

SUM2024

SEVENTH SYMPOSIUM ON CIRCULAR ECONOMY AND
URBAN MINING / 15-17 MAY 2024 / CAPRI / ITALY

Organised by / Organizzato da:



With the scientific involvement of / Con il coinvolgimento di:

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Promoted by / Promosso da:

EPA - United States Environmental Protection Agency (US)
CRAES - Chinese Research Academy of Environmental Sciences
JSMCWM - Japan Society of Material Cycles and Waste Management
KSWM - Korea Society of Waste Management
IWMSA - Institute of Waste Management of Southern Africa
AIAT - Italian Association of Environmental and Planning Engineers
CEWMS - Circular Economy, Waste, Materials and Sustainability (IT)
GITISA - Italian Group of Sanitary Landfilling (IT)

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CONTENTS

SOMMARIO

PRESENTATION PRESENTAZIONE	8-9
SCIENTIFIC COMMITTEES & ORGANISING SECRETARIAT COMITATI SCIENTIFICI E SEGRETERIA ORGANIZZATIVA	10-13
SYMPOSIUM STRUCTURE AND CONFERENCE HALLS STRUTTURA DEL SIMPOSIO E SALE CONGRESSUALI	14-15
INSTRUCTIONS FOR SESSION CHAIRS & SPEAKERS ISTRUZIONI PER PRESIDENTI DI SESSIONE E RELATORI	16-17
USEFUL INFORMATION INFORMAZIONI UTILI	18
MOBILE APP AND MEMBERS' AREA APP DEL SIMPOSIO E AREA RISERVATA	19-20
SOCIAL EVENTS EVENTI SOCIALI	21
ORAL SESSIONS SESSIONI ORALI	24-58
Wednesday / Mercoledì	25-32
Thursday / Giovedì	33-46
Friday / Venerdì	47-58
POSTER SESSION SESSIONE POSTER	59-61
POST SYMPOSIUM TOUR GITA POST SIMPOSIO	62-64
ORGANISERS ORGANIZZATORI	66-69
OFFICIAL PARTNER JOURNAL RIVISTA PARTNER UFFICIALE	70-71
OFFICIAL PUBLISHER CASA EDITRICE UFFICIALE	72
SUPPORTERS & PARTNERS SOSTENITORI E PARTNER	73-76

PRESENTATION

PRESENTAZIONE

Following the success of the sixth edition held in 2022, attended by delegates from 34 different countries, we are pleased to welcome you in Capri at SUM 2024 / 7th Symposium on Circular Economy and Urban Mining.

Saving and recovery of resources and increasing need of environmental sustainability have been the driving forces for the development of Circular Economy and Urban Mining strategies. These represent a real revolution in waste management as well in several other fields. In order to optimise them, a scientific approach is necessary, involving all the different disciplines (Engineering, Economy, Chemistry, etc.), all possible stakeholders (industries, researchers, waste management companies, citizens, decision makers, administrators, regulators, politicians, etc.) and considering all the implementation aspects including the most critical ones, such as quality of recycled products, sustainable management of residues, symbiosis between producers and recyclers, stability of markets, end of waste regulations, role of final sinks, etc.

The SUM Symposium, organised biennially since 2012 by **IWWG-International Waste Working Group**, nowadays represents the ideal reference Forum for Circular Economy and Urban Mining, where scientists and stakeholders can debate the most advanced results and focus on future needs. SUM 2024 is held under the patronage of the Italian Ministry for Ecological Transition, Campania Region, City of Capri, 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 held under the aegis of Tavolo di Roma.

Dopo il successo della sesta edizione tenutasi nel 2022, che fu seguita da partecipanti provenienti da 34 Paesi, siamo lieti di darvi il benvenuto, finalmente di nuovo in presenza, al SUM 2024 / 7° Simposio sulla Circular Economy e sull'Urban Mining.

Il recupero e conseguente risparmio di risorse congiunto all'esigenza di garantire uno sviluppo sostenibile per l'ambiente sono state le forze guida per lo sviluppo delle strategie di Economia Circolare e di Urban Mining. Esse rappresentano una vera rivoluzione nella gestione dei rifiuti che si sta estendendo anche ad altri settori.

Per ottimizzare queste strategie è necessario un approccio scientifico che coinvolga tutte le diverse discipline (Ingegneria, Economia, Chimica, ecc.), tutti i possibili stakeholders (industrie, ricercatori, aziende di gestione e di recupero dei rifiuti, cittadinanza, decisori pubblici, amministratori, legislatori, politici, ecc.) e che consideri tutti gli aspetti inclusi quelli più critici che potrebbero rallentare la loro applicazione. Tra questi la qualità dei prodotti riciclati, la gestione sostenibile dei residui non recuperati, la simbiosi tra produttori e riciclatori, la stabilità dei mercati, la regolamentazione dell'End of Waste, il ruolo virtuoso dei sink finali, ecc.

Il Simposio SUM sull'Economia Circolare e l'Urban Mining viene organizzato biennialmente dall'IWWG-International Waste Working Group e si svolge ininterrottamente dal 2012. Esso rappresenta uno dei più importanti eventi scientifici internazionali sull'argomento.

Il Convegno, promosso da Istituzioni, Enti e Organizzazioni italiani e stranieri di primaria importanza, si avvale del supporto scientifico di alcuni dei più importanti Atenei del mondo e del fattivo contributo all'elaborazione del programma di oltre 75 scienziati, provenienti da 28 diversi Paesi, distribuiti nei cinque continenti e rappresentativi di tutti gli ambiti disciplinari coinvolti nell'Economia Circolare.

Il SUM 2024 è patrocinato dal Ministero della Transizione Ecologica, dalla Regione Campania, dalla Città di Capri, dall'Enea Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile e dall'ISPRA Istituto Superiore per la Protezione e la Ricerca Ambientale.

Il Simposio si tiene sotto l'egida del Tavolo di Roma.

SCIENTIFIC COMMITTEES

COMITATI SCIENTIFICI

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TU Wien (AT)



Prof. Jutta Gutberlet
University of Victoria (CA)



Prof. Maria Cristina Lavagnolo
University of Padova (IT)



Prof. Ian Williams
University of Southampton (UK)



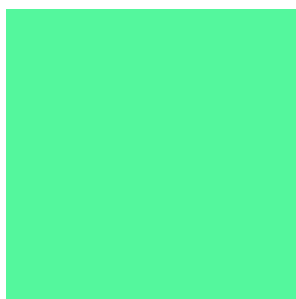
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Honorary Chair
University of Padova (IT)



Scientific Secretary / Segretario Scientifico



Dr. Giovanni Beggio
University of Padova (IT)



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- Paolo VIOTTI, Sapienza University of Rome

ORGANISING SECRETARIAT

SEGRETERIA OPERATIVA



Gioia BURGELLO
Symposium Manager
Euowaste Srl



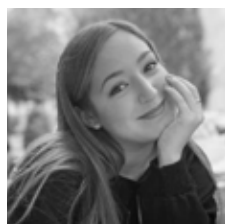
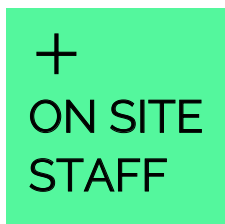
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General Manager
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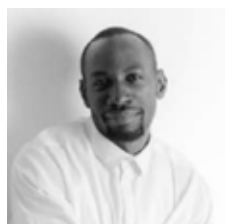
Francesca FAVA
Administration
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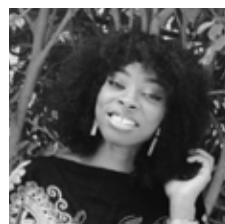
Anna ARTUSO
Graphics & website
Arcoplan



**Sofia ZANCHIN
IMPIUMI**
Conference Hall
Detritus Journal



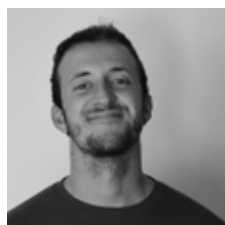
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FONKOU**
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University of Padova



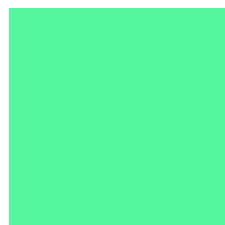
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SYMPOSIUM STRUCTURE

STRUTTURA DEL SIMPOSIO

The scientific programme of SUM 2024 includes more than 140 presentations selected by the Symposium Committees.

The presentations have been organized in Oral sessions, Workshops, Poster and video sessions. Oral sessions last 60 min and include 4 presentations (40min) and a Discussion. Workshops are focused on controversial issues in Circular Economy; they include few introductory short papers for seeding the debate among participants.

In addition to these traditional sessions, the Symposium includes **four plenary Focus sessions**, to be held everyday, one in the morning and one in the afternoon, dedicated to specific Themes of high public interest. A moderator, after a state of the art presentation and statement made by 2-3 experts in the field, will guide the discussion among the experts and the audience. The format and the session settings will be similar to a "talk show". All the presentations are in English.

Posters are accessible to Symposium delegates at all times in digital format. Three designated computers are always available in the foyer of the Congress Centre to browse through all posters (.ppt files).

These materials are available also on the Symposium mobile app. Attendees will be able to send their questions and contact the Authors via chat or video calls through the app.

Il programma scientifico del SUM 2024 comprende più di 140 presentazioni selezionate dai Comitati Scientifici del Simposio.

Le presentazioni sono state organizzate in sessioni orali, workshop, poster e video. Le sessioni orali durano 60 minuti e includono 4 presentazioni (40 minuti) seguite da un momento di discussione con il pubblico. I workshop sono incentrati su temi controversi dell'Economia Circolare; includono alcune brevi letture introduttive per aprire il dibattito tra i partecipanti.

