments, making them a challenge for the circular economy.

Despite progress, PFAS remain difficult to manage due to their chemical diversity and resistance to conventional treatments. The workshop will address key challenges and discuss their integration into circular economy strategies.

Introductory Lectures:

T. Rashwan (GB): Technical challenges associated with PFAS in a circular economy

M. Johansson (SE): Legal challenges associated with PFAS in a circular economy



 **WELCOME APERITIF DINNER & KARAOKE NIGHT / 18:45 - 00:00**

WEDNESDAY MAY 20

SOCIAL EVENT

WELCOME APERITIF DINNER ON THE TERRACE AND KARAOKE EVENING APERICENA DI BENVENUTO SULLA TERRAZZA E SERATA KARAOKE Santa Margherita Monastery, Terrace / from 18:45 onwards

To mark the opening of the Symposium, we are delighted to invite participants to a memorable welcome apericena set in an extraordinary location: the terrace of the Church of Santa Margherita. Perched on a promontory overlooking the sea, this stunning venue—where the opening session will be held in the morning—offers breathtaking views of Ischia and Capri, providing the perfect backdrop to begin our time together.

The evening will unfold with an apericena featuring a rich selection of appetizers and traditional specialties from Procida, offering a first, authentic taste of the island's culinary heritage.

As the sun sets, the event will continue inside the Monastery with a lively and engaging karaoke night - an informal and spirited opportunity to connect, unwind, and, for those who wish, take the stage and join the fun.

Throughout the evening, guests will also enjoy an open bar serving a curated selection of local alcoholic beverages and beers.

The event is free for symposium delegates but reservation is mandatory by Wednesday h. 15:00.

Accompanying persons should purchase the ticket (€ 35 + VAT 22%).

Per inaugurare il Simposio, siamo lieti di invitare i partecipanti a una memorabile apericena di benvenuto in una cornice straordinaria: la terrazza della Chiesa di Santa Margherita. Arroccata su un promontorio affacciato sul mare, questa splendida location - sede della sessione di apertura del mattino - offre una vista mozzafiato su Ischia e Capri, creando l'atmosfera perfetta per dare inizio al nostro incontro.

La serata si aprirà con un'apericena ricca di specialità tradizionali procidane, per offrire un primo, autentico assaggio della cultura gastronomica dell'isola.

Al calare del sole, l'evento proseguirà all'interno del Monastero con una serata di karaoke vivace e coinvolgente, un'occasione informale per socializzare, rilassarsi e, per chi lo desidera, mettersi in gioco e scatenarsi!

Nel corso della serata sarà inoltre disponibile un open bar con una selezione di alcolici locali e birre.

L'evento è gratuito per gli iscritti al Simposio ma è obbligatorio prenotarsi entro le ore 15:00 di mercoledì.

Eventuali accompagnatori dovranno acquistare il biglietto (€ 35,00 + IVA 22%).



DAY 2 / THURSDAY
MAY 21

THURSDAY MAY 21

MORNING

SESSION A04 / 9:30 - 10:45 / BLUE ROOM - First Floor

MATERIAL RECYCLING FROM WEEE

Chair / Presidente: Simonetta Cota (IT)

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 electro dialysis strategy for critical metal recovery from end of life lithium ion batteries

P. Toniolo, S. Bastami, M.J. Lacadena (IT)

Enhancing metal recovery from battery black mass using hydrogen peroxide-assisted leaching

SESSION B04 / 9:30 - 10:45 / PINK ROOM - First Floor

BIOPLASTICS

Chair / Presidente: Andreas Mautner (AT)

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, I. Schneider, H. Zhang, Y. Topalova, F. Lü, P. He (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



 **COFFEE BREAK / 10:45 - 11:15**

THURSDAY MAY 21

MORNING

DAY 2

SESSION C04 / 9:30 - 10:45 / AZURE ROOM - First Floor

CIRCULAR ECONOMY IN CONSTRUCTION & DEMOLITION WASTE MANAGEMENT

Chair / *Presidente*: Flora Faleschini (IT)

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. Vizek, K. Orion (EE)

Influence of fine-fraction construction and demolition waste on the strength and moisture performance of concrete

SESSION D04 / 9:30 - 10:45 / RED ROOM - Ground Floor

LEGAL ISSUES IN CIRCULAR ECONOMY & IN END-OF-WASTE PROCEDURES

Chairs / *Presidenti*: Maria Pettersson, Oskar Johansson (SE)

This session explores the legal and regulatory challenges shaping the transition to a circular economy, focusing on waste legislation, eco-design standards, and compliance with EU directives. It will address how legal frameworks influence waste-related activities, and the classification, handling, and reuse of waste materials.

O. Johansson (SE): Introduction: Waste or Resource

C. Dalhammar (SE): EU product laws as drivers and barriers for circular business solutions

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



 **COFFEE BREAK / 10:45 - 11:15**

THURSDAY MAY 21

MORNING

SESSION A05 / 11:15 - 12:30 / BLUE ROOM - First Floor

TREATMENT FOR TEXTILE WASTE RECYCLING

Chair / *Presidente*: Andreas Bartl (AT)

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 B05 / 11:15 - 12:30 / PINK ROOM - First Floor

RESIDUES FROM CARS

Chair / *Presidente*: Giovanni Beggio (IT)

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, E. 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 (UK)

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. Mozzone, F. Picano, P. Sgarbossa, A. Stoppato (IT)

Car fluff valorisation through unconventional treatments



LUNCH BREAK / 12:30 - 15:00

THURSDAY MAY 21

MORNING

DAY 2

SESSION C05 / 11:15 - 12:30 / AZURE ROOM - First Floor

URBAN DRAINAGE IN CIRCULAR ECONOMY

Chair / *Presidente*: Claudio Di Iaconi (IT)

K. Houlihan, H. Morgan, X. Wang, I.D. Williams (UK)

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

S. Raje, J. Sansalone (US)

Recovery Tools for Particulate Matter in Traffic-Dominated Urban Microclimates Benefits Health, Ecology and Sustainability

R. Stegmann (DE)

Ecological waste and water management in Eco-Cities

SESSION D05 / 11:15 - 12:30 / RED ROOM - Ground Floor

WORKSHOP - CIRCULAR BIOECONOMY & INSECT-BASED SOLUTIONS FOR ENVIRONMENTAL SUSTAINABILITY

Chairs / *Presidenti*: Ana Paula Ribeiro, Luísa Martins (PT)

This workshop explores innovative strategies for environmental sustainability through circular economy approaches, focusing on insect-based biorefineries and waste valorisation. Inspired by the INSECTERA project, it examines how insect biomass—particularly Black Soldier Fly by-products—can be converted into valuable materials such as chitin and chitosan for sustainable and health-related applications. It offers insights into the scientific, technological, and societal dimensions of circular bioeconomy models, including resource recovery and industrial symbiosis. The workshop fosters interdisciplinary dialogue among researchers, industry stakeholders, and policymakers on sustainable innovation 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



LUNCH BREAK / 12:30 - 15:00

GIOVEDÌ 21 MAGGIO

MATTINA

Le sessioni in lingua italiana si terranno al primo piano del Palazzo della Cultura, situato a pochi metri da Palazzo D'Avalos. I partecipanti sono invitati a seguire la segnaletica dedicata per raggiungere la sala.

