

## Conference Program

### Wednesday, June 11, 2025

**Venue: Consorcio Zona Franca de Vigo**

*Address: Rua Areal 46, 36201 Vigo. (Plus code: 67QM+HF Vigo) Capacity limited to 120 people*

13:00 h. Registration

13:45 h. Inauguration of the conference EGRWSE-2025

14:00 - 18:30 h. Short course on:

Sustainable and Resilient Engineering: Drivers, Metrics, Tools and Applications. Prof. K. R. Reddy (UIC, USA), Prof. C. Cameselle (UVigo, Spain), Dr. J. Adams, P.E. (ENGEO, California, USA), Jagadeesh Kumar Janga, Ph.D. Candidate (UIC, USA).

16:00 - 16:30 h. Coffee break

18:30 h. End-of-course cocktail

**(Please note that attendance is limited to 120 people)**

### Thursday, June 12, 2025

**Venue: School of Industrial Engineering, UVigo.**

*Address: University Campus, 36310 Vigo. (Plus code: 5896+78 Vigo)*

8:25 h. Bus leaves from City to Campus (Plus code: 67QJ+Q2 Vigo)

9:00 - 11:00 h. Registration

9:00 - 10:30 h. Opening session

10:30 h. Group photo

10:30 - 11:00 h. Coffee break + Poster session

11:00 - 12:45 h. Session 1

12:45 - 14:30 h. Lunch

14:30 - 16:00 h. Session 2

16:00 - 16:30 h. Coffee break + poster session

16:30 - 17:30 h. Session 3

17:30 h. Bus leaves from Campus to City

19:30 h. Guided tour of city (Plus code: 67QG+42 Vigo)

21:00 - 23:00 h. Get-together dinner (Náutico de Vigo, Plus code: 67RG+G4 Vigo)

### Friday, June 13, 2025

**School of Industrial Engineering, UVigo.**

*Address: University Campus, 36310 Vigo. (Plus code: 5896+78 Vigo)*

8:25 h. Bus leaves from City to Campus (Plus code: 67QJ+Q2 Vigo)

9:00 - 11:00 h. Registration

9:00 - 10:30 h. Session 4

10:30 - 11:00 h. Coffee break + Poster session

11:00 - 12:45 h. Session 5

12:45 - 14:30 h. Lunch

14:30 - 16:00 h. Session 6

16:00 - 16:30 h. Coffee break + poster session

16:30 - 17:30 h. Conference closing

17:30 h. Bus leaves from Campus to City

19:00 h. Bus leaves for conference dinner (Plus code: 67QJ+Q2 Vigo)

23:59 h. Estimated return to Vigo city center from conference dinner

### Saturday, June 14, 2025

*Meeting point: Estación de Ría, 36201 Vigo. (Plus code: 67RF+7H Vigo)*

10:30 h. Departure for technical visit

Visit to a natural park as an example of sustainable management of natural spaces

17:00 h. Return from technical visit

## Conference Program

Wednesday, 11 June 2025	Thursday, 12 June 2025	Friday, 13 June 2025	Saturday, 14 June 2025
	8:25 Bus from City to Campus	8:25 Bus from City to Campus	
	Registration	Session 4 (9:00-10:30)	
	Opening Session (9:00-10:30)	Session 4 (9:00-10:30)	
	Coffee/Poster Session (10:30 – 11:00)	Coffee/Poster Session (10:30 – 11:00)	
	Session 1 (11:00 – 12:45)	Session 5 (11:00 – 12:45)	
Capacity limited to 120 people			
Registration (13:00)	Lunch (12:45 – 14:30)	Lunch (12:45 – 14:30)	
Inauguration (13:45)			
Short Course on Sustainable and Resilient Engineering (14:00-16:00)	Session 2 (14:30 – 16:00)	Session 6 (14:30 – 16:00)	
Coffee break (16:00)	Coffee/Poster Session (16:00 – 16:30)	Coffee/Poster Session (16:00 – 16:30)	
Short Course (16:30 – 18:30)	Session 3 (16:30 – 17:30)	Conference Closure (16:30 – 17:30)	
Cocktail (18:30)	17:30 Bus from Campus to City	17:30 Bus from Campus to City	
Capacity limited to 120 people	19:30 Guided tour of City (1.5 h)	19:00 Bus to Conference Dinner	
	Get-together Dinner (21:00-23:00)	Conference Dinner (20:00-23:30)	
			Technical Tour (10:30 – 17:00)

(All content in the conference program may be subject to change)