*Oltre alle sessioni tradizionali, il Simposio prevede **quattro momenti di confronto in seduta plenaria**, le Focus Session, dedicate a temi specifici di alto interesse pubblico, che si terranno tutti i giorni, una al mattino e una al pomeriggio. Un moderatore, dopo una presentazione sullo stato dell'arte e un'introduzione da 2-3 esperti del settore, guiderà la discussione tra gli esperti e il pubblico. Il formato e le impostazioni della sessione saranno simili a un "talk show".*

La sessione Poster sarà accessibile digitalmente per l'intera durata del Simposio, attraverso la piattaforma virtuale e la app del Simposio. Tre postazioni pc sono sempre disponibili nel foyer del Centro Congressi per visualizzare tutti i poster in .ppt guardare le presentazioni pre-registrate degli autori e inviare le proprie domande tramite la sezione Q&A e la chat.

E' inoltre possibile contattare direttamente gli autori per incontrarsi di persona o virtualmente e approfondire la discussione del poster.

CONFERENCE HALLS / SALE CONGRESSUALI

SUM 2024 will be held in the Municipal Congress Centre of Capri. The congress centre consists of three fully-equipped meeting rooms. Furthermore, a fourth meeting room is located in the Hotel Syrene, just a few steps away from the congress centre, specifically in Via Camerelle 51.

Il SUM 2024 si tiene all'interno del Centro Convegni Comunale della Città di Capri. E' dotato di tre sale congressuali.

Un'ulteriore sala è ubicata presso l'Hotel Syrene, a pochi passi dal Centro Congressi, in Via Camerelle 51.

Session A: Municipal Congress Center, Cinema Hall - ground floor

Session B: Municipal Congress Center, Pollio Hall - first floor

Session C: Hotel Syrene - Via Camerelle 51, Capri

Session D: Municipal Congress Center, Glass Room - first floor



INSTRUCTIONS

ISTRUZIONI

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

Instructions for Chairs of Sessions

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 in the programme of the session to be chaired 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 aspect is of extreme importance in order to allow delegates to schedule their attendance in the parallel sessions.

Istruzioni per i Presidenti di sessione

I Presidenti delle sessioni orali e dei workshop sono gentilmente pregati di avvicinarsi 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 consentire ai partecipanti di seguire le relazioni di loro interesse in diverse sessioni parallele.

Information for Speakers

Speakers should contact the Chair 15 minutes prior to the start of the session in which their paper is to be presented. 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 on hand 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 the latest within the session prior to the one in which their own presentation is scheduled.

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 synthesized 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 Power-Point alla Segreteria Organizzativa prima del Simposio sono cortesemente pregati di recarsi al Banco Relatori non oltre la sessione precedente a quella in cui devono presentare la propria relazione (se si tratta di una sessione in programma per la mattina, il termine ultimo per contattare il Banco Relatori sarà la sera prima).

I relatori dovranno assicurarsi che la presentazione sia consegnata allo staff di riferimento secondo le tempistiche indicate.

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
- Conference Proceedings (USB pendrive)
- Conference material
- Symposium App
- 50% discount on Gala Dinner cost
- Access to the Members Area (with conference Proceedings)

- *Accesso a tutte le sessioni del Simposio*
- *Coffee break*
- *Atti del Simposio su chiavetta USB*
- *Materiale congressuale*
- *App del Simposio*
- *50% di sconto sulla cena di Gala*
- *Accesso alla members area contenente gli atti del Simposio*

REGISTRATION / REGISTRAZIONI

The Registration Desk will be open in the Conference Centre with the following schedule:

- Wednesday May 15th: 8:30 - 9:15, 10:30 - 13:00 / 15:00 - 18:30
- Thursday May 16th: 8:30 - 13:00 / 15:00 - 18:30
- Friday May 17th: 8:30 - 13:00 / 15:00 - 18:30

Il banco segreteria per la registrazione al Simposio sarà aperto presso la reception del Centro Congressi ai seguenti orari:

- *Mercoledì 15 maggio: 8:30 - 9:15, 10:30 - 13:00 / 15:00 - 18:30*
- *Giovedì 16 maggio: 8:30 - 13:00 / 15:00 - 18:30*
- *Venerdì 17 maggio: 8:30 - 13:00 / 15:00 - 18:30*

TRAVEL AGENCY / AGENZIA DI VIAGGIO

An official travel agency has been appointed to deal with delegates' and authors' airport transfers and hotel arrangements. The staff from CapriMed will be available for assistance at the Congress Centre during the Symposium week.

La CapriMed è stata nominata agenzia ufficiale del SUM 2024 e partner dei servizi di mobilità. Lo staff della CapriMed sarà disponibile per assistenza durante l'intera durata del Simposio presso il Centro Congressi.

CAPRIMED TRAVEL AGENCY / Contact: Patrizia Costante
Tel. +39 339 807 6505 / caprisite@caprimed.com

SYMPOSIUM APP

APP DEL SIMPOSIO



Our mobile app, powered by Whova, will allow participants to interact with speakers and delegates and to stay updated on all conference activities and news.

The app will be accessible from any device (phones, tablets and computers). All delegates will be able to:

- view the agenda, explore sessions and build their personal schedule
- read speakers' profiles
- network with other attendees via chat and video calls
- share photos and posts on the social wall

The app will be our main tool to communicate with you!

Please download it now and check it out!

La app ufficiale del Simposio, sviluppata da Whova, consentirà a tutti i delegati di interagire con gli altri partecipanti e a rimanere aggiornati su tutte le attività del SUM2024 (programma scientifico, eventi sociali, ultime notizie, ecc.).

La app sarà disponibile per tutti i dispositivi (smartphone, tablet e computer). Attraverso la app e la piattaforma, i delegati potranno:

- leggere tutto il programma ed esplorare le sessioni
- creare il proprio programma personalizzato
- leggere i profili e i CV degli speaker
- fare network con gli altri partecipanti tramite messaggi privati, video call o chat di gruppo
- condividere foto e post sulla bacheca
- ricevere aggiornamenti di programma e ultime notizie in tempo reale

La App sarà il nostro strumento principale per tenervi aggiornati!

Si prega di scaricarla subito e di tenerla costantemente monitorata!

INSTRUCTIONS FOR DOWNLOAD

Mobile app (for smartphones and tablets)

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

- Download the Whova app
- Sign up with the same email address you used for registering in the Symposium
- Click on the event SUM 2024

Desktop version (for computers)

The symposium app is accessible at:

https://whova.com/portal/webapp/sceau_202405/

To enter the Symposium, log in or click "Sign up here" to create a new profile with your email address.



Please make sure to use the same email address you used when registering for the Symposium and you will automatically log in to the event page.

ISTRUZIONI PER IL DOWNLOAD

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

- Scarica Whova
- Registrati con lo stesso indirizzo email fornito in fase di registrazione al Simposio
- *Clicca sull'evento SUM 2024*

Versione Computer (PC e notebook)

La app del Sum è accessibile da computer al seguente link:

https://whova.com/portal/webapp/sceau_202405/

Per accedere al Simposio, si prega di effettuare il log in o creare un nuovo profilo con lo stesso indirizzo email fornito in fase di registrazione al Simposio.

MEMBERS' AREA / AREA RISERVATA

All accepted papers are available for download (PDF documents) from the website members' area (available upon login to registered participants only).

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).

SOCIAL PROGRAMME

EVENTI SOCIALI

Social events have always played a crucial role in the success of our Symposia, representing the chance for all delegates to enjoy the company of colleagues and friends and relax after a full day of conference sessions. SUM Symposium will be the perfect occasion to meet again, create new collaborations and friendships, share ideas and have a good time together! For further details please check the bulletin board in the congress foyer or contact the organising secretariat at the registration desk!

Gli eventi sociali hanno sempre svolto un ruolo cruciale nel successo dei nostri Simposi, rappresentando l'opportunità per tutti i delegati di godersi la compagnia dei colleghi e degli amici e rilassarsi dopo una giornata intensa di sessioni conferenziali. Il SUM a Capri rappresenta l'occasione perfetta per incontrarsi di nuovo, creare collaborazioni e amicizie, condividere idee e passare del tempo insieme!

Per ulteriori dettagli sui singoli eventi serali contattare la segreteria organizzativa al banco registrazioni o consultare la bacheca nel centro congressi



Wednesday / 15 May / h. 22:00

LIVE MUSIC & DANCING NIGHT

The Taverna Anema e Core is the most famous night club on the island, a must for those who want to fully immerse in the best and authentic Caprese fun! **Buy your ticket!** Page 32



Friday / 17 May / h. 20:00

CLOSING PARTY AND GALA DINNER

As per tradition, to celebrate the closure of the conference, all delegates are invited to a formal dinner at the restaurant Al Capri, just a few steps away from the Piazzetta, with a spectacular panoramic view. **Book your seat!** Page 58



Saturday / 18 May / h. 10:00 - 14:00

CAPRI BOAT TOUR

Join us in a boat tour around the island aboard a typical gozzo. During the tour, we will have the unmissable opportunity to admire the Faraglioni and the famous Blue Grotto. Don't forget your bathing suit! **Book your place.** Page 62-63

DAY 1 / WEDNESDAY
MAY 15

WEDNESDAY MAY 15

MORNING

9:30 - 12:30 / CINEMA HALL

OPENING SESSION

Chair / *Presidente*: Raffaello Cossu, University of Padova (IT)

9:30-10:30

WELCOME ADDRESSES / SALUTI DI BENVENUTO

- MARINO LEMBO, *Mayor of Capri (IT)*
- PAOLO RUSSO, *Tavolo di Roma (IT)*
- ANDREAS BARTL, *TU Wien (AT)*
- IAN WILLIAMS, *University of Southampton (UK)*
- RAINER STEGMANN, *IWWG Managing Board*

10:30-11:00

COFFEE BREAK

11:00-12:30

OPENING LECTURES / RELAZIONI DI APERTURA

B. XI, *CRAES - Chinese Research Academy of Environmental Sciences (CN)*
Situation and future development of Recycling in China

R. STEGMANN, *T. Liu, Hamburg University of Technology (DE)*
Aspects for more attention in Circular Economy

M.C. LAVAGNOLO, G. Felici, *University of Padova (IT)*
Circular Economy & Biodiversity