SESSION E05 / 11:15 - 12:30 / PALAZZO DELLA CULTURA - Primo Piano

WORKSHOP - INFRASTRUTTURE URBANE IN TERRITORI CIRCOLARI

Presidenti: Anna Attademo, Federica Paragliola, Sara Piccirillo, Marina Rigillo (IT)

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 2021-2026, 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



LUNCH BREAK / 12:30 - 15:00

GIOVEDÌ 21 MAGGIO

MATTINA



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.



 **LUNCH BREAK / 12:30 - 15:00**

THURSDAY MAY 21

AFTERNOON

SESSION A06 / 15:00 - 16:15 / BLUE ROOM - First Floor

ROLE OF CIRCULAR ECONOMY IN WASTEWATER TREATMENT

Chair / *Presidente*: Marina Prisciandaro (IT)

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 side-stream 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 B06 / 15:00 - 16:15 / PINK ROOM - First Floor

INSECTS BIOREFINERY

Chair / *Presidente*: Luísa Martins (PT)

V. Grossule, M. Henjak, R. Cossu (IT)

LarWaR process for WW treatment and resource recovery: state of art

L.M.D.R.S. Martins, A.P.C. Ribeiro, A. Figueiras (PT)

Advancing the EU circular bioeconomy: valorization of black soldier fly bio-waste 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



 **COFFEE BREAK / 16:15 - 16:45**

THURSDAY MAY 21

AFTERNOON

DAY 2

SESSION C06 / 15:00 - 16:15 / AZURE ROOM - First Floor

WORKSHOP - RUOLO DEL DEPOSITO SUL TERRENO E DEL LANDFILL MINING NELL'ECONOMIA CIRCOLARE / ITALIAN SESSION

Chair / Presidente: Raffaello Cossu (IT)

Le tematiche che saranno proposte per la discussione sono le seguenti:

- Quantità e qualità dei residui non riciclabili nell'Economia Circolare
- Elementi tecnici di insostenibilità ambientale nella vigente normativa sulle discariche e nelle prescrizioni autorizzative
- Indebita messa in capo ai gestori delle responsabilità ambientali di lungo termine
- Rilevanza del pretrattamento dei rifiuti per garantirne il deposito sostenibile
- Tariffazione, autorizzazioni e copertura dei costi di pretrattamento
- Ruolo del Landfill Mining nel ridurre il consumo di suolo per la realizzazione di un Interramento sostenibile
- Prospettive realistiche di recupero di risorse dal Landfill Mining
- Organizzazione tra Gestori e Tecnici di un gruppo di pressione per ricevere attenzione normativa su queste tematiche

Relazioni introduttive:

R. Cossu

Come chiudere il bilancio di materia nell'Economia Circolare

A. Artuso, E. Cossu

La riqualificazione paesaggistica e morfologica di una ex-cava di argilla come esempio applicato di sink geologico

SESSION D06 / 15:00 - 16:15 / RED ROOM - Ground Floor

WORKSHOP - CIRCULARITY IN HEALTH CARE WASTE MANAGEMENT

Chair / Presidente: Norbert Fraeyman (BE)

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



 **COFFEE BREAK / 16:15 - 16:45**

GIOVEDÌ 21 MAGGIO

POMERIGGIO

Le sessioni in lingua italiana si terranno al primo piano del Palazzo della Cultura, situato a pochi metri da Palazzo D'Avalos. I partecipanti sono invitati a seguire la segnaletica dedicata per raggiungere la sala.

SESSION E06 / 15:00 - 16:15 / PALAZZO DELLA CULTURA - Primo Piano WORKSHOP - RUS: RUOLO DEGLI STUDENTI PER L'ECONOMIA CIRCOLARE NELLE UNIVERSITÀ / PARTE 1

Presidenti: Eleonora Perotto, Maria Cristina Lavagnolo (IT)

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"



 **COFFEE BREAK / 16:15 - 16:45**

GIOVEDÌ 21 MAGGIO

POMERIGGIO



Le sessioni in lingua italiana si terranno al primo piano del Palazzo della Cultura, situato a pochi metri da Palazzo D'Avalos. I partecipanti sono invitati a seguire la segnaletica dedicata per raggiungere la sala.

SESSION E07 / 16:45 - 18:00 / PALAZZO DELLA CULTURA - Primo Piano

WORKSHOP - RUS: RUOLO DEGLI STUDENTI PER L'ECONOMIA CIRCOLARE NELLE UNIVERSITÀ / PARTE 2 - DISCUSSIONE

Presidente: Eleonora Perotto, Giovanni De Feo (IT)

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

Per informazioni: rus-risorserifiuti@polimi.it



in collaborazione con:



UNDER THE STARS OF CORRICELLA / from 20:00 onwards

THURSDAY MAY 21

AFTERNOON

SESSION A07 / 16:45 - 18:00 / BLUE ROOM - First Floor

RESOURCE RECOVERY AND ENVIRONMENTAL IMPACTS FROM ASHES

Chair / *Presidente*: Tarek Rashwan (UK)

X. Ling, H. Li, D. Yue (CN)

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 B07 / 16:45 - 18:00 / PINK ROOM - First Floor

MICROALGAE AND PLANTS CULTIVATION & RESOURCE RECOVERY

Chair / *Presidente*: Mariachiara Zanetti (IT)

V.A. Riggio, D. Alpe, M. Zanetti (IT)

Planar led photobioreactors for microalgal cultivation and CO₂ 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



UNDER THE STARS OF CORRICELLA / from 20:00 onwards

THURSDAY MAY 21

AFTERNOON

DAY 2

SESSION C07 / 16:45 - 18:00 / AZURE ROOM - First Floor

WORKSHOP - ACTIVATION OF IRACE FOCUS GROUPS

Chairs / *Presidenti*: Luísa Martins (PT), Raffaello Cossu (IT)

A key feature of IRACE will be its Focus Groups, each dedicated to addressing specific issues in the Circular Economy. These small expert groups will collect data, engage in multidisciplinary dialogue, and explore key “why, what, and how” questions. Their goal is to define problems, investigate solutions, and produce outputs such as position papers, research proposals, and policy recommendations, while engaging in public communication.

Indicative list of topics include:

Ecodesign and materials selection for circularity • Contaminants prevention in products • Strategies for Microplastics minimisation • Symbiosis Produces - recyclers • Health risks from microplastics and contaminants accumulation in products • Accumulation and release of contaminants from recycled products Fate of undifferentiated Biowaste • Sink on Soil • Recycling of critical raw materials • Sustainable patterns for plastics recovery • Thermal treatment in Circular Economy • Management and fate of asbestos waste within CE strategies • Circular Economy & Wastewaters • New recovering opportunities • Optimised legal-frame for Circular Economy • Communication about Sustainable Circular Economy strategies • Recycling of space materials and equipment.