## Conference Program

June 12	<b>Venue:</b> School of Industrial Engineering, UVigo	
9:00-11:00	Registration	
9:00-10:30	<b>Opening session</b> Claudio Cameselle & Susana Gouveia (Conference Organizers) Manuel Joaquín Reigosa Roger (UVigo Rector) José Fariña (Director of the School of Industrial Engineering) Krishna Reddy and Arvind Agnihotri (Conference Chairs)	
	<b>Keynote lecture:</b> Krishna Reddy (UIC) <b>Invited lecture:</b> Angel Antelo (Agilent Technologies)	
10:30	Group photo	
10:30-11:00	Coffee break / Poster session	
11:00-12:45	<b>Session 1</b>	
	Room A <b>Geoenvironmental Pollution Control</b> Chair: Krishna R. Reddy <b>Invited lecture:</b> D. N. Singh <b>Invited lecture:</b> Nicolo Guarena 5 oral presentations and discussion	Room B <b>Sustainable and Resilient Practices</b> Co-chairs: Antonio Thome, Igor Petrovic <b>Keynote lecture:</b> Helena Fernandes 6 oral presentations and discussion
	Room C <b>Solid Waste and Circular Economy</b> Co-chairs: Alicia Paz, Vesna Zalar Serjun 9 oral presentations and discussion	Room D <b>Sustainable Geo-Infrastructure</b> Co-chairs: Ivan P. Damians, Irem Z. Yildirim 9 oral presentations and discussion
	Lunch	
14:30-16:00	<b>Session 2</b>	
	Room A <b>Solid Waste and Circular Economy</b> Chair: Arvind K Agnihotri <b>Keynote lecture:</b> Alicia Paz <b>Invited lecture:</b> Jana Font 3 oral presentations and discussion	Room B <b>Biotechnologies/Nature-Based Solutions</b> Co-chairs: Laura Romero, J. M. Dominguez <b>Invited lecture:</b> Madhavi Latha Gali <b>Invited lecture:</b> Ahmed Benamar 4 oral presentations and discussion
	Room C <b>Geoenvironmental Pollution Control</b> Co-chairs: D. N. Singh, Primož Pavšič 8 oral presentations and discussion	Room D <b>Solid Waste and Circular Economy</b> Co-chairs: Paulo Coelho, Nuno Muñoz 8 oral presentations and discussion
	Coffee break / Poster session	
16:30-17:30	<b>Session 3</b>	
	Room A <b>Sustainable Geo-Infrastructure</b> Chair: Thyagaraj T <b>Keynote lecture:</b> A. K. Agnihotri <b>Invited lecture:</b> Castorina Silva Vieira Discussion	Room B <b>Sustainable and Resilient Practices</b> Chair: Ahmed Benamar <b>Invited lecture:</b> Antonio Thome <b>Invited lecture:</b> Ivan P. Damians 1 oral presentation and discussion
	Room C <b>Geotechnics for Renewable Energy</b> Co-chairs: Y. Yukselen-Aksoy, Y. Kurimoto 5 oral presentations and discussion	Room D <b>Biotechnologies/Nature-Based Solutions</b> Co-chairs: G. Madhavi Latha, H. Fernandes 5 oral presentations and discussion

## Conference Program

June 13	Venue: School of Industrial Engineering, UVigo	
9:00-11:00	Registration	
9:00-10:30	<b>Session 4</b>	
	Room A <b>Geoenvironmental Pollution Control</b> Chair: Vidya Bhushan Maji <b>Keynote lecture:</b> Chandresh Solanki <b>Invited lecture:</b> Arvin Farid 3 oral presentations and discussion	Room B <b>Solid Waste and Circular Economy</b> Chair: Milind Khire <b>Invited lecture:</b> António Roque <b>Invited lecture:</b> Oznur Karaca 4 oral presentations and discussion
	Room C <b>Sustainable Geo-Infrastructure</b> Co-chairs: H. B. Rao, Pabitra R. Maiti, 8 oral presentations and discussion	Room D <b>Solid Waste and Circular Economy</b> Co-chairs: Eva Rodil, Fei Jin 8 oral presentations and discussion
	10:30-11:00 Coffee break / Poster session	
11:00-12:45	<b>Session 5</b>	
	Room A <b>Solid Waste and Circular Economy</b> Co-chairs: António J. Roque, J. M. Salgado <b>Invited lecture:</b> Milind Khire <b>Invited lecture:</b> A. M. Pérez-Lafuente 5 oral presentations and discussion	Room B <b>Sustainable Geo-Infrastructure</b> Co-chairs: Satyajit Patel, Dali N. Arnepalli <b>Invited lecture:</b> Hanumantha Rao 7 oral presentations and discussion
	Room C <b>Geoenvironmental Pollution Control</b> Co-chairs: Nicolò Guarena, Wolfgang Wehr 9 oral presentations and discussion	Room D <b>Sustainable and Resilient Practices</b> Co-chairs: Junboun Park, Arvin Farid 9 oral presentations and discussion
	12:45-14:30 Lunch	
14:30-16:00	<b>Session 6</b>	
	Room A <b>Workshop on Scientific Publishing</b> Swati Meherishi (Springer Nature)	Room B <b>Environmental Geotechnics for Climate Change</b> Chair: Chandresh H. Solanki <b>Invited lecture:</b> Junboun Park 4 oral presentations and discussion
	Room C <b>Geotechnics for Renewable Energy and Sustainable Practices</b> Co-chairs: Ehsan Ghazanfari, Oznur Karaca <b>Invited lecture:</b> Yeliz Yukselen-Aksoy 4 oral presentations and discussion	Room D <b>Sustainable and Resilient Practices</b> Co-chairs: Supriya Mohanty, Amit K Nayak <b>Keynote lecture:</b> Magdalena Vaverková 3 oral presentations and discussion
	16:00-16:30 Coffee break / Poster session	
16:30-17:30	<b>Closing ceremony</b> Claudio Cameselle & Susana Gouveia (Conference organizers) Krishna Reddy and Arvind. Agnihotri (Conference chairs) Chandresh Solanki: EGRWSE-2026 announcement Participants comments	