E.A. NANAKI, S. Kiartzis, D. Malamis, K. Moustakas, *HELLENiQ ENERGY (GR)*
From vision to action: climate change mitigation and energy transition -
The case study of hard to abate industries

LUNCH BREAK / 12:30 - 15:00

WEDNESDAY MAY 15

AFTERNOON

SESSION A1 / 15:00 - 16:00 / CINEMA HALL

POLICIES IN CIRCULAR ECONOMY

Chair / *Presidente*: Rainer Stegmann (DE)

T. Galavote, T. Carvalho Coimbra, G. de Lorena Diniz Chaves, L. Harue Yamane, R. Ribeiro Siman (BR)

Reference scenarios preposition for the implementation of urban solid waste management policies

F. Corsini, G. Del Re, M. Di Domenico, A. Borghini, M. Frey (IT)

Exploring the adoption of Extended Producer Responsibility for managing gypsum plasterboards in Italy

C. Marques Leal Jorge Santos, C. Jorge Santos (BR)

Mining the environment: legal aspects of virtual currencies' energy consumption and e-waste under Brazilian law

M. Palermo, A. Matamoros, A. Blanco, M. Ferrando, M. Faraldi, F. Monzó Sánchez (IT)

Simplifying complexity for adoption and replication of circular economy systemic solutions: the A2C multidimensional model

SESSION B1 / 15:00 - 16:00 / POLLIO HALL

ARTIFICIAL INTELLIGENCE AND DIGITAL SOLUTIONS

Chair / *Presidente*: Silvia Serranti (IT)

T. Vögele, T. Tiedemann, T. Lange, P. Meyer, M. Trost, M. Wittmaier, S. Wolff, Y. Jin, Y.-L. Liu, P. Grote, A. Auer, A. Babu (DE)

Sorting bulky waste with the help of AI - the SmartRecycling Project

S. Salhofer, A. Allesch (AT)

Smart waste collection – The role of digitalisation in future waste management

M. Al Ahimer, S. Beheiry (AE)

Overview of Circular Economy strategies and application of Industry 4.0 technologies in the construction industry

COFFEE BREAK / 16:00 - 16:30

SESSION C1 / 15:00 - 16:00 / HOTEL SYRENE

ITALIAN SESSION:

COMUNICAZIONE & EDUCAZIONE AMBIENTALE

Chair / *Presidente*: Giovanni De Feo (IT)

G. De Feo (IT)

Educazione per un futuro circolare: dalla scuola materna all'istruzione superiore

F. Pistono (IT)

"Fiuto il cane da rifiuto": una proposta educativa dedicata all'Economia Circolare

F. Da Porto, S. Gross, M.C. Lavagnolo (IT)

La sostenibilità ambientale presso l'Università di Padova

COFFEE BREAK / 16:00 - 16:30

WEDNESDAY MAY 15

AFTERNOON

FOCUS SESSION I

CINEMA HALL / 16:30-17:20

CIRCULAR ECONOMY PRACTICALITY: REGULATORY HURDLES & KNOWLEDGE GAPS

Moderator:

Dr. Pierre Hennebert, *Consultant (FR)*

Panelists:

Dr. Rafael Basciano, *FEAD - European Waste Management Association (BE)*

Dr. Giovanni Beggio, *University of Padova (IT)*

The session will give an overview of the challenges behind the establishment of End of Waste status for specific recycled materials, highlighting regulatory, environmental, economic and life-cycle considerations. The discussion will develop starting from the following specific questions:

- When the "product" status should be reassigned to the recycled goods/secondary raw materials?
- (Alternative) Should the definition of waste be narrowed to unrecyclable material?
- How can we assess the practicality/substitutability/quality/sustainability of recycled material when compared to virgin materials in a life-cycle perspective?
- Is the existing knowledge comprehensive on the presence of non-intentionally added substances and their environmental impacts in secondary raw materials and recycled products?
- Hazard-based vs risk-based in the intended use: how should we assess impacts on environment and human health of recycled products?

Pierre Hennebert (FR)

Pierre Hennebert is a consultant in chemistry and waste management. He has worked in recent years on additives that make plastic hazardous at their functional concentration in electrical and electronic equipment, vehicles, construction, textiles and non-food packaging, on representative sampling of heterogeneous waste, on classification of hazardous waste, on end-of-waste status and on waste management.

WEDNESDAY MAY 15

AFTERNOON

SESSION A2 / 17:30 - 18:30 / CINEMA HALL

END OF WASTE

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

P. Hennebert, A. Navazas, E. Katrakis (FR)

The tacit end-of-waste status is established in the EU and crucial for the Circular Economy

G. Beggio, M.C. Lavagnolo (IT)

Analysis of case-by-case end-of-waste authorizations for recycled plastics in Italy

P. Hennebert (FR)

The tacit end-of-waste status for MWSI bottom ashes in road foundations has been used in France since 1994

S. Sorlini, A. Piccinalli, A. Abbà, G. Plizzari (IT)

Characteristics of recycled aggregates from construction and demolition waste according to the Italian EoW regulation

SESSION B2 / 17:30 - 18:30 / POLLIO HALL

BIOREFINERY

Chair / *Presidente*: Luísa Martins (PT)

A.A. Arshad, M. Miccio (IT)

Green valorization of spent coffee grounds by extraction through combined technologies: a review

I. Narváez-Prado, A. Arias, G. Feijoo, M.T. Moreira (ES)

Valorisation of a waste stream from chokeberry juice production into phenols and bioethanol: a techno-environmental assessment

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

Integrated approach for assessing microalgae cultivation efficiency and carbon dioxide sequestration potential: a case study in south Sardinia.

M. Miccio, E. Le Nouaille, B. Tauleigne, B. Cosenza (IT)

Aspen Plus® flowsheeting aids in investigating Soxhlet extraction of bioactive compounds from hazelnut residues

SESSION C2 / 17:30 - 18:30 / HOTEL SYRENE

WORKSHOP:

THERMAL TREATMENT IN CIRCULAR ECONOMY

Chair / *Presidente*: Deborah Panepinto (IT)

É. Guerreiro, H. Baier, K. Münnich, A. Felipe Simões (BR)

Case report: waste treatment and energy recovery for alternative fuel purpose in Germany

G. Campo, G. Zanetti, M. Zanetti (IT)

Preliminary results from laboratory tests assessing hydrogen production utilizing slag and surplus heat in steel facilities

G. Ye (SE)

The role of pyrometallurgy and the importance of pilot test facilities for development of sustainable recycling technologies – Swerim pilot experiences

WEDNESDAY MAY 15

SOCIAL EVENT

LIVE MUSIC & DANCING NIGHT / Serata ballo & musica dal vivo
Taverna "Anema e Core", Via Sella Orta 1, Capri / h. 22:00

Are you ready to experience an extraordinary evening, immersed in the magical atmosphere of the island of Capri? Get ready to be swept away by charm and joy, because Taverna Anema e Core, the most famous night club on the island, is ready to make you dance and sing until dawn!

Dance to the captivating notes of international hits and let yourself be carried away by the magic of music that brings people together.

Many are the national and international guests who contributed to the success and the myth of the Taverna. Celebrities from the fashion world to Hollywood stars, from football to NBA players, from the world pop scene to royal families. Who knows who the person sitting next to you could be!

Entry ticket: € 35 per person (1 cocktail + table included).

Ticket to be paid directly at the club.

Siete pronti per vivere una serata straordinaria, immersi nella magica atmosfera dell'isola di Capri? Preparatevi a essere travolti dal fascino e dalla gioia, perché la Taverna Anema e Core, icona del divertimento Made in Capri, è pronta a farvi ballare e cantare fino all'alba!

Il repertorio classico napoletano si mescola a quello latino-americano, contaminandosi con la musica leggera italiana del passato, il pop americano, il beat, rock, fino ai tormentoni estivi. I medley sono i protagonisti delle serate, ma nessuno è mai uguale all'altro, perché l'atmosfera è sempre diversa, s'improvvisa, nascono veri e propri siparietti che coinvolgono pubblico, staff e band.

La vera forza di Anema e Core è il culto dell'ospitalità. L'energia e l'entusiasmo coinvolgono tutti, il pubblico è al centro dello spettacolo, si balla e si canta anche sui tavoli o esibendosi con la band.

Moltissimi sono gli ospiti, personaggi famosi, celebrities nazionali e internazionali che hanno contribuito al successo e al mito della Taverna. Chissà chi potrebbe esserci al tavolo accanto al vostro!

Biglietto d'ingresso: € 35 a persona (include posto a sedere e 1 drink).

Il biglietto si acquista direttamente al club.