Each Focus Group will operate within a defined time frame, with expected deliverables including policy inputs, research initiatives, and communications with authorities and the public.

SESSION D07 / 16:45 - 18:00 / RED ROOM - Ground Floor

WORKSHOP - SUSTAINABLE AND CIRCULAR ARCHITECTURE

Chairs / *Presidenti*: Marina Rigillo, Federica Paragliola, Maria-Anna Segreto (IT)
F. Paragliola, M. Rigillo, A. Cignarella, M. Segreto (IT)

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

G. Oliveri Conti, F. Bivona, F. Amara, J.A. Maieli Diaz, C. Diolosà, M. Zuccarello, R.G. Caponetto, M. Ferrante (IT)

Circular economy and use of low-embodied energy building materials: valorizing processing waste from agricultural and stone supply chains



UNDER THE STARS OF CORRICELLA / from 20:00 onwards

THURSDAY MAY 21

SOCIAL EVENT

**UNDER THE STARS OF CORRICELLA: DINNER AND MUSIC NIGHT /
SOTTO LE STELLE DELLA CORRICELLA: CENA E DJ SET
LA LOCANDA DEL POSTINO + BLU LOUNGE BAR / h. 20:00**

For the second evening of the Symposium, we invite you to experience something truly authentic in the enchanting Marina Corricella, the most characteristic fishing village of Procida. Colorful houses overlooking the sea, quiet narrow alleys, and the complete absence of cars make this place unique, where time seems to have stood still. The evening will be the perfect opportunity to breathe in the atmosphere of this small fishing village and fully immerse yourself in its authenticity.

In this extraordinary setting, also made famous by Massimo Troisi's film *Il Postino*, you will enjoy a seafood dinner featuring fish freshly caught in the morning by the local fishermen of the village. Long convivial tables will be set up to share flavors and moments of togetherness in a truly authentic "sea-to-table" experience. Seats are limited! In order to join the event, **book your place upon your arrival no later than thursday h. 17:00.**

Cost: € 60 + VAT 22% per person

Starting from 22:30 the evening will then continue just a few steps away at Blu, a former boat storage space transformed into a cozy lounge bar, featuring a **DJ set and entertainment**. Please note that beverages are not included and will be at the participant's expense.

Per la seconda serata del Simposio, vi invitiamo a vivere un'esperienza autentica nella suggestiva Marina Corricella, antico borgo di pescatori di Procida. Tra case colorate sul mare e vicoli senza tempo, gusterete una cena di pesce appena pescato in un'atmosfera conviviale e genuina.

Nella locanda resa celebre dal famoso film "Il Postino" di Massimo Troisi, potrete immergervi nella vera essenza dell'isola.

*La serata proseguirà al Blu, elegante lounge bar, con DJ set e intrattenimento. Per prendere parte all'evento è **necessario prenotare il proprio posto entro e non oltre le ore 17:00 di giovedì.***

Costo: € 60 + IVA 22% a persona

*Per coloro che non partecipano alla cena, la serata prosegue al porto della Corricella, a pochi passi dalla Locanda del Postino. Saremo lieti di accogliervi al Blu, un ex deposito di barche trasformato in un elegante lounge bar di design, con **DJ set e intrattenimento.** (le bevande non sono incluse).*



DAY 3 / FRIDAY
MAY 22

FRIDAY MAY 22

MORNING

SESSION A08 / 9:30 - 10:45 / BLUE ROOM - First Floor

MANAGEMENT OF DIFFERENT ORGANIC WASTE FRACTION

Chair / *Presidente*: Federico Illuminati (IT)

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 B08 / 9:30 - 10:45 / PINK ROOM - First Floor

CRITICAL RAW MATERIALS

Chair / *Presidente*: Maria Cristina Lavagnolo (IT)

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 (IT)

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, G. Muscatello, M. Zanolletto (IT)
Advancing circularity of Rare Earth Elements and Permanent Magnets in Europe: the PERMANET approach

A. Guerrer, M. Carraro, S. Gross (IT)

Deep Eutectic Solvents (DES) for the sustainable recovery of Critical Raw Materials used in electrocatalysts synthesis

 **COFFEE BREAK / 10:45 - 11:15**

FRIDAY MAY 22

MORNING

DAY 3

SESSION C08 / 9:30 - 10:45 / AZURE ROOM - First Floor

WORKSHOP - CLOSING THE LOOP FOR TEXTILES?

Chair / *Presidente*: Andreas Bartl (AT)

Textile waste is rapidly increasing, while true fiber-to-fiber recycling remains limited. Regulations promote circularity, but complex materials and inadequate sorting hinder progress. As a result, most textiles are downcycled, incinerated, or exported. The session will highlight key bottlenecks and discuss whether current solutions can 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.

SESSION D08 / 9:30 - 10:45 / RED ROOM - Ground Floor

WORKSHOP - STRATEGIES FOR SUSTAINABILITY EDUCATION IN MASTER'S PROGRAMS

Chair / *Presidente*: Enrico Boccaleri (IT)

This workshop brings together participants to develop a framework for an international interdisciplinary Master's course in Sustainability. Using the SISTEM Master program as a case study, it explores innovative digital and multidisciplinary teaching approaches. The session will discuss how to scale this model globally, integrating diverse fields and aligning with major policies like the European Green Deal and the UN SDGs.

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 topics.
- Conclusion & Roadmap.

FRIDAY MAY 22

MORNING

SESSION A09 / 11:15 - 12:30 / BLUE ROOM - First Floor

ENERGY PRODUCTION FROM BIOMASS

Chair / Presidente: Vincenzo Riggio (IT)

H. Gohar, G. Beggio, M. Schiavon, M.C. Lavagnolo (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, V. Poli, M. Schiavon, M.C. Lavagnolo (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 B09 / 11:15 - 12:30 / PINK ROOM - First Floor

CIRCULAR ECONOMY CASE STUDIES FROM UNIVERSITIES

Chair / Presidente: Giovanni De Feo (IT)

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



13:00 - 14:30

BLUE ROOM - First Floor

IRACE - INTERNATIONAL ASSOCIATION
ON CIRCULAR ECONOMY

GENERAL ASSEMBLY

The General Assembly is reserved for IRACE members. Should you wish to join the Association, a special 50% discount is available for SUM delegates. Discover all the benefits and become a member today! Further information on pages 68–69.



 LUNCH BREAK / 12:30 - 15:00

FRIDAY MAY 22

MORNING

DAY 3

SESSION C09 / 11:15 - 12:30 / AZURE ROOM - First Floor

WORKSHOP - CRUCIAL ISSUES IN CRITICAL RAW MATERIALS MANAGEMENT

Chairs / *Presidenti*: 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.

SESSION D09 / 11:15 - 12:30 / RED ROOM - Ground Floor

WORKSHOP - SUSTAINABLE AND CIRCULAR WM IN DEVELOPING COUNTRIES & EMERGING ECONOMIES

Chairs / *Presidenti*: Roland Ramush (UK), Stefan Salhofer (AT), Benjamin Steuer (HK)

This workshop examines how solid waste management systems in low-income and emerging economies can be developed, scaled, and financed.