## Conference Program

### Opening Session

- 9:30 **Keynote.** Urban Flooding and Stormwater Pollution Problems Under Changing Climate: Sustainable and Resilient Solutions  
Krishna R. Reddy, Banuchandra Nagaraja
- 10:00 **Invited lecture.** Quantifying PFAS in Water According to the Latest EU Regulations  
Angel Antelo

### Session 1. Room A. Geoenvironmental Pollution Control

- 11:00 **Invited lecture.** Managing Industrial & Municipal Wastes: Challenges, Threats and Opportunities  
Prithvendra Singh, Surender Singh, Devendra Narain Singh
- 11:20 **Invited lecture.** Conversion of calcium bentonite to sodium bentonite through dialysis  
Nicolò Guarena, Francesco Mazzieri, Andrea Dominijanni, Evelina Fratalocchi, Mario Manassero
- 11:40 Modelling of electrokinetic soil treatments. Verification cases  
Rubén López-Vizcaíno, Adrián López Sánchez-Migallón, Laura Asensio, Xiaojuan Yang, V Navarro, Ángel Yustres
- 11:50 DAT file For Geochemical Modelling (DAT4GM): A Python tool to provide reactive transport models for multiphysics platforms  
Adrián López Sánchez-Migallón, Rubén López-Vizcaíno, Xiaojuan Yang, V Navarro, Ángel Yustres
- 12:00 An Investigation of Suction Behavior of Zeolite-Bentonite Mixtures with Hyprop and Filter Paper Methods  
Sukran Gizem Alpaydin, Esra Güneri, Ceren Ercan, Yeliz Yukselen-Aksoy
- 12:10 Comparison of SiteWise and SimaPro for Sustainability Assessment of Remediation Alternatives  
Banuchandra Nagaraja, Krishna R. Reddy
- 12:20 Mechanical and durability study of fly ash-based geopolymer bricks without fillers  
Sher Bahadur Singh, Pabitra Ranjan Maiti, Supriya Mohanty

### Session 1. Room B. Sustainable and Resilient Practices

- 11:00 **Keynote.** Biotechnological valorization of underutilized biomasses to produce sustainable animal feeds  
Helena Fernandes, Nuno Muñoz-Seijas, Francisco Manuel Soto Beltrán, José Manuel Salgado, Borja Fernández, Manuel Domínguez, Manuel Domínguez
- 11:30 The Role of Mathematics in Environmental Sustainability  
Lino Alvarez-Vazquez, Néstor García-Chan, Aurea Martinez, Miguel E. Vázquez-Méndez
- 11:40 Recycled Glass Powder Based Geopolymers for Soil Stabilization  
Esma Rahat, Tugba Eskisar
- 11:50 Sustainable treatment of dredged sediments using waste-based binders: fly ash and eggshell lime  
Muhammad Khizar Khan, Marta Di Sante, Francesco Mazzieri, Evelina Fratalocchi
- 12:00 Experimental Assessment of Renewable Diesel (HVO) for Decarbonisation: Emissions, Consumption, and Sustainability Insights



Lara Febrero-Garrido, Antón Cacabelos-Reyes, André Louis Boehman, Carlos Pérez Collazo, Arturo González-Gil, Arturo González-Gil

- 12:10 The role of dark stores in sustainable e-commerce: A literature review  
Iria González Romero, Mar Vazquez-Noguerol, Jesús Garcia-Arca, Jose Carlos Prado
- 12:20 Performance of Bagasse Ash on the Hardened Concrete Materials and Reinforced Concrete Structures: Experimental Study  
Neha Bhardwaj, Dr Senthil Kasilingam

### **Session 1. Room C. Solid Waste and Circular Economy**

- 11:00 MgO-Stabilized Foundry Sand: A Green Alternative for Construction Materials  
Basil Jaimon, Ranita Ray, Amisha Nair, Sreedeeep Sekharan, Rajan Choudhary
- 11:10 Safe and Sustainable by Design towards a circular economy in chemical sector  
Marcella Paula, Claudio Cameselle, Pablo Vicos, Germán Ferreira
- 11:20 Phosphorus Removal from Wastewater Using Carbonated Biochar/Steel Slag Composites  
Zongqiang Ren, Devin Sapsford, Fei Jin
- 11:30 Research on the Comprehensive Resource Utilization of Recycled Aggregates from Municipal Solid Waste Incineration Ash  
Songying Niu, Hongxin Chen
- 11:40 Use of residual materials in adsorption/tertiary treatment processes of industrial wastewater  
Jesus Rodríguez Iglesias, Carlos Menéndez Llamado, Lara Dos Santos Sánchez, Deva Rodríguez Jove, Laura Megido Fernández, Yolanda Fernández Nava, María Manuela Prieto González
- 11:50 Stacking Machine Learning Models for Predicting Biochar Properties from Agricultural Residues: A Data-Driven Approach for Sustainable Waste Valorization  
Yao Fu, Devin Sapsford, Fei Jin, Peter Cleall
- 12:00 Application of WGP as an eco-friendly alternative for cement in Concrete: A Review  
Arvindan Sivasuriyan, Eugeniusz Koda
- 12:10 Strength Enhancement of Landfill Fine Fractions for Foundation Applications A Numerical Study  
Sudeepta Malakar, Abhishek Kumar, Anil Kumar Mishra
- 12:20 Multicriteria Analysis as a decision making tool for carbon capture technologies in the shipping sector  
Xulia Placer, Aravind Purushothaman, Paraskevi Karka