DAY 2 / THURSDAY
MAY 16

THURSDAY MAY 16

MORNING

SESSION A3 / 9:00 - 10:00 / CINEMA HALL

DECISION TOOLS IN CIRCULAR ECONOMY

Chair / *Presidente*: Paola Gallo Stampino (IT)

D. Tosches, C. Caldeira, F. Demichelis, D. Fino, S. Sala (IT)

The role of Life Cycle Assessment in the Safe and Sustainable by Design: lessons learnt from a case study

L.H. Xavier, L. Contador, B. Malabar (BR)

A framework for secondary material circularity assessment

M.A. Rosen (CA)

Exergy as a tool for a circular economy

A. Arias, S. Lago-Oliveira, G. Feijoo, M.T. Moreira (ES)

Sustainability indicators to assess bio-based value chains: a methodological approach

SESSION B3 / 9:00 -10:00 / POLLIO HALL

INSECTS ROLE IN CIRCULAR ECONOMY

Chair / *Presidente*: Valentina Grossule (IT)

M. Henjak, G. Beggio, V. Grossule (IT)

Biowaste treatment using Black Soldier Fly Larvae: effect of diet macronutrients on process performance

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

Production of bioplastics from insects

D. Caniani, R. Cossu, P. Falabella, A. Feratovic, A. Franco, V. Grossule, M.C. Lavagnolo, S. Masi, V. Pucciarelli, R. Salvia, C. Scieuzo (IT)

Lipids deriving from *Hermetia Illucens* larvae as a feedstock for biodiesel production: relevance and perspectives

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

Insects as tools - A key to the Circular Economy

COFFEE BREAK / 10:00 - 10:30

SESSION C3 / 9:00 - 10:00 / HOTEL SYRENE

ITALIAN SESSION: BUONE PRATICHE DI CIRCOLARITÀ IN ITALIA

Chair / *Presidente*: Margherita Ferrante (IT)

P. Altamura, S. Baiani, F. Ceruti, L. Cutaia (IT)

Scale-up delle buone pratiche di circolarità per l'ambiente costruito. Il contributo delle piattaforme collaborative

E. De Marco, E. Mancuso, R. Preka, S. Sbaffoni (IT)

Environmental Technology Verification (ETV): uno strumento per confermare le prestazioni ambientali delle tecnologie innovative a supporto dell'economia circolare

D. Boggiani, D. Barbieri (IT)

Economia circolare: l'Università di Pavia - Case study

SESSION D3 / 9:00 - 10:00 / GLASS ROOM

WORKSHOP: NEW-RE PROJECT STRATEGIES FOR CIRCULAR ECONOMY OF PERMANENT MAGNETS

Chairs / *Presidenti*: Laura Mascheretti, Pietro Romano (IT)

Rare Earths are listed among Critical Raw Materials, and – considering the fast-growing demand for electric vehicles – their importance will further increase over the next decades. The traditional methods for extracting REEs (Rare Earth Elements) from minerals require high energy inputs and produce large amounts of waste, while the European recovery rate of Rare Earths from Permanent Magnets (PMs) is currently only 1%. Moreover, the manual dismantling of hard disk drives (HDDs) is extremely time consuming and repetitive, and the extraction of PMs from electronic equipment is very difficult. EU countries have limited primary sources of Rare Earths: therefore, more than 95% of REEs is currently imported from China. In order to reduce the importations of these Critical Raw Materials, the New-RE project - acronym for “Neodymium and Rare Earth from Waste Recycling” - aims at improving the end-of-life management of permanent magnets, by ensuring high-quality material recycling. *Full appetizer on the website*

Introductory lectures:

L. Mascheretti, A. Tori, M. Zitta, M. Piessens, J.R. Peeters (IT)

NEW-RE Project - Strategies to improve Permanent Magnets EoL value chain: a focus on automated dismantling

P. Romano, S. Rahmati, M. Passadoro, L. Taglieri, L. Fratocchi, F. Gallo, F. Vegliò (IT)

Simulation and economical analysis of hydro-Nd process for the recovery of rare earth from EoL permanent magnets: NEW-RE and INSPIREE projects

COFFEE BREAK / 10:00 - 10:30

THURSDAY MAY 16

MORNING

FOCUS SESSION II

CINEMA HALL / 10:30-11:20

SUSTAINABLE TEXTILE MANAGEMENT: WHAT DOES IT NEED TO PROCEED?

Moderator:

Prof. Andreas Bartl, *TU Wien (AT)*

Panelists:

Dr. Wolfgang Ipsmiller, *TU Wien (AT)*

Dr. Hana Stipanovic, *TU Wien (AT)*

Dr. Nika Depope, *TU Wien (AT)*

Join us for an insightful focus session at our SUM 2024 conference, where we delve into the dynamic realm of textile management. This session promises to showcase the current state-of-the-art practices while shedding light on the imperative transition toward a circular economy within the textile industry.

In today's predominantly linear sector, the shift toward sustainability is no longer a choice but a necessity. Our esteemed panelists will offer succinct presentations, sharing their latest findings gleaned from both national and EU-funded projects. Through these presentations, we aim to highlight the significant strides already achieved in textile sustainability, while also addressing the formidable challenges that lie ahead.

By participating in this session, you will gain invaluable insights into the ongoing efforts to make the textile sector more sustainable. Join us as we explore the intersection of innovation, research, and practical solutions in shaping a more environmentally conscious future for textile management. Don't miss this opportunity to engage with leading experts in the field and contribute to the dialogue surrounding one of the most pressing issues of our time. We look forward to welcoming you to our focus session and embarking on this transformative journey together.

Andreas Bartl, *TU Wien (AT)*

Andreas Bartl is a senior scientist at TU Vienn at the Institute of Chemical, Environmental and Bioscience Engineering. In 2012 he received the Conferment of the right to lecture (“venia docendi”) and the academic title “Privatdozent”. He completed his education as a technical chemist at the TU Wien. After completing his doctorate, he worked for several years in industry in the areas of research & development and production. Since 2002 he is engaged in recycling fibers derived from end-of-life products such as apparel or tires. Currently Andreas is involved in national and H2020 research projects aiming to move the textile industry toward a circular economy. The main focus of the research lies in the area of enzymatic hydrolysis of cellulosic fibers in particular for an upscaling and the removal of elastane from textile blends.

THURSDAY MAY 16

MORNING

SESSION A4 / 11:30 - 12:30 / CINEMA HALL

SOCIAL AND ECONOMIC ASPECTS IN CIRCULAR ECONOMY OF C&D WASTE

Chair / *Presidente*: Filippo Corsini (IT)

A. Luciano, P. Altamura, S. Baiani, L. Cutaia (IT)

Buildings and the circular economy: estimating urban mining, recovery and reuse potential of building components

A. Brooks, N. Bell, J. Jambeck, M. Werner, M. Bilec (US)

Towards a community-based assessment of circular construction & demolition debris management

C. Gatti, A. Piemonti, G. Plizzari, S. Sorlini (IT)

Value added recycled materials from construction and demolition waste

A. Abou Jaoude, R. Idir, K. Mantalovas, O. Yazoghli-Marzouk (FR)

Assessing the economic, environmental, social and circularity impacts of recycled aggregates in road construction with the RE-MED application

SESSION B4 / 11:30 - 12:30 / POLLIO HALL

QUALITY OF RECYCLED PRODUCTS

Chair / *Presidente*: Deborah Panepinto (IT)

J.P.D. Fonkou, G. Salviulo, C. Castiglioni, L. Brambilla, G. Beggio, M.C. Lavagnolo (IT)

From End-of-Waste to upcycled products: preliminary results from characterization of polypropylene

G. Bonifazi, G. Capobianco, P. Cucuzza, S. Serranti (IT)

Hyperspectral imaging applied to quality control of post-consumer lightweight plastic packaging

G. Beggio, M.C. Lavagnolo (IT)

PFAS in waste and recycled products

LUNCH BREAK / 12:30 - 15:00

SESSION C4 / 11:30 - 12:30 / HOTEL SYRENE

ITALIAN SESSION:

RICERCA E INNOVAZIONE DELL' ECONOMIA CIRCOLARE IN ITALIA

Chair / *Presidente*: Maria Lucia Protopapa (IT)

D. Caputo, M.C. Lavagnolo (IT)

Il progetto MICS-PNRR per il supporto dell'Economia Circolare italiana

V. Fantin, E. De Marco, L. Cutaia, C. Chiavetta (IT)

Valutazione ambientale di un processo di valorizzazione del materiale composito con fibre di vetro delle turbine eoliche

V. Grossule (IT)

LARWAR-Project: uso di larve di mosca soldato nera per il trattamento delle acque reflue e recupero di risorse

G. Veneto (IT)

Intelligenza Artificiale e Structural Health Monitoring applicate alla protezione delle opere civili: proposte e sviluppi futuri per le infrastrutture strategiche del servizio idrico integrato gestite da Acquedotto Pugliese S.p.A.

SESSION D4 / 11:30 - 12:30 / GLASS ROOM

WORKSHOP: ROLE OF YOUNG PEOPLE IN CIRCULAR ECONOMY

Chair / *Presidente*: Ian Williams (UK)

We all know that our modern society faces many pressing problems, one of which is the development of a sustainable approach to waste (resource) management. Modern society involves consumption on a massive scale, and this leads to massive resource use and massive waste generation. Enabling effective resource management requires appropriate infrastructure, service provision and active public engagement, and this is hugely challenging. Many political, environmental, social, technological, legal, and economic approaches have been trialed, but only slow progress has been achieved.

It is a cliché, but it is certainly true that "young people are our future." The waste (resource) management community is good at organizing conferences to discuss and debate the complex (usually technical) aspects that influence how we manage our wastes (resources). But could we do more with and for our younger colleagues? Maybe we could listen to their viewpoints and perspectives better, with "more constructive ears"? Maybe we could help them better with their careers? Maybe we could learn from them, and support their progressive ideas with more energy and vigour?

This workshop will highlight that young waste management researchers/professionals have valuable insights to offer to their older counterparts. It will offer a forum for discussion on how the voices of young waste managers can be heard, and acted upon, and how older professionals can help to address the challenges faced by younger colleagues.