It draws on practical experience to identify key constraints and enabling conditions for sustainable system transitions. The session is structured around three areas: case studies of waste management projects, focusing on stakeholder roles and capacity building; financing strategies, with emphasis on International Financial Institutions and investment approaches; and reflections on whether system change is driven by technology, governance, or their integration.

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.



 **LUNCH BREAK / 12:30 - 15:00**

FRIDAY MAY 22

AFTERNOON

SESSION A10 / 15:00 - 16:15 / BLUE ROOM - First Floor

CONVERSION OF ORGANIC WASTE TO BIOCHAR

Chair / Presidente: Hamad Gohar (IT)

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 Zانونi, L. Kinsman, T.L. Rashwan (UK)

Volatile and semi-volatile organic compounds released during biomass valorisation in applied smouldering systems

SESSION B10 / 15:00 - 16:15 / PINK ROOM - First Floor

CIRCULAR STRATEGIES FOR WEEE

Chair / Presidente: Michal Syc (CZ)

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

A. Zanoletti, A. Cornelio, C. Punta, E. Bontempi (IT)

Recovery of strategic metals from spent batteries using microwaves



COFFEE BREAK / 16:15 - 16:45

FRIDAY MAY 22

AFTERNOON

DAY 3

SESSION C10 / 15:00 - 16:15 / AZURE ROOM - First Floor

MICROPLASTICS CONTAMINATION AND REMOVAL

Chair / Presidente: Wei Peng (CN)

C.A. Cossu, V. Poli, L. Litti, M.C. Lavagnolo (IT)

Microplastics as a global threat in water, sediments and biota

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



COFFEE BREAK / 16:15 - 16:45

FRIDAY MAY 22

AFTERNOON

CLOSING SESSION / 16:45 - 18:00 / BLUE ROOM - First Floor

CIRCULAR ECONOMY ACROSS DISCIPLINES – CHALLENGES, SOLUTIONS AND FUTURE PERSPECTIVES

Chairs / *Presidenti*: Maria Cristina Lavagnolo (IT), Andreas Bartl (AT), Raffaello Cossu (IT)

The Closing Session of SUM 2026 provides an opportunity to reflect on the key outcomes of the Symposium and to synthesise insights emerging from its multidisciplinary dialogue on circular economy and urban mining.

By integrating perspectives from engineering, economics, law, environmental sciences, medicine, agronomy, architecture, and related fields, the session aims to identify cross-cutting challenges, highlight systemic solutions, and outline future research and policy directions.

Particular emphasis will be placed on the systemic nature of circular transitions and on the need for coherent, cross-sectoral approaches linking science, practice, and governance.

La sessione di chiusura di SUM 2026 offre l'opportunità di riflettere sui principali risultati del Simposio e di sintetizzare le evidenze emerse dal dialogo multidisciplinare sull'economia circolare e l'urban mining. Integrando prospettive provenienti da ingegneria, economia, diritto, scienze ambientali, medicina, agronomia, architettura e discipline affini, la sessione si propone di individuare le principali sfide trasversali, evidenziare soluzioni sistemiche e delineare future direzioni di ricerca e di policy.

Particolare attenzione sarà dedicata alla natura sistemica delle transizioni verso l'economia circolare e alla necessità di approcci coerenti e intersettoriali in grado di connettere ricerca scientifica, pratica e governance.

Open debate with the audience and the invited speakers:

- Margherita Ferrante, **Public Health Physician**, *University of Catania, Italy*
- Norbert Fraeyman, **Biochemist and Pharmacologist**, *Ghent University Hospital (BE)*
- Marco Frey, **Economist**, *Sant'Anna School of Advanced Studies (IT)*
- Silvia Gross, **Chemist**, *University of Padova (IT)*
- Kosuke Kawai, **Industrial Ecologist**, *National Institute for Environmental Studies (JP)*



FINAL PROCIDA DINNER & LIVE MUSIC PARTY / 20:30

FRIDAY MAY 22

AFTERNOON

DAY 3

- Maria Pettersson, **Environmental law**, *Luleå University of Technology, Sweden*
- Ana Paula Riberiro, **Chemist**, *Técnico, University of Lisbon (PT)*
- Stefan Salhofer, **Waste & Resource Management Expert**, *BOKU University (AT)*
- Rainer Stegmann, **Environmental Engineer**, *Technical University of Hamburg (DE)*

Closing Remarks

Raffaello Cossu (IT)

Photo Presentation: Highlights from SUM 2026



FINAL PROCIDA DINNER & LIVE MUSIC PARTY / 20:30

FRIDAY MAY 22

SOCIAL EVENT

CLOSING PROCIDA DINNER WITH LIVE MUSIC / CENA PROCIDANA DI CHIUSURA CON MUSICA DAL VIVO

La Pergola Restaurant, Via Salette 10, Procida / h. 20:30

Taxi service (round trip) provided by the organizers / servizio taxi a/r incluso.

Meeting point: Piazza dei Martiri, from 19:45

The Symposium's closing dinner will take place in the beautiful setting of La Pergola restaurant, in the heart of the island, where you will be welcomed beneath an authentic Procida lemon grove, immersed in an intimate and evocative atmosphere.

The evening will feature live music performed by a band and will be enriched by a moment dedicated to local tradition: the dressing of the Graziella, the island's traditional costume. The celebration will then continue with a dance party with live music, enjoying the night together until late.

50% of the price is included in the Symposium entrance fee. The remaining 50% will be paid by each delegate and amounts to € 45 + VAT 22%.

Reservation is mandatory no later than Thursday 21 May at 13:00 from the Secretariat desk. Accompanying persons should purchase the full ticket (€ 90 + VAT 22%).

Per concludere al meglio il SUM2026, tutti i partecipanti sono invitati alla serata procidana finale: un momento speciale per salutarci e celebrare insieme, in un'atmosfera conviviale, questi giorni di lavoro e condivisione.

La cena di chiusura del Simposio si terrà nella splendida cornice del ristorante La Pergola, nel cuore dell'isola, dove sarete accolti sotto un autentico limoneto procidano, immersi in un'atmosfera intima e suggestiva.

La serata sarà accompagnata da musica dal vivo eseguita da una band, e arricchita da un momento dedicato alla tradizione locale: la vestizione della Graziella, l'antico abito tipico dell'isola di Procida.

A seguire, la festa continuerà con un coinvolgente party danzante con musica dal vivo, per celebrare insieme fino a notte fonda.

Il 50% del costo della cena e della serata è incluso nella quota d'iscrizione al Simposio, la restante metà è a carico dei partecipanti ed ammonta a € 45,00 + IVA 22%.

Prenotazione obbligatoria presso la segreteria entro giovedì 21 maggio ore 13:00. Eventuali accompagnatori dovranno acquistare il biglietto intero (€ 90,00 + IVA 22%).



POSTER SESSION
SESSIONE POSTER

POSTER SESSION

SESSIONE POSTER

Posters will be accessible to Symposium delegates at all times in Palazzo D'Avalos, ground floor / La sessione Poster sarà accessibile per l'intera durata del Simposio e sarà allestita al piano terra di Palazzo D'Avalos.