### **Session 1. Room D. Sustainable Geo-Infrastructure**

- 11:00 Application of different binders for stabilization of expansive clays  
Svetlana Melentijevic, Sol López Andrés, Aitor Lopez Marcos
- 11:10 Pull out tests on Coal Mine Waste to assess suitability as non-conventional backfill for reinforced soil structures  
Padmavathi M, Sanjeeva P, Padmavathi Viswanadham
- 11:20 Performance of Electric Arc Furnaces Slag in Place of Cement on the Pavement Concrete Application Under the Impact Load  
Kavita Rani, Senthil Kasilingam
- 11:30 Experimental and Analytical Study of Piled Raft Foundations in Sandy Soil  
Vo Van Dau, Vo Phan, Le Linh, Truong Phat Nguyen, Vo Kim Ngan, Tran Van Tuan, Pham Huu Ha Giang



- 11:40 The Influence of Particle Size Distribution on Microbially Induced Calcite Precipitation performance  
Cristhiana Perdigao, Aydin Enez, Negin Amini, Lambert Brau, Susanga Costa
- 11:50 From waste to infrastructure: geotechnical and environmental insights from a full-scale embankment built with limestone powder waste  
José Luis Pastor Navarro, Erick Gutiérrez Villarroel, Miguel Cano, Adrian Riquelme Guill, Takenori Hino, Roberto Tomás Jover, Roberto Tomás Jover, Roberto Tomás Jover
- 12:00 Effect of the seating time on the filtration properties of needle-punched geotextiles  
Anna Markiewicz, Eugeniusz Koda, Przemysław Soszyński, Ada Skrońc
- 12:10 Life Cycle Assessment of CFA Pile Foundations: Environmental Benchmarking for Large-Scale Residential Construction  
André Vinícius Azevedo Borgatto, Juliana Vêras, Castorina Silva Vieira
- 12:20 Geosynthetic Encased Stone Columns in Geotechnical Engineering: Performance Insights and Applications  
Pravez Alam, Shailja Bawa

### **Session 2. Room A. Solid Waste and Circular Economy**

- 14:30 **Keynote.** Advancing Circular Economy Solutions for the Olive Oil Sector: Integrating Biotechnological and Engineering Advances for Olive Pomace Utilization  
Alicia Paz, Evangelos Topakas, Attilio Converti, Manuel Domínguez, Manuel Domínguez
- 15:00 **Invited lecture.** Valorisation of food chain waste through solid-state fermentation for biostimulant production for a sustainable agriculture  
Jana Font, Antoni Sánchez, Adriana Artola, Esther Molina-Peñate, Óscar Prado
- 15:20 Evaluation of Corrosive Characteristics and Unconfined Compressive Strength of Steel Slag  
Irem Zeynep Yildirim, Monica Prezzi
- 15:30 Developing a Cotton Decolorization Method: Driving Circularity in the Textile Industry  
Oscar Martinez-Rico, Angeles Domínguez, Begoña González, Begoña González
- 15:40 Selected physical and mechanical properties of combustion slag from Siekierki Power Plant  
Katarzyna Gabrys

### **Session 2. Room B. Biotechnologies/Nature-Based Solutions**

- 14:30 **Invited lecture.** Micro-meso-macro interactions in bio-cemented sands  
Madhavi Latha Gali, Geethu Thomas
- 14:50 **Invited lecture.** Sustainable remediation of sediment using furnace slag mixture  
Ahmed Benamar, Mohamed-Tahar Ammami, Ahmad Zein-eddin, Zulfiqar Ahmad
- 15:10 Sustainable Soil Stabilization Using Fly Ash, Biochar, and Polypropylene Fibers  
Nitin Sharma, Rupali Satavalekar
- 15:20 Biological degradation of high-density polyethylene microplastics by *Comamonas testosteroni*  
Bess Alicia Newrick, Amanda Laca, Adriana Laca
- 15:30 Biodegradation of Rhodamine B dye via vermicomposting: Advancing nature-based solutions for textile waste management  
Bikash Dhadumia, Satya Sundar Bhattacharya, Biswajit Paul
- 15:40 Kraft lignin: possibilities of applying circular economy in the wood sector  
Diego Moldes, Susana Gouveia, Mari Carmen Fernández-Costas, Cristian Bolaño-Losada, Daniel Filgueira, Nicolás Álvarez