LUNCH BREAK / 12:30 - 15:00

THURSDAY MAY 16

AFTERNOON

SESSION A5 / 15:00 - 16:00 / CINEMA HALL

OPEN ISSUES IN CIRCULAR ECONOMY AND HEALTH PERSPECTIVES

Chair / *Presidente*: Giovanni Beggio (IT)

D. Panepinto, M. Ravina, M. Zanetti (IT)

Consequences and risk modeling of NaTech in industrial environments

A. Arias, E. Entrena-Barbero, S. González-García, G. Feijoo, M.T. Moreira (ES)

Eco-labelling dietary patterns under a life cycle assessment approach and health perspective

S. Malinconico, F. Paglietti, S. Bellagamba, S. Serranti, G. Bonifazi, D. Gattabria, I. Lonigro, R. Gasbarrone (IT)

A preliminary study on real-time asbestos recognition in tunnel spoil of green stones

L.M. Zapata-Restrepo, I.D. Williams, M.D. Hudson, G. Freeman, B. Lee, C. Prioul (UK)

Wastes from international shipping: ecotoxicological assessment of scrubber water in unicellular algae (*Tetraselmis suecica*) and blue mussel (*Mytilus edulis*) larvae

SESSION B5 / 15:00 - 16:00 / POLLIO HALL

WEEE AND PHOTOVOLTAIC WASTE

Chair / *Presidente*: Alessandra Bonoli (IT)

S. Oñate, S. Rosado, L. Gullón (ES)

Waste valorisation from photovoltaic panels and analysis of the business potential from recycling in Spain and Italy

A. Šperlich, M. Šyc, H. Muñiz Sierra (CZ)

New perspective on the composition of photovoltaic solar panels and the possibility of pre-treatment for recycling

E. Soares de Carvalho Freitas, L. Contador, L.H. Xavier (BR)

Value chain integration for e-waste management: a system dynamics approach

M. Paciolla, M. La Monica, F. Ceruti, F. Ferrero, G. Seravalli, T. Beltrani (IT)

Investigating good practices in the circular economy related to Electrical and Electronic Equipment (EEE) through the European Circular Economy Stakeholder Platform (ECESP)

COFFEE BREAK / 16:00 - 16:30

SESSION C5 / 15:00 - 16:00 / HOTEL SYRENE

WORKSHOP: CIRCULAR ECONOMY & BIODIVERSITY

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

The loss of biodiversity is one of the most dramatic consequences of climate change and human impact. For several years, the importance of biodiversity for our planet has been underestimated, especially for its economic relevance on our extractive economies. Biodiversity provides several ecosystem services essential for human life such as food, materials, clean water, climate regulation, and many others. Therefore, a relationship of impact and/or dependency between biodiversity and economic activities exists. The CE, aiming to reduce the exploitation of non-renewable resources and the ever-increasing production of waste, can play a crucial role in reducing negative impacts on the environment and be one of the main drivers for the protection of biodiversity and ecosystems. *Full appetizer on the website*

S. Tessitore, F. Testa, N.M. Todaro, D. Tosi, V. di Iorio (IT)

Managing the business and biodiversity relationship: a systematic review

G. Felici, M.C. Lavagnolo (IT)

Economic valuation of ecosystem services in the waste management framework: case study of Aquanova

SESSION D5 / 15:00 - 16:00 / GLASS ROOM

WORKSHOP: CIRCULAR ECONOMY IN AGROINDUSTRY

Chair / *Presidente*: Marco Schiavon (IT)

Intensive crop and animal farming activities are important consumers of land, water resources and key contributors of global (methane and nitrous oxide) and local pollutants (nitrate, ammonia and aerosol), exerting adverse environmental impacts from small scale to global scale. Meanwhile, the agri-food sector is crucial to sustain human life. It is therefore mandatory to seek circular approaches, apply sustainable practices and environmental technologies to optimize the flow of resources, minimize the generation of waste and pollutants and, overall, decrease the environmental impacts of the agri-food sector. *Full appetizer available on the website*

I. Pölönen, J. Föhr, R. KC, S. Leppäkoski (FI)

Circular economy in farms – Testing farm-scale manure pasteurization device

M. Schiavon, G. Beggio, G. Concheri, V. Grossule, A. Sandon, A. Squartini, M.C. Lavagnolo (IT)

Agricultural waste pyrolysis and thermocomposting for renewable energy in a sustainable agri-food sector: the teapots project

COFFEE BREAK / 16:00 - 16:30

THURSDAY MAY 16

AFTERNOON

FOCUS SESSION III

CINEMA HALL / 10:30-11:20

CIRCULAR ECONOMY & ECONOMICS

Moderator:

Prof. Rainer Stegmann, *Hamburg University of Technology (DE)*

Panelists:

Prof. Stefan Salhofer, *BOKU University (AT)*

Prof. Andrea Zatti, *University of Pavia (IT)*

Benjamin Steuer, *Hong Kong University of Science and Technology (HK)*

Santiago Rosado Calderón, *Fundación Gómez Pardo (ES)*

Repair and recycling of materials and goods may be more costly than disposal and sometimes even than new products. The execution of Circular Economy activities is to a high degree in the hands of the private sector, i.e. the involved companies have to make profits.

Since recycled products are traded on the free market it can happen that it may not be economically viable to recycle a product (e.g. if the price for recycled paper is too low to cover the costs).

- Is that acceptable in view of the recycling goals that have to be reached?
- Does it make sense to interfere with the free market and subsidize recycling in order to avoid disposal of recycled materials?
- Which funds may be theoretically available?
- What other solutions may be used?

These are the main aspects that shall be discussed in this Focus Session.

Rainer Stegmann, *Hamburg University of Technology (DE)*

He was Professor from 1982 to 1990 at the Institute of Environmental Protection and from 1991 to 2008 Head of the Institute of Waste Management at the Technical University of Hamburg, Germany. He retired in March 2008. He is one of the prominent researchers in the field of waste management and provided in particular fundamental scientific contributions on sustainable landfilling, anaerobic digestion, biogas generation and control, treatment of contaminated soil.

He co-ordinated several international and national research projects, and was member of the environmental advisory board of Shanks, England. From 2009 until 2011 he was director of the R3C Research Center at the Nanyang University of Technology, Singapore, for which he is now scientific advisor. He is co-organiser of several national and international conferences and has published more than 300 scientific papers and several books. Since 2008 he has been the chairman of IW/WG (International Waste Working Group).

THURSDAY MAY 16

AFTERNOON

SESSION A6 / 17:30 - 18:30 / CINEMA HALL

COMMUNICATION AND EDUCATION

Chair / *Presidente*: Ian Williams (UK)

G. De Feo (IT)

Educating for a circular future: from kindergarten to higher education

I.D. Williams, T. J. Roberts, L.M. Zapata-Restrepo, M. Neophytou, A. Ktoris, A. Maragkidou, J.-P. Jalkanen (UK)

Communicating outputs, outcomes and impacts of waste-related research: the "EMERGE" case study

R.C.C.M. Micaroni, A.R. de Almeida, W.R. Rodrigues da Silva (BR)

Local waste management plans as a tool for waste management and prevention at University of Campinas (UNICAMP)

F. Da Porto, S. Gross, M.C. Lavagnolo (IT)

Circular Economy at the University of Padova

SESSION B6 / 17:30 - 18:30 / POLLIO HALL

CRITICAL AND STRATEGIC RAW MATERIALS

Chair / *Presidente*: Dongbei Yue (CN)

A. Piepoli, R. Pellegrino, P. Pontrandolfo (IT)

How does urban mining contribute mitigating critical raw material supply risks? Evidence from the waste management industry

A. Bonoli, A. Fiorucci (IT)

Critical Raw Materials recovery from Electrical Electronic Equipment Waste. An overview

S. Rosado, L. Camporro, L. Gullón, S. Oñate, L.F. Mazadiego, J. Llamas, Y. Moratilla, S. Lumbreras (ES)

Assessing the business potential, price volatility and supply chain challenges of metallic silicon in the European Union

D. Eheliyagoda, B. Veluri, G. Liu, D. Ramanujan (DK)

Multiregional perspectives of the global dysprosium demand and supply with technological transition

SESSION C6 / 17:30 - 18:30 / HOTEL SYRENE

WORKSHOP:

LANDFILL MINING

Chair / *Presidente*: Raffaello Cossu (IT)

Landfill Mining has gained increasing attention in recent years, due to its potential in circular economy strategies.

Several different approaches and different technologies for processing excavated waste are available. However, the economic feasibility of full scale applications is still the bottleneck for the valorization of landfilled waste as materials and/or energy and most reported case studies refer to the simple excavation and further deposit in new landfill sectors. Research projects are being carried out with the aim of developing cost effective technologies for the application of LFM for resource recovery.

Goal of this session is to present the state of the art in Landfill Mining research.

Introductory lectures:

J.H. Potgieter, C. Mahlangu (ZA)

Separating titanium and iron from an old Ferrovandium producer waste dump

R. Cossu (IT)

Landfill mining: investigations, technologies and opportunities for resources recovery

D. Sinnott, A.M. Sardo, N. Owen (UK)

Moving waste storage towards a circular economy: barriers and opportunities

Giovanni Perillo (IT)

Landfill Mining intervention on MSW sites

THURSDAY MAY 16

DISCOVER CAPRI

At the end of the conference day, treat yourself to a moment of relaxation and exploration in the heart of Capri!

A stroll through the streets of the historic center will lead you along picturesque cobblestone lanes and elegant boutiques, where you can find unique treasures and unforgettable souvenirs.

Take advantage of the late afternoon to enjoy a sunset aperitif, admiring the spectacle of the Faraglioni rising from the crystal-clear waters. An experience that combines the elegance of Capri with the magic of a special moment. Don't miss the opportunity to experience this wonder after an intense day of work

Our travel agency is available to organize guided tours of the island. Please contact Caprimed at the registration desk

Alla fine della giornata di convegno, concediti un momento di relax nel cuore di Capri! Un giro per le vie del centro storico ti condurrà tra pittoresche stradine lastricate e boutique eleganti, dove potrai trovare tesori unici e souvenir indimenticabili.

Approfitta del tardo pomeriggio per goderti un aperitivo al tramonto, ammirando lo spettacolo dei faraglioni che emergono dalle acque. Un'esperienza che unisce l'eleganza di Capri alla magia di un momento speciale.

Non perdere l'opportunità di vivere questa meraviglia dopo una giornata di lavoro intensa

La nostra agenzia di viaggio è disponibile per organizzare tour guidati dell'isola. Contatta Caprimed presso il banco registrazioni.



DAY 3 / FRIDAY
MAY 17

FRIDAY MAY 17

MORNING

SESSION A7 / 9:00 - 10:00 / CINEMA HALL

TERRITORIAL CASE STUDIES

Chair / *Presidente*: Benjamin Steuer (HK)

J. J. Stanković, I. Marjanović (RS)

Territorial resource efficiency in Circular Economy

K. Kawai, K. Nakagawa, N. Hatanaka, Y. Inoue, S. Matsumoto (JP)

How did a small town in Japan achieve the recycling rate of over 80%?