P01 / R. Ozola-Davidane, A. Salmina, S. Ozolina-Grinevica (LV)

Upcycling polyphenol-rich food industry by-products into high-value cosmetic and biomedical materials

P02 / T. Bansal (HK)

Smart and integrated B2B based solar circularity platform

P03 / M.G. Macavei, C. Marculescu, R. Patrascu, A. Magdziarz (RO)

Analysis for valorization pathways of animal bone waste

P04 / 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

P05 / A. Estokova, M. Cambal Holosova, M. Fabianova, M. Jas (SK)

LCA analysis of the cement composites with recycled materials

P06 / D. Sica, F. Smaldone, S. Supino, B. Esposito (IT)

Bridging climate change and circular economy: employability skills profiling in the agrifood sector

P07 / R. Ozola-Davidane, J. Karasa, S. Ozolina-Grinevica, J. Kostjukovs (LV)

Secondary phosphorus mining from wastewater using natural mineral sorbents

P08 / J. Havranová, S. Cernanský (SK)

Microbial volatilization of arsenic and antimony during bioleaching of mining waste

P09 / J. Havranová, S. Cernanský (SK)

Influence of microscopic filamentous fungi on soil reaction during bioleaching of mining waste rich in Arsenic and Antimony

P10 / P. Basinas, M. Luxová, K. Chamrádová (CZ)

Characterization and degradation behaviour of commercial bioplastic shopper bags in long term anaerobic digestion assays

P11 / 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

P12 / V. Piergrossi, A. Zucaro, M. Pietrantonio, G. Fiorentino, S. Pucciarmati, L. Cafiero, M. Tammaro (IT)

Experimental recycling processes to recover materials from photovoltaic panels

P13 / *M. Dassatti, M. Prisciandaro, V. Innocenzi (IT)*

Experimental Studies on Sustainable Treatment of Textile Wastewater through Hydrodynamic Cavitation Technology and Hybrid Solutions: a Review

P14 / *T. Marinkovic, I. Berezni, N. Totic, M. Muhadinovic, N. Stanisavljevic, B. Batinic (RS)*

Systematic approach to collection schemes of electric and electronic waste: case study of Novi Sad

P15 / *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

P16 / *C. Rodrigues, V.G.L. Souza, B. Sayin, I. Coelho, A.L. Fernando (PT)*

Valorization of opuntia ficus-indica cladodes: from agricultural residue to sustainable food packaging

P17 / *Y. Shao, Y. Yuan (CN)*

A comparison of hydrochar and hydrothermal humic acid from simulated garden waste for soil improvement

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SEGRETERIA OPERATIVA

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For more than 30 years, Eurowaste has been involved in the organisation of international scientific symposia, several editions of which have attracted attendance by more than 1000 delegates from all over the world.

The company's activities are accessible to the Scientific Community worldwide in the form of support in the conception, organisation and realization of conferences, international symposia, meetings, workshops and all types of events.

Services provided

Based on the aims and participant targets set by the client, the specific events budget, the international reach of the event, specific focus of partners and sponsors and reproducibility of the event, Eurowaste develops a purpose-designed event format for the client based on the following activities:

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Eurowaste also manages a publishing house with the opportunity to produce and publish the scientific proceedings of the event (Cisa Publisher, pag. 70)

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Euowaste Srl è una società di pianificazione e gestione eventi nata inizialmente per gestire la comunicazione scientifica derivante dai lavori di ricerca nel settore dell'ingegneria ambientale dell'Università di Padova. Nel corso degli anni, l'azienda si è evoluta in un'agenzia di servizi operante a livello nazionale e internazionale nel settore dei convegni e degli eventi scientifici.

Da oltre 30 anni, Euowaste è coinvolta nell'organizzazione di simposi scientifici internazionali, diverse edizioni dei quali hanno attirato la partecipazione di più di 1000 delegati provenienti da tutto il mondo.

Le attività della Euowaste si rivolgono a tutta la comunità scientifica mondiale come supporto nella concezione, organizzazione e realizzazione di conferenze, simposi internazionali, workshop e altri tipi di eventi.

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SCIENTIFIC ORGANIZATION

ORGANIZZAZIONE SCIENTIFICA

IRACE - International Research Association on Circular Economy

IRACE is a newly established International Association, officially founded on May 9, 2025. Its mission is to bring together individuals – including academics, industry professionals, entrepreneurs, institutions, and associations – from diverse disciplines to advance the Circular Economy in a constructive and integrated way. The following key points highlight the rationale behind the establishment of Irace:

- The Circular Economy needs the full scientific engagement of intra-, cross-, multi-, inter-, and trans-disciplinary research teams for solving different critical issues
- The voice of the scientific research is at present not shaping significantly political decisions regarding Circular Economy whilst stakeholders' groups are often more organized, vocal, and influential at both EU and national levels
- Interest in Circular Economy research extends beyond universities and traditional institutions to include any stakeholder or entity that bases its strategy on scientific principles
- The establishment of IRACE will significantly support the development and dissemination of high-quality Circular Economy research
- Membership in IRACE will be open to individuals and to national and international societies and associations representing various disciplines.
- IRACE is envisioned as a lean, agile, and low-cost organization, free from bureaucratic burdens and solely focused on the advancement of scientific knowledge in the field of Circular Economy

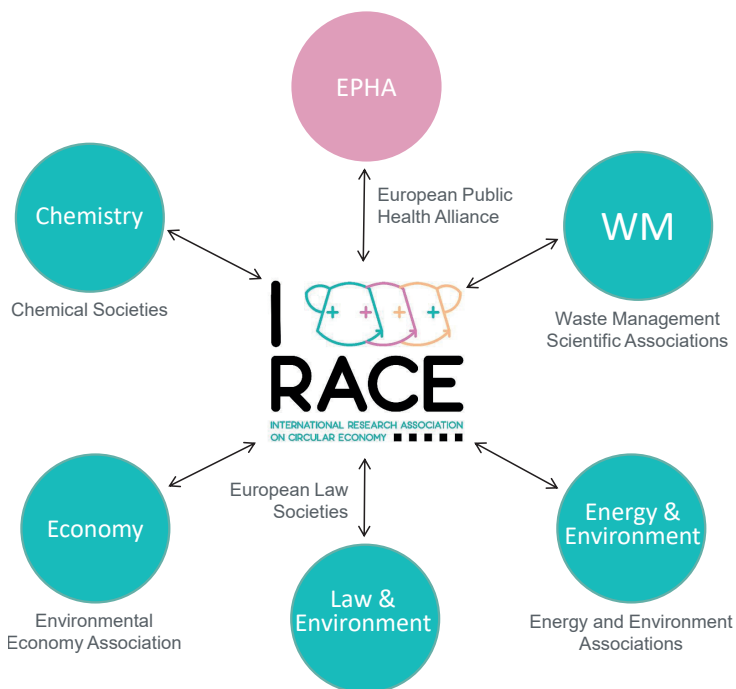
The idea of IRACE has already received strong support, with nearly 100 experts from 23 countries and more than 20 disciplines (including agronomy, architecture, biology, chemical engineering, chemistry, ecology, industrial biotechnology, geology, law, materials science, medicine, pharmacology, physics, political science, sociology, electrical engineering, environmental engineering, and wastewater engineering) endorsing its creation.