### Session 2. Room C. Geoenvironmental Pollution Control

- 14:30 Volumetric Shrinkage Strain of Bioremediated Oil Contaminated Soil  
Musa Alhassan, Nik Norsyahariati Nik Daud
- 14:40 Suitability of an Abandoned Quarry for Red Mud Disposal at Dalla Mines, Uttar Pradesh, India: A Feasibility Study  
Ashish Gharpure
- 14:50 Numerical modelling of landfill gas emission through landfill covers based on computation fluid dynamics  
Prince Kumar, Sivakumar Babu GL, Lakshminarayana Rao
- 15:00 Influence of particle deposition morphology on solute transport in porous media: a CFD-DEM study  
Dong-Jiang Lv, Hong-Xin Chen
- 15:10 Interactions of Hydrophobic and Hydrophilic Microplastics with Kaolinite  
Nafisa Bello, Mojgan Hadi Mosleh, Mohammed Ahmad Syed, Majid Sedighi, Peyman Babakhani
- 15:20 Effect of Powdered Steel Slag, Fly Ash and Lime Mix on Hydro-mechanical Properties of Soil-bentonite Cutoff Walls  
Purimetla Sai Chenna Kesava Charyulu, Giridhar Rajesh Bande
- 15:30 Evaluating Contaminant Transport Parameters of Trace Metals in Reclaimed Landfill Materials: A Laboratory and Numerical Study  
Deepak Kumar Haritwal, G V Ramana, Manoj Datta, Pranjal Singh
- 15:40 Image-enabled Characterisation and Oxidation assessment of Microplastics in Soil-Like-Materials Obtained During Mining of Dumpsite  
Avinash Sajwan, Deepak Kumar Haritwal, G V Ramana

### Session 2. Room D. Solid Waste and Circular Economy

- 14:30 Enhancement of Compacted Clay Liners Using Tire Rubber Crumbs: A Sustainable Solution for Improved Crack Resistance  
Sandhiya C, Thyagaraj T
- 14:40 Utilizing Recycled Fines and Industrial By-products through geopolymerization as road construction material.  
Alok Bijalwan, Anil Kumar Mishra
- 14:50 Effect of foundry fines in improving the geotechnical properties of red soil for landfill liner application  
Tenkurala Srujana, Thyagaraj T
- 15:00 Wind speed and solar intensity measurement on a municipal solid waste landfill hill with truncated pyramid shape  
Emoke Imre, Péter Felker, Zsolt Hortobágyi, Peter Kádár, Balint Sinkovics, Zoltán Kapros, Delphin Kabey Mwinken, Akos Nemcsics, Gábor Mile, Agnes Balint, Tibor Goda, Csaba Kollar, Tamas Weidinger, Antal Ürmös
- 15:10 Application of Recycled Aggregates in Road Infrastructures – Rabo de Peixe Variant– Azores- Portugal  
Catarina Amaral, Ana Maria Malheiro, Maria Silva, Carlos Fraga
- 15:20 Durability study of mortar samples prepared with foundry slags  
Nuria Pereira Pinto, David Álvarez, Aránzazu Pintos, Belén Díaz, Belén Díaz, X. Ramón Nóvoa, X. Ramón Nóvoa
- 15:30 Assessment of Incineration Ash Properties for Sustainable Construction  
Vesna Zalar Serjun, Anton Meden, Romana Cerc Korošec, Marta Počkaj, Primož Oprčkal





- 15:40 Evaluation of Landfill Gas Potential in Indian Landfill Sites  
Davinder Singh, D. Raghavendher, Sanjeev Kumar

### **Session 3. Room A. Sustainable Geo-Infrastructure**

- 16:30 **Keynote.** Sustainable deployment of Industrial wastes to improve the load carrying capacity of granular soil  
Arvind Kumar Agnihotri
- 17:00 **Invited lecture.** Use of mixed recycled aggregates from construction and demolition waste in unbound pavement applications  
Castorina Silva Vieira, Patricia Pereira

### **Session 3. Room B. Sustainable and Resilient Practices**

- 16:30 **Invited lecture.** Contaminated Site Management and Sustainability Analysis Platform  
Antonio Thome, Adeli Braun, Caroline Visentin
- 16:50 **Invited lecture.** Exploring Sustainability Assessment of Geosynthetic-based solutions in Civil Engineering  
Ivan P. Damians
- 17:10 Thermo-Mechanical Treatment of Reclaimed Rubber and Landfill-Derived Mixed Plastics for Sustainable Development  
Prithvendra Singh, Devendra Narain Singh

### **Session 3. Room C. Geotechnics for Renewable Energy**

- 16:30 Measurement of Shear Strength Parameters of BMT waste: Triaxial CU test and angle of repose  
Igor Petrovic, Nikola Hrnčić, Nikola Kaniski
- 16:40 Laboratory Investigation of the Impact of Injected Fluid Temperature in Deep Geothermal Systems  
Brooke Lundrigan, Ehsan Ghazanfari
- 16:50 Possible use of CO<sub>2</sub> for Repurposing the Abandoned Oil and Gas Wells to Combat climate change and achieve NET ZERO  
Faakirah Rashid, Devendra Narain Singh
- 17:00 Analyzing the scope of the ideal gas hypothesis in the gas transport model  
V Navarro, Rubén López-Vizcaíno, Erik Anders Tengblad Garcia, Ángel Yustres
- 17:10 Impact of additives and elevated temperatures on the shrinkage behavior of compacted bentonite  
Emir Okucu, Yeliz Yukselen-Aksoy