V. Kafarov, V. A. Lizcano-González, K. Mahkamov (CO)

Ecotourism and renewable energies as promoters of development in environmentally protected high mountain areas

T. J. Roberts, I. D. Williams (UK)

Implementing sustainable development in port-cities

SESSION B7 / 9:00 - 10:00 / POLLIO HALL

PARTICLES AND MICROPLASTICS FROM CIRCULAR ECONOMY

Chair / *Presidente*: Loretta Li (CA)

Z. Tariq, I. D. Williams, M. D. Hudson, A. B. Cundy, L. M. Zapata-Restrepo (UK)

Distinctive trails: reviewing markers for tyre and road wear particles

A. Ndiforngu, R. Cossu, M.C. Lavagnolo (IT)

Presence and fate of Microplastics in the Agriculture Soil System

A. Sivyer, Z. Tariq, G. J. Langley, I. D. Williams (UK)

Physical and chemical characterization of laboratory-generated tyre wear particles

M. Ferrante, G. Oliveri Conti (IT)

Microplastics diffusion and impact on human health

SESSION C7 / 9:00 - 10:00 / HOTEL SYRENE

WORKSHOP: RECOVERY & RECYCLING FROM PV PANELS

Chair / *Presidente*: Marco Tammaro (IT)

The exponential growth of cumulative global photovoltaic (PV) waste, driven by the market expansion of the last two decades, requires a focus on efficient End of Life (EoL) PV recycling methods. [Full appetizer available on the website.](#)

Introductory lectures:

F. Coustier, R. Riva, M. Pliquet, A. Saluel, J. Aimé, M. Tammaro, V. Piergrossi, L. Cafiero, S. Pucciarmati (FR)

EVERPV project: PV panels recycling using grinding process and IR equipment

E. Toluoso, F. Marzullo, A. Centurioni, F. Fattori, J.V. Barile (IT)

Closing the loop: forecasting end-of-life PV panel waste generation and building a circular value chain

COFFEE BREAK / 10:00 - 10:30

P. Cerchier, F. Miserocchi, L. Pezzato, F. Nisato, G. Tassinato, K. Brunelli, M. Dabalà (IT)

Photovoltaic panel recycling: tests in the pilot plant in Venice and silicon applications for ferroalloy production

M.L. Protopapa, G. Ansanelli, M. Pietrantonio, M. Tammaro (IT)

Research activity on PV waste recycling in ENEA

SESSION D7 / 9:00 - 10:00 / GLASS ROOM

WORKSHOP: INTERNET OF THINGS APPLICATION IN BIOREFINERIES

Chairs / *Presidenti*: Maria Rosa Di Cicco, Carmine Lubritto (IT)

The workshop aims to explore the intersection of cutting-edge technologies and biological systems in addressing pressing environmental and industrial challenges. Focused on the innovative landscape of biorefineries, our contributions will delve into two key aspects: the implementation of IoT-based photobioreactors and the pivotal role of extremophilic microalgae in recovering critical elements from waste streams.

Full appetizer available on the website.

Introductory lectures:

A. Marotta, G. Costanzo (IT)

Innovative approaches to environmental sustainability and circular economy: experiences and initiatives of Geos Environment Srl and T-Cycle Industries

A. Masiello, M.R. di Cicco, A. Spagnuolo, C. Vetromile, G. De Santo, A. Marotta, G. Costanzo, C. Lubritto (IT)

From waste to welfare: circular economy innovations in buffalo farming with recycled rubber mats

C. Ciniglia (IT):

Current state of the algae production industry in Europe: an emerging sector of the blue bioeconomy

G. Scione, C. Ciniglia, S. Papa (IT)

Use of *Galdieria sulphuraria* (Cyanidiophyceae, Rhodophyta) for wastewater phytodepuration

I. Galante, M. R. di Cicco, A. Spagnuolo, A. Masiello, D. Galetti, A. Marotta, G. Costanzo, C. Germinario, C. Ciniglia, C. Lubritto (IT)

Exploring sustainable cultivation of *Galdieria phlegrea* using urban wastewater: integration of IoT-enabled photobioreactor for biomass production and silicon-recovery applications

M. Iovinella, S.J. Davis, C. Ciniglia (IT)

Exploiting *Galdieria sulphuraria* for the bio-recovery of Rare Earth Elements (REEs) from electronic waste

COFFEE BREAK / 10:00 - 10:30

FRIDAY MAY 17

MORNING

SESSION A8 / 10:30 - 11:30 / CINEMA HALL

CIRCULAR ECONOMY IN DEVELOPING COUNTRIES

Chair / *Presidente*: Stefan Salhofer (AT)

R. Meira de Sousa Dutra, R. Ribeiro Siman (BR)

Assessment of the financial sustainability of solid waste management services in Brazilian municipalities

M. Yudistira Rahayu, N. Raihanah (IT)

Banyumas' local approach to zero waste: evaluating the efficiency of sustainable waste management strategies in developing countries

R. Schenck, H. Tyrrell, R. Niyobuhungiro (ZA)

Learnings from a disposable diaper collection programme in an African township: the 'Bright Bin' case study in Langa, Cape Town, South Africa

SESSION B8 / 10:30 - 11:30 / POLLIO HALL

WASTEWATER TREATMENT & CIRCULAR ECONOMY

Chair / *Presidente*: Sabrina Sorlini (IT)

G. Dolci, I. Crippa, M. Grosso, E. Ficara, L. Rigamonti (IT)

Coupling of wastewater treatment and algal biomass cultivation and valorisation: a Life Cycle Assessment

V. Grossule (IT)

LarWaR Process – BSF Larvae for Wastewater treatment and Resource recovery: Influence of larval density and solid support

A. Dotti, A. Basso Peressut, P. Gallo Stampino, G. Dotelli, S. Latorrata (IT)

Titanium dioxide and graphene oxide-based coatings for photocatalytic wastewater treatment

SESSION C8 / 10:30 - 11:30 / HOTEL SYRENE

BATTERIES

Chair / *Presidente*: Francesca Pagnanelli (IT)

C. Maucieri, S. Gross, M. Carraro (IT)

DESs for the extraction of metal ions from spent lithium-ion batteries (LIBs)

A. Barrera, C. Binet, I. Benabela, P. Supiot, C. Foissac, U. Maschke (FR)

Gel polymer electrolytes elaborated by Uv-Irradiation for the eco-design of Li-Ion batteries

F. Pagnanelli, P. Altimari, P.G. Schiavi, L. D'Annibale, A. Mancini, M. Colasanti, E. Moscardini, L. Toro, L. Baldassari, L. Toro (IT)

Li-ion battery recycling at pilot scale: demonstrating the re-synthesis route also for NMC-LFP mixed black mass

D.S. Premathilake, C. Milanese, M. Vaccari (IT)

Assessing the energy storage potential of Graphene Oxide synthesized from hydrometallurgically recovered Graphite from End-of-Life Electric Vehicle Lithium-Ion batteries (EoL EV LIBs)

SESSION D8 / 10:30 - 11:30 / GLASS ROOM

WORKSHOP:

WOOD RECYCLING

Chair / *Presidente*: Marco Schiavon (IT)

The workshop will explore the environmental impacts and the circularity of wooden products. The overall impacts of the life cycle of a wooden structure will be evaluated through a dynamic assessment of the carbon dioxide emissions, while circularity will be analysed by exploring the role of digital technologies and artificial intelligence in the reuse and upcycling of wood.

Introductory lectures:

N. Bertoldo, A. Salvi, G. Dotelli, P. Gallo Stampino, A. Bianchi, F. Frigerio, G. Scaccabarozzi, V. Arosio (IT)

Dynamic Life Cycle Assessment meets Circular Strategies: a wooden playground case study

G. Galluccio (IT)

Reclaimed wood as a computational material: technological design for circular economy in the digital age

FRIDAY MAY 17

AFTERNOON

SESSION A9 / 11:40 - 12:40 / CINEMA HALL

CIRCULAR ECONOMY IN INDUSTRIES

Chair / *Presidente*: Pierre Hennebert (FR)

S. Potgieter-Vermaak, B. Sibiya, S. Mafulul, C. Candeias, J.H. Potgieter, H. Mouri (GB)

Consequences of a non-circular economy approach in the mining industry

E. Giansante, G. Timelli, A. Fabrizi (IT)

Impact of chemical composition on hot tearing in secondary wrought aluminum alloys

G. Mancini, A. Luciano, L. Lombardi, D. Fino (IT)

Smart cities and industrial districts development through the Is-based waste-wastewater-energy nexus

N. Daza-Marquez, A. Guzmán, Y. Ávila, J. Abellán-García (CO)

Incorporating industrial wastes into mortar mix production: a step towards sustainable construction

SESSION B9 / 11:40 - 12:40 / POLLIO HALL

BIOPLASTICS

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

V. Poli, M.C. Lavagnolo (IT)

Is bioplastics a real sustainable alternative to conventional plastics? A focus on their biodegradability in different aquatic environments

I. Oliver, N. Martínez-Pérez, J.A. Conesa, A. Fullana (ES)

Bioplastic formulation effects on anaerobic digestion

V. Grossule, G. Oliveri Conti, P. Rapisarda, E. Pulvirenti, M. Ferrante, M.C. Lavagnolo (IT)

Treatment of food waste contaminated by starch-based bioplastic films using Black Soldier Fly larvae: formation and fate of biodegradable microplastics

N. Martínez-Pérez, I. Rodríguez-Pastor, J.C. García Quesada, I. Martín-Gullón (ES)

Reprocessing and mechanical recyclability for circular economy. Comparative study of TPS/PVA blends and other commercial biopolymers

LUNCH BREAK / 12:30 - 15:00

SESSION C9 / 11:40 - 12:40 / HOTEL SYRENE

WORKSHOP:

ENVIRONMENTAL SUSTAINABILITY OF ELECTRIC VEHICLES

Chair / *Presidente*: Mariachiara Zanetti (IT)

A. Accardo, G. Gentilucci, M. Golabchi, G. Dotelli, E. Spessa (IT)

Environmental sustainability assessment of an electrified light commercial vehicle

SESSION D9 / 11:40 - 12:40 / GLASS ROOM

WORKSHOP: COLLABORATIVE WASTE MANAGEMENT IN DEVELOPING COUNTRIES

Chair / *Presidente*: Catherina Schenck (ZA)

WM problems, in particular in underserved communities in developing countries are wicked problems. The workshop will be facilitated according to an adapted Emerging Transition Design (ETD) approach by Irwin (2018). Irwin (2018) developed the ETD approach to address "wicked" problems. Wicked problems are seen as systems problems which requires new and multiple problem solving approaches.