IRACE does not intend to compete with existing associations. Instead, it seeks to act as a hub, complementing and enhancing their work by bringing a strong multidisciplinary perspective. This vision is illustrated in the figure. Notably, the European Public Health Alliance has already expressed its interest in joining IRACE.

A key feature of IRACE will be its **Focus Groups**, each dedicated to addressing specific issues in the Circular Economy. These small expert groups will collect data, engage in multidisciplinary dialogue, and explore key “why, what, and how” questions. Their goal is to define problems, investigate solutions, and produce outputs such as position papers, research proposals, and policy recommendations, while engaging in public communication.

Critical issues identified during early discussions include:

- Widespread contamination and the diffusion of microplastics
- Management of non-recyclable waste and changing product composition



- Overproduction and planned obsolescence
- Misleading lobbying efforts by producers and recyclers
- Outsourcing of key Circular Economy steps (e.g., mining, recycling) to countries with inadequate environmental standards
- Unsustainable landfilling and outdated landfill regulations
- Defining the “sink” concept in the Circular Economy
- Potential health risks from contaminants in recycled products

Each Focus Group will operate within a defined time frame, with expected deliverables including policy inputs, research initiatives, and communications with authorities and the public. If you are interested in joining the IRACE focus group, **don't miss session C07 / THURSDAY 21 / 16:45-18:00**

The SUM Symposium is IRACE's primary annual scientific meeting, offering a platform for members to review progress and plan future activities.



BENEFITS OF IRACE MEMBERSHIP: Full online access to the journal *Detritus* / Proceedings & presentations from SUM Symposium / 10% discount on Article Publishing Charges for Open Access articles in *Detritus* / 10% discount on IRACE organised events

Registration for IRACE can be completed directly via the official website.

To celebrate its first anniversary, IRACE is pleased to offer SUM2026 participants a special 50% discount on all individual membership fees. To take advantage of this offer, please enter the code SUMXIRACE50 when completing the registration form at the following link: www.irace.eco/register (valid until 23/5/26)

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Detritus is an official journal of IWWG, International Waste Working Group, published by Cisa Publisher.

The journal is aimed at extending the “waste” concept by opening up the field to other waste-related disciplines (e.g. earth science, applied microbiology, environmental science, architecture, art, law, etc.) welcoming strategic, review and opinion papers.

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JOURNAL IMPACT FACTOR: 1,3

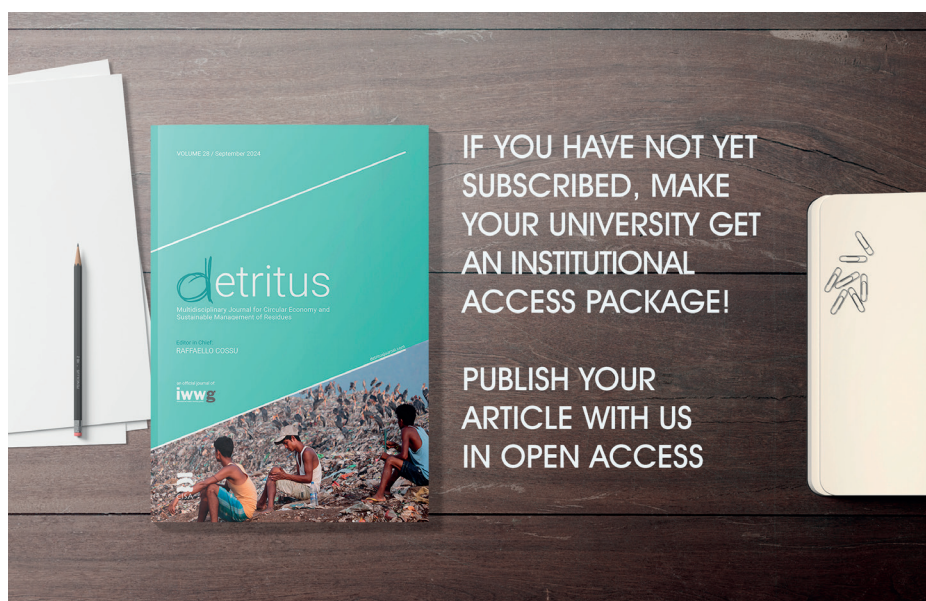
CITE SCORE: 3,3

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Multidisciplinary Journal for Circular Economy and
Sustainable Management of Residues

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Cisa Publisher is an imprint of Eurowaste Srl. Cisa Publisher represents the Eurowaste section dealing with transfer to the media (books, reports, textbooks, CD, etc) of the wealth of information accumulated throughout activities performed by the University of Padova (in particular in the field of waste management and contaminated site remediation) and by IWWG and member scientists.

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- *R. Cossu, V. Grossule, M.C. Lavagnolo*
- *La discarica sostenibile. Ruolo nell'economia circolare e proposte normative*

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- SUM - Multidisciplinary Symposium on Circular Economy and Urban mining
- Venice International Symposium on Energy from Biomass and Waste

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ULTIMA USCITA CISA PUBLISHER

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RIFIUTI E SALUTE / CRITERI DI GESTIONE, TECNOLOGIE E IMPATTI

Il libro del CIRS è finalmente disponibile!

La relazione tra gestione dei rifiuti e salute pubblica è da tempo al centro delle preoccupazioni delle comunità che vivono vicino agli impianti di trattamento e smaltimento. Allo stesso tempo, una gestione razionale e sostenibile dei rifiuti è indispensabile per la tutela dell'ambiente e il recupero di risorse materiali ed energetiche. Il rapporto tra rifiuti e salute è stato oggetto di molti studi scientifici, spesso però limitati da approcci monodisciplinari o influenzati da interessi di parte. Da questa consapevolezza nasce il Comitato Interdisciplinare su Rifiuti e Salute (CIRS), un'iniziativa indipendente che promuove un confronto rigoroso e basato su evidenze verificabili.

Questo Rapporto, frutto di sette anni di lavoro e del contributo di oltre 200 esperti, offre una sintesi aggiornata delle conoscenze su rifiuti, tecnologie di gestione e possibili impatti, con l'obiettivo di fornire strumenti utili per scelte informate a tutela della salute e dell'ambiente.

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JOIN THE CONFERENCE!

VENICE 2026

23-25 NOVEMBER 2026
HOTEL MONACO & GRAND
CANAL / VENICE, ITALY

11th INTERNATIONAL
SYMPOSIUM ON ENERGY
FROM BIOMASS AND WASTE

CALL FOR ABSTRACTS NOW OPEN!

VENICE 2026 – 11th International Symposium on Energy From Biomass and Waste will take place from 23rd to 25th November 2026 in Venice, Italy in the prestigious venue of Palazzo Dandolo, incorporated in the first-class Hotel Monaco & Grand Canal, just a few steps away from Piazza San Marco.