### **Session 3. Room D. Biotechnologies/Nature-Based Solutions**

- 16:30 Efficacy of Vermicompost Tea and Xanthan Gum solutions as Flushing agents in Biodegrading and Removing Spent Lubricant Oil from Sandy Soils  
Mohammad Rakhodaei, Ikrema Hassan, Kyle Rogers, Laura Romero de Zeron
- 16:40 Variations in Mechanical Strength of Enzymatically Induced Calcite  
Preity Yadav, Dr. Amit Prasad, Dr. Uday Kala
- 16:50 Comparison of Antibiotic Efficacy of Gramicidin S-Biosurfactant Combined Formulations against *Staphylococcus aureus*



Ksenia Lvova, Sara Silvério, Ana Pereira, Cátia Pereira, Nuno da Silva, Lígia Rodrigues, José Manuel Cruz, Ana Belén Moldes

17:00 Influence of Bacterial Encapsulation on Urease Activity during Microbially Induced Calcite Precipitation

Renu Joshi, Pavan Kumar Bhukya, Dali Naidu Arnepalli, Vidya Bhushan Maji

17:10 Framework for Modelling Agricultural Soils: Agro-geotechniques Perspective

George Appiah-Kubi, Xiaohui Chen, Ana Heitor, Kai Wang

#### **Session 4. Room A. Geoenvironmental Pollution Control**

9:00 **Keynote.** Transforming Waste to Solution: Moringa Seed Cake Biochar for Lead-Contaminated Soil Remediation

Chandresh Solanki, Bhoomi Kamdar

9:30 **Invited lecture.** Air-water interface adsorption impact on PFAS transport through vadose zones

Arvin Farid, MD. Khorshed Alam, Krishna R. Reddy

9:50 Radon and CO<sub>2</sub> content in Puerto Naos after the volcanic eruption on the island of La Palma - recalculation with artificial intelligence

Wolfgang Wehr, Roger P. Frey

10:00 Use of AI-Powered technologies for Review of Environmental Regulations

Manuel Joy, Alexander Abraham

10:10 Influence of electrolyte concentration on electroosmotic permeability of variable charge soil

Min Yang, XiaoJuan Yang, Honglei Sun, Ángel Yustres, Rubén López-Vizcaíno

#### **Session 4. Room B. Solid Waste and Circular Economy**

9:00 **Invited lecture.** Construction of unbound granular layers using steel slag - Performance compared to natural reference material on a road in use

António José Roque, Antonio Gomes Correia, Eduardo Fortunato

9:20 **Invited lecture.** An Alternative Approach to Reusing Mine Waste in Underground Mines: CPB

Okan Yüksel, Oznur Karaca, Tugay Aktaş

9:40 Effect of particle size distribution on mechanical strength of tyre enhanced cemented rock fill

Mithushi Wickramasinghe, Bre-Anne Sainsbury, Susanga Costa

9:50 Utilisation of Industrial By-Products in Base Course of Flexible Pavements: A Resource Optimization Approach

Mohsin Qureshi, Mohammed Rumhi, Ghassan Al Kindi, Ali Al Shamakhi, Wadhah Tawfeeq, Osama Ragab Abdelaziz Ibrahim, Hajir Al-Handasi

10:00 Waste-to-Energy Incinerated Residues (WtEIR): Pros and Cons

Surender Singh, Prithvendra Singh, Devendra Narain Singh

10:10 Selective extraction sequence of polyphenols from winemaking waste based on solubility data

Iván Montenegro, Elena Gómez, Ángeles Domínguez, Begoña González

#### **Session 4. Room C. Sustainable Geo-Infrastructure**

9:00 Hydro-mechanical behaviour of bentonite-geopolymer mixtures

Alessandro Ziccarelli, Renato Maria Cosentini, Esthelyne Ngwenoh Agha, Guido Musso

- 9:10 Transforming Industrial Waste into Sustainable Roads: A Step Toward SDG-Driven Infrastructure  
Satyajit Patel, Hrushikesh Kedar
- 9:20 Study on Sustainable Cement Mortar with Activated Charcoal Powder and Fly Ash  
Rao P.N., Padmavathi Viswanadham
- 9:30 Impact of stakeholders' interest on sustainability assessment of geosynthetic reinforced soil structures  
Anibal Moncada, Ivan P. Damians, Sebastià Olivella, Richard J. Bathurst
- 9:40 Behavior Evaluation of Embankments Composed of Soft and Organic Soils Mixed with Red Clays in Field and Laboratory Tests  
Antonio Damasco Penna, Cleitton Pereira, Mariane Souza
- 9:50 The problem of coastal erosion on the Azores islands (Portugal)  
Ana Maria Malheiro, Paulo Amaral, Filipe Marques, Letícia Moniz, André Santos
- 10:00 The physical and mechanical properties of foundry and construction waste as subbase material  
Emir Okucu, Taylan Cem Aytekin, Nilhan Demirci, Alper Burak Karakus, Okan Onal, Ali Hakan Oren, Yeliz Yukselen-Aksoy
- 10:10 Numerical Analysis of Combined Piled Raft Foundation as a Sustainable Foundation Solution for High-Rise Structures  
Aman Garg, Vishwas Sawant, Khrawboklang Kharsyiemiiong