Irwin's Emerging Transition Design approach include the following:

- Vision: A clear visions is needed for transition. In this research the vision is to move towards a collaborative waste management system;
- Theories of Change: A variety of theories and methodologies are needed that explain the dynamics of change within complex systems;
- Mindset and Posture imply the development of open, collaborative and self-reflective mindsets and attitudes which is needed for a just transition;
- New Ways of Designing - which will arise out of the previous three areas.

During this workshop, roundtable discussions will be facilitated. The roundtable discussions will consist of two separate rounds. Firstly, a problem map will be created identifying political, economic, sociological, and technological barriers towards effective waste management in developing countries (with particular focus on low income resource constrained communities). The following question will be posed: What challenges do we face to deliver effective waste management service in low income (rural and urban) communities in DC's?

Secondly, the stakeholders will discuss the following question: How can collaborative, (participatory) processes achieve the more effective and efficient waste management? What should be the vision? The theory? The mindset? The design process?

LUNCH BREAK / 12:30 - 15:00

FRIDAY MAY 17

AFTERNOON

SESSION A10 / 15:00 - 16:00 / CINEMA HALL

ECONOMY & FINANCING IN CIRCULAR ECONOMY

Chair / *Presidente*: Žaneta Stasiškienė (LT)

B. Steuer (HK)

Hong Kong's circular economy on plastics: are the economics failing?

A. Zatti (IT)

Economic instruments for the circular economy transition: the (neglected) role of virgin materials and landfill taxation in Italy

S. Torvi, D. Delfrate, M. Colledani, M. Diani, F. Cortinovis (IT)

DeremCo: De and remanufacturing for Circular Economy investments in the composite Industry

SESSION B10 / 15:00 - 16:00 / POLLIO HALL

ROLE OF CIRCULAR ECONOMY IN FASHION INDUSTRY

Chair / *Presidente*: Andreas Bartl (AT)

L. Macchion (IT)

Circular economy in the fashion industry to foster the sustainable supply chains traceability

M.C. Lavagnolo (IT)

An example of industrial symbiosis in the textile industrial sector

P.M. Falcone (IT)

Exploring consumer behaviours and nudging for circular bio-economy development: a study on sustainable processing of food waste for the fashion industry

COFFEE BREAK / 16:00 - 16:30

SESSION C10 / 15:00 - 16:00 / HOTEL SYRENE

WORKSHOP:

ENVIRONMENTAL EDUCATION & COMMUNICATION

Chair / *Presidente*: Giovanni De Feo (IT)

This workshop aims to explore innovative and engaging approaches to environmental education and communication, with a focus on sustainability and circular economy principles. Prof. Giovanni De Feo, the creator of the Greenopoli project, will guide participants through the methodology and practices that have proven successful in over 600 environmental education sessions involving more than 80,000 students.

This workshop promises an interactive and informative session, offering participants practical insights into effective environmental education and communication strategies. Attendees will gain valuable tools and inspiration to incorporate innovative methods into their own educational initiatives.

AGENDA:

- Introduction to Greenopoli
- Key Themes and Initiatives
- Exploration of the primary themes covered in Greenopoli's educational sessions
- Greenopoli's Educational Methodology
- Green Rapping and the Use of Songs in Education
- Creative Approaches to Teaching

Q&A and Interactive Session:

- Open floor for questions and discussions
- Interactive session involving a live demonstration of the "tùttu-cià" technique

COFFEE BREAK / 16:00 - 16:30

FRIDAY MAY 17

AFTERNOON

FOCUS SESSION IV

CINEMA HALL / 16:30-17:30

SINKS IN CIRCULAR ECONOMY

Moderators:

Prof. Raffaello Cossu, *University of Padova (IT)*

Prof. Ian Williams, *University of Southampton (UK)*

Panelists:

Dr. Pierre Hennebert, *Consultant (FR)*

Other invited experts would be connected on line

In any Circular Economy strategy solid materials are generated (either as waste or as recycled products), which at the end of the story should find destination in the soil: recycled building materials in civil works (buildings, bridges, roads, embankments, etc.), compost in agriculture soil and residues from the recycling process in long term land repositories.

This accumulation of materials on soil, considering that the largest part of resources used for production of goods is coming from the soil (plants, ores, oil, etc.) could be called "Back to Earth" (BTE).

The Back to Earth is a process which needs to be managed in a sustainable way, assuring that the final BTE sites behave like a sink, where the material balance of contaminants is closed, and no further load (diffused or concentrated) is released to the environment.

Traditional landfilling is often proposed as a sink for Circular Economy but it is widely recognized that this system is unsustainable for several scientific reasons.

This Focus Session will discuss at which conditions a deposit of material on soil could be environmentally sustainable.

Raffaello Cossu, *University of Padova (IT)*

Raffaello Cossu, retired in 2018, is Emeritus Professor of Environmental Engineering at the University of Padova (IT). He is Chairman of "Sardinia" International Symposia on Waste Management and Sustainable Landfilling, and "Venice" International Symposia on Biomass and Waste to Energy. He carried out intensive scientific research on landfilling and designed more than 20 landfills in Italy and abroad. President of IWWG (International Waste Working Group) from 2004 to 2009. From 2009 to 2017 he was Editor in Chief of Waste Management, the international scientific journal published by Elsevier. Since 2018 he is Editor in Chief of DETRITUS, the IWWG multi-disciplinary journal for Waste Resources and Residues.

In 2017 he was recipient of the IWWG "A Life for Waste" Award. He has given a series of talks and presentations in conferences on Waste Management and Landfilling throughout the world. He has authored more than 200 articles and conference papers and co-edited five international books on waste management and landfilling technology, published by Academic Press, Elsevier, EF and Spon.

Ian Williams, *University of Southampton (UK)*

Professor of Applied Environmental Science and Associate Dean (Enterprise) in the Faculty of Engineering and the Environment at the University of Southampton, UK. He has an established track record in the field of environmental pollution and waste management. His work at Southampton has focused on pollution, waste- and carbon-related issues. Ian has published extensively in books and peer-reviewed journals as well as producing over 100 commercial project reports. He has a long track record of holding positions as an External Examiner for taught and research degrees, service on external bodies, sitting on the scientific and organizing committees of several international conferences, working on national and international task groups. Ian has received a number of awards for his research activities, including: the International Solid Waste Association Publication Award in 2016 and 2017, the Institution of Civil Engineers Baker Medal in 2010 and awards from the Chartered Institute of Wastes Management (Waste Regulation Award 2010, 2012/13, 2013/14 and 2014/15; James Jackson Award 2006, 2015/16, 2016/17; J.C. Dawes Award 2016).

FRIDAY MAY 17

SOCIAL EVENT

GALA DINNER & CLOSING PARTY / CENA DI GALA E PARTY FINALE
Restaurant "Al Capri", Via Roma 38, Capri / h. 20:00

As per tradition, to celebrate the closure of the conference, all delegates are invited to a formal dinner at the restaurant Al Capri (located in Via Roma 38) just a few steps away from the Piazzetta, with a spectacular panoramic view.

Dancing party at the end of the dinner!

A part of the price is included in the Symposium entrance fee. The remaining will be paid by each delegate and amounts to € 40,00 + VAT 22%.

Mandatory booking! Tickets **must be collected** from the Secretariat desk starting from Thursday.

Accompanying persons should purchase the full ticket (€ 90,00 + VAT 22%) from the secretariat.

Nella serata di venerdì, a conclusione dei lavori, tutti i partecipanti sono invitati a prendere parte alla cena di chiusura presso il ristorante Al Capri, situato a pochi metri dalla Piazzetta, in Via Roma 38, con una spettacolare vista panoramica sul mare.

Musica con DJ alla fine della cena fino a tarda notte!

Una parte del costo della cena è incluso nella quota d'iscrizione al Simposio, la restante parte è a carico dei partecipanti ed ammonta a € 40,00 + IVA 22%.

Prenotazione obbligatoria. I partecipanti **devono ritirare il biglietto presso il Banco Registros** a partire da giovedì.

Eventuali accompagnatori dovranno acquistare il biglietto intero (€ 90,00 + IVA 22%) al banco registrazioni.



POSTER SESSION
SESSIONE POSTER

POSTER SESSION

SESSIONE POSTER

Posters will be accessible to Symposium delegates at all times in digital format through our Symposium app. Three designated computers are always available in the foyer of the Congress Centre to browse through all posters (PPT files).

Delegates will be able to send questions to the authors via chat, Q&A or video call through the symposium app.

La sessione Poster sarà accessibile digitalmente per l'intera durata del Simposio, attraverso la app ufficiale del Simposio. Tre postazioni pc saranno sempre disponibili nel foyer del Centro Congressi per visualizzare tutti i poster in PPT, e inviare le proprie domande tramite la sezione Q&A e la chat della app.