This edition marks a **significant milestone: 20 years** since the Symposium was first established. Since 2006, the Venice Symposium has been organised every two years without interruption, growing into one of the leading international scientific conferences in the field.

The Symposium has been a pioneer in expanding the concept of waste-to-energy to include all forms of energy recovery from waste and biomass.

The 10th edition brought together 214 delegates from 36 countries, with outstanding participation from South Korea (39 attendees), as well as Italy, China, Japan, and Germany

The **Call for Abstracts is officially open until 8th June 2026** for submitting contribution on the following topics:

1. FEEDSTOCKS

Amounts, quality, properties, monitoring, source segregation, sorting and collecting systems, energy potential evaluation, etc.

2. CONVERSION PROCESSES

Features, operation, technologies, efficiencies, emissions control, residues management, siting of plants, decentralisation, appropriate solutions for Developing Countries, etc.

3. ENERGY OUTPUTS

Quality, purification, handling, storage, transport features, quality and energy valorisation

4. POLICIES, STRATEGIES, REGULATIONS

Regional, National and international approaches, EU Strategies and directives, role of research, etc.

5. GLOBAL CLIMATE CHANGE

Role of alternative energy from waste and biomass

6. ECONOMIC ASPECTS

Virtuous relationships between economy, scientific research and technologies, case studies etc.

7. DECISION TOOLS

Sustainability achievement, cost-benefit assessment, alternative scenarios, evaluation grid, etc.

8. COMMUNICATION: WASTE TO ENERGY AND SOCIETY

Role of communication, How to communicate, Public involvement, etc.

9. OTHER RELEVANT ISSUES

Problems definition, critical aspects, solutions, case studies

ABSTRACT SUBMISSION DEADLINE: 8th JUNE 2026

For further information please visit www.venicesymposium.it or scan the QR code!



EVENTO PARTNER

Green Med Expo & Symposium

Il Green Med Expo & Symposium è un evento annuale dedicato alla sostenibilità ambientale, all'economia circolare e alla transizione ecologica, che si svolge a Napoli presso la Mostra d'Oltremare. La prossima edizione sarà la sesta e si terrà dal 27 al 29 maggio 2026 .

Cos'è il Green Med Expo & Symposium?

È una manifestazione organizzata da RiciclaTv ed Ecomondo, gratuita e aperta a tutti: cittadini, istituzioni, imprese, professionisti e studenti. L'evento offre un mix di esposizioni, convegni, seminari e attività esperienziali, con l'obiettivo di promuovere il dialogo tra pubblico e privato sui temi cruciali della sostenibilità .

Aree tematiche principali

Il programma si articola attorno a quattro macro-aree:

- **Miniere Urbane:** focus sulla gestione dei rifiuti e sull'economia circolare.
- **Acqua:** gestione sostenibile delle risorse idriche e impatti del cambiamento climatico.
- **Energia:** transizione verso fonti rinnovabili e riduzione delle emissioni di gas serra.
- **Biocittà:** sviluppo urbano sostenibile, mobilità green e infrastrutture resilienti.

Eventi e iniziative speciali

Durante i tre giorni dell'evento, sono previsti circa 45 eventi con più di 250 relatori. Tra gli eventi principali:

- **Stati Generali sull'Ambiente in Campania:** un confronto strategico promosso dalla Regione Campania sulle politiche ambientali regionali
- **Materia Viva Experience:** una mostra immersiva dedicata alla scoperta delle risorse nascoste nei rifiuti elettronici (RAEE), aperta dal 26 al 31 maggio .
- **Green Blue House:** uno spazio espositivo che esplora soluzioni abitative sostenibili e innovative
- **Premio Claudio Cicatiello:** un riconoscimento all'innovazione e alla sostenibilità per comuni e startup. La serata finale si svolgerà il 28 maggio dalle ore 19:00.

L'ingresso è gratuito e per partecipare basta scaricare il biglietto di ingresso dal portale della manifestazione (www.greenmedsymposium.it)

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SUM CIRCULAR TALES

**Craftsmanship and creative reuse
within the Symposium spaces**

ARTISTIC SET UP

GLI ALLESTIMENTI ARTISTICI

BOTTEGA D'ARTE T2 / MICHELE COSTAGLIOLA DI FIORE

We have chosen to entrust the installation design of Palazzo d'Avalos to **Michele Costagliola**, an artisanal artist from Procida who represents an authentic expression of a territory profoundly shaped by its relationship with the sea and its enduring traditions.

Within his evocative creative space, the **T2 Bottega d'Arte** in Chiaiolella, he has developed over the years a distinctive artistic practice grounded in the reuse and transformation of materials. Conceived as a laboratory of experimentation, this space gives new form to reclaimed elements – including boat timber, iron, bolts, and fishing nets – which are reinterpreted through a refined and contemporary visual language.

The sea constitutes the unifying thread of his work, not merely as a material source but as a cultural and identity-defining dimension, deeply embedded in the spirit of Procida. In this respect, his practice offers a compelling embodiment of circular economy principles, whereby waste is transfigured into value, memory into design, and material into narrative.

Entrusting the exhibition design of the symposium to this artistic practice reflects not only a commitment to sustainability, but also an intention to foreground a form of creative expression capable of articulating, with both poetic sensibility and material clarity, the core themes of this symposium.

Participants are warmly invited to visit the artist's workshop. The works exhibited at Palazzo d'Avalos, as well as **the elements composing the installation of the SUM, may be purchased by contacting the artist directly.**

For further information, please refer to the organizers at the registration desk.

*Abbiamo scelto di affidare l'allestimento di Palazzo d'Avalos ad un artista artigiano di Procida, **Michele Costagliola**, espressione autentica di un territorio profondamente legato al mare e alle sue tradizioni.*

*Nel suo suggestivo spazio creativo, la **Bottega d'Arte T2 alla Chiaiolella**, prende forma da anni una ricerca artistica fondata sul riuso e sulla trasformazione dei materiali. È un vero laboratorio di sperimentazione, dove elementi recuperati – legno proveniente da imbarcazioni, ferro, bulloni, reti da pesca – vengono reinterpretati e restituiti a nuova vita attraverso un linguaggio originale e contemporaneo. Il mare è il filo conduttore della sua produzione: non solo come fonte materiale, ma come dimensione culturale e identitaria, profondamente radicata nell'anima*



procidana. Il suo lavoro rappresenta così una sintesi concreta dei principi della circular economy, trasformando lo scarto in valore, la memoria in progetto, la materia in narrazione.

Affidare a questa piccola realtà l'allestimento del SUM significa non solo compiere una scelta sostenibile, ma anche dare voce a una pratica artistica capace di incarnare, in modo poetico e tangibile, i temi al centro del nostro simposio.

Vi invitiamo a visitare la sua bottega. È inoltre possibile acquistare le creazioni esposte qui a Palazzo d'Avalos, così come gli elementi utilizzati per l'allestimento del SUM, rivolgendosi direttamente all'artista.

Per ulteriori informazioni, è possibile contattare gli organizzatori presso il banco registrazioni.