#### **Session 4. Room D. Solid Waste and Circular Economy**

- 9:00 Geotechnical properties of compacted tungsten tailings for potential use in transportation infrastructures  
Jandira Oliveira Domingos, João Pedro Oliveira, Luis Araújo Santos, Paulo Coelho
- 9:10 Variability of waste clay hydrogeotechnical properties, and practical consequences for use in hydraulic barriers  
Eivind Ånes, Chuangxin Lyu, Gudny Okkenhaug, Tae Heon Kim, Thomas Pabst
- 9:20 Characterisation of pectin extracted from orange waste with aqueous solutions of organic acids  
Bochra Benabed, Eva Rodil, Héctor Rodríguez
- 9:30 Geotechnical Characterization of Grout in Different Compositions for Extensometer Applications  
Hasan Firat Pulat, Simon Dehout, Anne-Catherine Dieudonné, Julia Gebert
- 9:40 Sustainable utilization of sandstone construction waste as paver block material  
Aravinda Kumar Vasu, Pradeep Kumar Dammala, Bhupendra Singh, Anuj Bind
- 9:50 Strength Improvement of Bio-Earth from Reclaimed Landfill Using Stone Column Installation Technique  
Premalatha Krishnamurthy, Priyadharshini Maniam Rajan
- 10:00 Applicability of Waste Marble Slurry-Desert Sand as a Crust to Mitigate Wind Erosion of Sand Dunes  
Sumaja Kolli, Ahsan Ul Haq, Pradeep Kumar Dammala, Krishna R. Reddy
- 10:10 The efficiency of waste ash in soil stabilization  
Chung Yee Kwok, Wei Li, Asen Liu

### Session 5. Room A. Solid Waste and Circular Economy

- 11:00 **Invited lecture.** Lab-Scale Assessment of Effect of Sodium Polyacrylate on the Shear Strength of Wet Coal Combustion Residuals  
Milind Khire
- 11:20 **Invited lecture.** Innovation Projects in Agroforestry Waste Valorization  
Ana Magdalena Pérez-Lafuente, Raquel Ledo
- 11:40 Determination of geotechnical properties of compacted iron mining tailings for reuse in earthworks  
Maria Eugenia Gimenez Boscov, Guilherme Lourenzi, Luis Santiago, Eduardo Terceiro
- 11:50 Compaction Behavior of Marginal Lateritic Soil modified with Different Shapes of Plastic Waste  
Ahmad Idris, Aminu Suleiman, Gambo Haruna Yunusa
- 12:00 Impact of Ca and Na bentonite on the consolidation behaviour of red mud  
Pramadhanatha Reddy Pocha, Ramakrishna Bag
- 12:10 Predicting Dry Density of Subgrades Stabilised with Agro-Industrial Byproducts: Comparison of Tree-based Ensembles and Genetic Programming  
Hamed Faizi, Abbas El-Zein
- 12:20 Short-Term Strength Gain in Foundry Sand-MgO Composite Under Temperature Curing with Varying MgO and Water Content  
Ranita Ray, Basil Jaimon, Amisha Nair, Sreedeeep Sekharan, Uttam Manna

### Session 5. Room B. Sustainable Geo-Infrastructure

- 11:00 **Invited lecture.** Assessment of Rainfall Influence on the Stability of Ash Dykes  
Jaswanth Reddy Banka, Goushya Begum, Kummari Sekhar, Hanumantha Rao Bendadi
- 11:20 Effect of the dry-wet cycle on the durability characteristics of carbonated and non-carbonated recycled soil  
Thang Bui Anh, Kimitoshi Hayano, To T. Phuong Anh
- 11:30 Investigating the Effect of Degree of Saturation on Surplus Soils Treated with Inorganic Waste-based Binders Under Different Compaction Energy  
Alula Kassa, Kimitoshi Hayano
- 11:40 Consolidation Behaviour of Soft Clay Under Different Drainage Conditions  
Parinith Ramakrishna, Thyagaraj T
- 11:50 Geoinfrastructural Sustainable Approach for Identifying Shallow Subsurface Sandwiched Layers through ERT and MASW Techniques  
Prabhakar Vishwakarma, Animesh Mandal
- 12:00 Desert Sand Stabilization through Waste Marble Slurry Powder-based Geopolymerization: Compressive Strength and Microstructural Characterization  
Anuj Bind, Sumaja Kolli, Pradeep Kumar Dammala, Hanumantha Rao Bendadi, Rajyalakshmi Garaga
- 12:10 Impact of wall-to-wall Connections on the Stability of Back-to-Back RRR-B Walls under a Dual High-Speed Railway line  
Azmach Lole Gebeyehu, Bappaditya Manna
- 12:20 Assessment of Drainage and Filtration Properties of Fly Ash Based Sand  
Subhash Namhata, Kummari Sekhar, Hanumantha Rao Bendadi