Po1 / C. Álvarez-Alonso, M.D. Pérez-Murcia, N. Manrique, S. Sánchez Méndez, E. Martínez-Sabater, I. Irigoien, M. López, R. Moral, M.A. Bustamante (ES)
Exploring decentralized composting models: a case study of municipal waste management in Spain

Po2 / C. Álvarez-Alonso, M.A. Bustamante, N. Manrique, S. Sánchez Méndez, E. Martínez-Sabater, E. Agulló, I. Irigoien, M. López, R. Moral, I. Nogués, M.D. Pérez-Murcia (ES)
Management of municipal organic waste in a circular economy context: evaluation of the process and quality of compost produced in rural areas of the Valencian Community (Spain)

Po3 / M. Cambal Holosova, A. Estokova, A. Sicakova (SK)
Evaluating the suitability of secondary raw materials in cement composites for enhanced durability against sulfate attack

Po4 / D. Fico, D. Rizzo, F. Malinconico, C. Esposito Corcione (IT)
Innovative methodology for recycling organic and inorganic waste for the production of three-dimensional objects by means of 3D printing

Po5 / E. Gagliano, L. Moreschi, M. Gallo, A. Del Borghi (IT)
Development of new LCA-based indicator in the framework of WEF Nexus

Po6 / J. Havranová, S. Čerňanský (SK)
Fungal biosorption as promising tool for bioremoval of arsenic from aqueous solutions

Po7 / F. Cecchini, G. Mazziotti di Celso, K. Ayedi, V. Innocenzi, M. Prisciandaro (IT)
Integrated process scheme of wastewater treatment and desalination to encourage the reuse of water

Po8 / S. Ronconi, L. Di Paola, A. Vincenti, V. Piemonte, M. Capocelli, M. Prisciandaro (IT)
Biogas and leachate production in MSW landfill: experimental data and statistical modeling

P09 / *P.M.S.M. Rodrigues, J. Esteves da Silva (PT)*

Towards a Circular Economy: A comprehensive policy framework for packaging waste management in the European Union

P10 / *A. Accardo, G. Gentilucci, M. Golabchi, G. Dotelli, E. Spessa (IT)*

How important is vehicle recycling?

P11 / *A. Sharifi, G. Campo, A. Cerutti, B. Ruffino, M. Zanetti (IT)*

Biological methane production from hydrogen and carbon dioxide

P12 / *D. Karimian, Z. Smania, S. Gross, M. Carraro (IT)*

Valorizing textile wastes through the extraction of nanocellulose utilizing DEEP eutectic solvents

P13 / *M. Bullo, M. Ragazzi, F. Romagnoli, E.C. Rada (IT)*

An integrated research on modular gasification of municipal solid waste – LCA on Riga's cement factory

P14 / *D. Sica, B. Esposito, V. L'Abate, N. Raimo, S. Supino (IT)*

Impacts of circularity-oriented policies and measures on financial performance of agrifood organizations

P15 / *L. Macchion, M. Dieste, A. Galeazzo (IT)*

Understanding employee acceptance of digital technology towards a Sustainable Industry: a theoretical framework

POST SYMPOSIUM EVENT

SATURDAY 18 MAY

CAPRI BOAT TOUR / TOUR AROUND CAPRI ON TRADITIONAL GOZZO BOAT / h. 10:00 - 14:00

Once the Symposium is over, on Saturday morning discover Capri in a boat tour around the island to explore its beauties aboard a typical gozzo. During the tour, you will have the unmissable opportunity to admire the most wonderful and iconic sights of Capri, including the Faraglioni, the famous Blue Grotto, the lighthouse at Punta Carena and Villa Malaparte. Don't forget your bathing suit for a swim in the crystalline sea of Capri!

PROGRAMME

- Meeting point at 10:00 at the Piazzetta
- Arrival at Marina Grande (Port of Capri) by funicular
- Departure aboard the traditional gozzo boats (estimated duration 3/4 hours)
- Visit at the Blue Grotto
- Stop for diving and swimming
- Packed lunch provided by the organisers (Caprese sandwich, natural mineral water, 1 fruit, Caprese cake)
- Back to the Piazzetta by funicular

Price: please contact the travel agency

What's included: funicular tickets, boat ticket, packed lunch, entrance fee to the Blue Grotto.

To book your place please contact the travel agency in the congress center by Friday 17 May h. 13:00.



EVENTO POST SIMPOSIO

SABATO 18 MAGGIO

GITA IN BARCA / ESCURSIONE ALLA SCOPERTA DI CAPRI SU BARCHE TIPICHE / h. 10:00 - 14:00

A fine Simposio, al sabato mattina, esplora le bellezze dell'isola a bordo di un tipico gozzo caprese.

Nel corso dell'escursione, avrete l'imperdibile opportunità di ammirare da un punto di vista privilegiato gli scorci più belli di Capri, tra cui i Faraglioni, la famosa Grotta Azzurra, il Faro di Punta Carena e Villa Malaparte. Non dimenticate il costume da bagno per la sosta tuffi!

PROGRAMMA

- Appuntamento ore 10:00 alla Piazzetta della funicolare
- Arrivo a Marina Grande con la funicolare
- Partenza per il giro dell'isola con i gozzi (durata di circa 3/4 ore)
- Visita alla Grotta Azzurra
- Sosta per tuffo e nuotata
- Pranzo al sacco fornito dall'organizzazione (panino caprese, acqua minerale naturale, 1 frutto, dolce Capresina)
- Rientro con la funicolare alla Piazzetta di Capri

Costo: contattare l'agenzia di viaggio Caprimed

Il biglietto include: biglietti funicolare A/R, biglietto gozzo, pranzo al sacco, biglietto d'ingresso alla Grotta Azzurra.

Per prenotare il proprio posto si prega di contattare l'agenzia CapriMed al Centro Congressi entro venerdì 17 Maggio alle ore 13:00.





ORGANISERS
& PARTNERS /
ORGANIZZATORI
E PARTNER

ORGANISING SECRETARIAT SEGRETERIA OPERATIVA

EUROWASTE Srl

Eurowaste Srl is an event planning and management company initially established to handle scientific communication deriving from research work carried out in the field of environmental engineering at the University of Padua. Over time, the company has evolved into a service agency operating on a national and international level in the sector of scientific conferences and events.

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:

Event concept and design / Support to the Scientific Secretariat in defining the technical and scientific programme / Conception and organisation of social events / General assistance in initial start-up of the event / Budget Planning / Graphic design and conference material / Website development and management / Communication / Speaker and Author management / Venue sourcing and Catering / Logistic planning.



Eurowaste team with members from the University of Padova at Sardinia Symposium 2023

Eurowaste also manages a publishing house with the opportunity to produce and publish the scientific proceedings of the event (Cisa Publisher, pag. 72)

If you want to organize a conference, rely on us!

For further information please send an email at info@eurowaste.it

Eurowaste 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, Eurowaste 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 Eurowaste 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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Eurowaste gestisce anche la propria casa editrice, offrendo l'opportunità di produrre e pubblicare gli atti scientifici dell'evento (Cisa Publisher, pag. 72)

Se desideri organizzare una conferenza, affidati a noi!

Per informazioni e richieste di preventivo si prega di inviare un' email a: info@eurowaste.it

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SCIENTIFIC ORGANISATION ORGANIZZ. SCIENTIFICA

IWWG - INTERNATIONAL WASTE WORKING GROUP

The International Waste Working Group, founded in 2002 and registered as a no-profit organisation, serves as a forum for the scientific and professional community. The IWWG aims to provide an intellectual platform to encourage and support integrated and sustainable waste management and to promote practical scientific development in the field.

The group was conceived to provide a "home" for professionals and researchers, and give us a voice to be able to beneficially influence waste management and research.

The benefits of IWWG membership are the following:

- Subscription to IWWG official Journal Waste Management at a special discount price, both print subscription (135,00€) or print+electronic subscription (166,00€). Electronic subscription includes access to back numbers from 1995
- Individual subscription to Detritus, available only for IWWG members, at a special price (20 €). Please visit www.detritusjournal.com
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- Participation in the General Assembly (GA) meeting. The GA meets (at least) once a year
- Participation in all activities of IWWG including Task Groups

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The Green Symposium, a benchmark event in the South of Italy for green and circular economy themes, and Energy Med, a historic international fair dedicated to renewable energies and energy efficiency, are joining their stories to give life to a new format: Green Med, Expo & Symposium.

The experience, know-how, technological innovation, and best practices of the two events will create a comprehensive event that will showcase institutions and leading companies in the waste, water, and energy sectors, dedicated to the growth of a territory in constant transformation.

In partnership with the main national institutions, the Campania region, the Municipality of Naples, Anci Campania, the main consortia, and business associations, GMES will take place at the Mostra d'Oltremare from June 12th to 14th, 2024.

Green Symposium, da 5 anni evento di riferimento del Mezzogiorno sui temi della green e circular economy e Energy Med, fiera storica internazionale dedicata alle energie rinnovabili ed efficienza energetica, uniscono le loro storie per dare vita a un nuovo format: Green Med, Expo&Symposium.

L'esperienza, il know how, l'innovazione tecnologica, le best practices delle due manifestazioni daranno vita ad un evento di ampio respiro che sarà vetrina per istituzioni e aziende leader nei settori waste, water and energy e vocate alla crescita di un territorio in costanze trasformazione.

In partnership con le principali istituzioni nazionali, la regione Campania, Il Comune di Napoli, Anci Campania, i principali consorzi ed associazioni di imprese, il GMES si svolgerà alla Mostra d'Oltremare dal 12 al 14 giugno 2024.

Contacts / Contatti:

GREENMED EXPO & SYMPOSIUM
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www.greenmedsymposium.it



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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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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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Among the services aimed at enhancing business sustainability, ENEA has proposed the implementation of two industrial symbiosis tables within the regions of Southern Italy.

This initiative seeks to foster a cooperative systemic approach for the shared utilization of resources, such as by-products, energy waste, services, capabilities and skills. Industrial symbiosis, constituting a pivotal strategy within the circular economy framework, entails fostering collaboration among companies across diverse production sectors, to optimize resource reuse and waste reduction through knowledge and skill sharing. The overarching goal is to establish a network that catalyzes innovative strategies and competitive advantages, by facilitating resource exchanges, wherein waste generated by one company is repurposed as raw material by another. As a result, reliance on virgin raw materials and waste disposal decrease, thus facilitating the material loop closing and the reduction of emissions, energy consumption, and associated costs.

Key aspects of industrial symbiosis include fostering inter-company collaboration and capitalizing on synergy opportunities within a given geographical and economic context.

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