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t2 Bottega d'Arte

di Michele Costagliola di Fiore

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instagram: t2bottegadarte

t2

Bottega d'arte



LOCAL ARTISANS

GLI ARTIGIANI LOCALI

This year the spaces of the Symposium are enriched by the presence of several artisans from Procida who, through the creative reuse of materials, give tangible form to the principles of the circular economy. An opportunity to highlight not only sustainability, but also the fabric of local small-scale realities, composed of artisans and artists who preserve knowledge and contemporary perspectives.

In addition to Michele of T2 Bottega d'Arte, participants will have the opportunity to meet **Tiziana Tedisco**, a fashion stylist from Procida, who creates unique bags by repurposing cushions, curtains, and other discarded textiles, transforming them into objects of strong aesthetic value. Also featured are the creations of **Annamaria Quadretti**, the creative force behind "Fate a pois", who, with refined craftsmanship, brings new life to reclaimed wood fragments. These artisans and their creations can be discovered and purchased within the conference venue, or by visiting their workshops and taking home an authentic piece of Procida.

Quest'anno gli spazi del SUM si arricchiscono della presenza di alcuni artigiani procidani che, attraverso il riuso creativo dei materiali, danno forma concreta ai principi dell'economia circolare. Un'occasione per valorizzare non solo la sostenibilità, ma anche il tessuto delle piccole realtà locali, fatto di artigiani e artisti che custodiscono saperi e visioni contemporanee.

Oltre a Michele di T2 Bottega d'Arte, sarà possibile incontrare Tiziana Tedisco, stilista di Procida, che realizza borse uniche recuperando cuscini, tendaggi e altri tessuti dismessi, trasformandoli in oggetti dal forte valore estetico. Saranno inoltre presenti le creazioni di Annamaria Quadretti, anima di "Fate a pois", che, con raffinata manualità, restituisce nuova vita a vecchi frammenti di legno.

Potrete scoprire queste realtà e acquistare le loro creazioni all'interno degli spazi del convegno, oppure visitare le loro botteghe nei pressi del porto e portare con voi un frammento autentico di Procida.

Contacts / Contatti:

Tiziana Tedisco

via Marina Chiaiolella, 36, Procida
+39 3314604191 / tiziana.tedisco@gmail.com
instagram: tizianatedisco

Le Fate a Pois

di Annamaria Quadretti
+39 3349577020
instagram: lefateapois



CONFERENCE BAGS

LE BORSE CONGRESSUALI

This year, the Symposium bags have been re-envisioned in alignment with the principles of the circular economy that underpin our event, with particular emphasis on textile waste prevention and the reuse of materials.

The bags have been produced within the framework of the **Prokritee project**, an initiative dedicated to the recovery and valorisation of traditional textiles, particularly Indian saris, which are transformed into new functional artefacts. In Bangladesh and India, the reuse of textiles, including saris and dupattas, constitutes a long-standing practice, deeply embedded in local cultural traditions. It reflects a perspective in which materials are not regarded as waste, but as resources to be reinterpreted and extended in their lifecycle.

This approach not only contributes to waste reduction, but also preserves the emotional and symbolic significance of fabrics, often intertwined with personal and familial histories.

When saris are no longer suitable for use as garments, they are reconfigured into functional and decorative objects, such as the bags accompanying this edition of SUM.

Each bag is a unique piece, distinguished by the richness and diversity of its colours, textures, and compositions – a tangible expression of how sustainability, cultural heritage, and craftsmanship can converge to generate value.

For further information on the project please visit: www.prokritee.com

*Quest'anno abbiamo scelto di ripensare le conference bag del Simposio in coerenza con i principi dell'economia circolare che guidano il nostro incontro, con particolare attenzione alla prevenzione del rifiuto tessile e al riutilizzo dei materiali. Le borse sono state realizzate nell'ambito del **progetto Prokritee**, una realtà che promuove il recupero e la valorizzazione di tessuti tradizionali, in particolare sari indiani, trasformandoli in nuovi oggetti d'uso.*

In Bangladesh e in India, il riutilizzo dei tessuti - come sari e dupatta - rappresenta una pratica antica e profondamente radicata nella cultura locale: un modo di concepire le risorse non come scarti, ma come materiali da reinterpretare e a cui dare nuova vita. Questo approccio consente non solo di ridurre gli sprechi, ma anche di preservare il valore affettivo e simbolico dei tessuti, spesso legati alla storia personale e familiare di chi li ha indossati.

Quando i sari non sono più utilizzabili come abiti, vengono quindi trasformati in oggetti funzionali come le borse che accompagnano questa edizione del SUM.

Ogni borsa è un pezzo unico, frutto della straordinaria varietà di colori, trame e combinazioni possibili: un piccolo esempio concreto di come sostenibilità, cultura e artigianalità possano intrecciarsi generando valore. Per ulteriori informazioni sul progetto visitare: www.prokritee.com



THE MYSTERIES I MISTERI

scan here and
discover the story
of this unique
tradition



The Procession of the Mysteries of Procida is one of the most distinctive and meaningful events on the island of Procida. It takes place on Good Friday and reenacts the Passion of Christ through a long procession of scenic groups known as the “Mysteries”.

Their preparation lasts about two months and involves the entire population, from adults and children to elderly residents. It is a shared and participatory period, in which the creation of the scenes becomes an opportunity for gathering, relationships, and the transmission of traditions across generations.

A key aspect of the Mysteries is the use of reclaimed materials – wood, cardboard, fabrics, and discarded objects – which are transformed through collective craftsmanship into scenographic structures of great symbolic value.

In this spirit, some of the Mystery sculptures have been recovered and included in the exhibition set up for this conference on the circular economy, creating a bridge between tradition and innovation.

These works testify to a deeply rooted culture of reuse within the local tradition, where waste is transformed into artistic and communal expression.

We invite you to visit the Mysteries exhibition at Terra Murata.

La Processione dei Misteri di Procida è uno degli eventi più identitari dell'isola di Procida. Si svolge il Venerdì Santo e rievoca la Passione di Cristo attraverso una sfilata di gruppi scenici, i “Misteri”.

La loro preparazione dura circa due mesi e coinvolge tutta la popolazione, dagli adulti ai bambini fino alle persone più anziane. È un tempo condiviso e partecipato, in cui la costruzione delle scene diventa occasione di incontro, relazione e trasmissione delle tradizioni tra generazioni.

Un aspetto fondamentale è l'uso di materiali di recupero – legno, cartone, stoffe e oggetti dismessi – trasformati attraverso un lavoro artigianale collettivo in strutture sceniche di grande valore simbolico.

In questo spirito, alcune sculture dei Misteri sono state recuperate e inserite nell'allestimento di questo convegno dedicato all'economia circolare, creando un ponte tra tradizione e innovazione.

Queste opere testimoniano una cultura del riuso profondamente radicata nella tradizione locale, in cui lo scarto diventa espressione artistica e comunitaria.

Vi invitiamo a visitare la mostra dei Misteri a Terra Murata.

Contacts / Contatti:

Antonio Brecciano, President of the Association “I Ragazzi dei Misteri”