### Session 5. Room C. Geoenvironmental Pollution Control

- 11:00 Contaminant Transport in Sand-Bentonite Composite Landfill Liner: Effect of Sand Gradation  
Mahender Reddy R, Giridhar Rajesh Bande
- 11:10 Subsurface Permeability Profiling at an MSW Dumpsite: Insights from CPT and HPT  
Pranjal Singh, Deepak Kumar Haritwal, GV Ramana, Manoj Datta
- 11:20 Hydraulic Conductivity of Conventional Sodium Geosynthetic Clay Liners to Synthetic Coal Combustion Product Leachate  
Asena İrem Demir Süre, Nilhan Demirci, Ali Hakan Ören
- 11:30 Hydraulic conductivity of P-GCLs with different mass per unit area values against bauxite liquor  
Hüseyin Efe Kayrak, Taylan Cem Aytekin, Ali Hakan Ören
- 11:40 A Perspective on Emerging Issues of Microplastic Pollution in Western and Southern Waters of Hong Kong  
Shafeeqe ur Rehman, Chi Hung Tang
- 11:50 Development of alkali-activated materials from electric arc furnace slags for foundry mold applications  
Miguel Otero Sáenz de Lubiano, Lorena Freire, Carolina Ramos, Lucia Unamunzaga
- 12:00 Feasibility of Recycling Municipal Solid Waste Incineration Fine Bottom Ash to Stabilize Dredged Marine Deposits  
Chung Yee Kwok, Wei Li, Yanming Zhang
- 12:10 Effects of alternative electrolytes on the removal of hexavalent chromium from paint sludge by electrokinetic remediation  
Aicha Metali, Mounir Ziati, Claudio Cameselle, Susana Gouveia
- 12:20 An integrated approach to groundwater vulnerability assessment and monitoring at a reclaimed landfill site  
Anna Podlasek, Eugeniusz Koda, Piotr Streich, Wojciech Pietruszewski

### Session 5. Room D. Sustainable and Resilient Practices

- 11:00 The Role of Augmented Reality and Governance in Improving Labour Productivity for Building Inventories: Insights from the Binckhorst Area  
Juan Carlos Navares Vázquez, Clara García, Rizal Sebastian, Mario Villalba Ferreira, Danielle Strydom, Simon Duindam, Mark Lommen, Ana Sánchez Rodríguez, Pedro Arias, Jesus Balado
- 11:10 Sustainable and Resilient Steel Structures: A FEM-Based Analysis of Clamp Connections with IPE220 Profile  
Fernando Nunes Cavaleiro, Manuel Cabaleiro Núñez, Borja Conde Carnero, Yago Cruz
- 11:20 Advanced non-destructive techniques and digital tools for sustainable structural analysis and management  
Yago Cruz, Joel Cruz, J. Carlos Caamaño, Manuel Cabaleiro, Borja Conde, Belen Riveiro
- 11:30 Impacts of Nanoparticles Application on Human Health and Environment: A Critical Review  
Krishna Kant, Jayanti Munda, Amit Kumar Nayak, Supriya Mohanty
- 11:40 Influence of Sodium Sulfate Solution on the Behavior of Expansive Soil Treated with Carbide Lime  
Narmada N, Thyagaraj T
- 11:50 Preliminary Investigations on the Accurate Prediction of Daily Discharge in the Ravi River: A Case Study  
Jagdish Raj, Mahesh Patel

- 12:00 Utilization of Recycled Aggregates in the Development of Sustainable Fibre-Reinforced Concrete Blocks with Cementitious Materials  
Omo Yachang, Jackie Brahma
- 12:10 Behaviour of Expansive Soil Stabilised with Charcoal and Flyash for Pavement Subgrade Material  
Padmavathi Viswanadham, Rao P N
- 12:20 Artificial Intelligence-Driven Decision-Making Approach for Sustainable Prediction of Fire in Subsurface Engineering Environments  
Satyam Tiwari, Sarat Das

#### **Session 6. Room A**

- 14:30 Workshop on Scientific Publishing  
Swati Meherishi (Springer Nature)

#### **Session 6. Room B. Environmental Geotechnics for Climate Change**

- 14:30 **Invited lecture.** Hexavalent Chromium (Cr(VI)) Immobilization in Cement via Chemically Driven CO<sub>2</sub> Mineralization  
Junboun Park, Kian Cho
- 14:50 Data-Driven Surrogate Model-Based Optimization of Leachate Recirculation for Maximum Energy Recovery from Landfills  
Jagadeesh Kumar Janga, Krishna R. Reddy
- 15:00 Engineering Properties of Cement-treated Soil with Different Types of Biochar  
Yuhei Kurimoto, Yoshiharu Asaka
- 15:10 Gas transport in low permeability clay-based barriers  
Laura Gonzalez-Blanco, Enrique Romero
- 15:20 Electrical Impedance Spectroscopy for Monitoring Non-isothermal Processes During CO<sub>2</sub> Injection  
Yogendra Narayanan S, Devendra Narain Singh

#### **Session 6. Room C. Geotechnics for Renewable Energy and Sustainable Practices**

- 14:30 **Invited lecture.** Breakthrough Sustainable Energy: Energy Geo-structures  
Yeliz Yukselen-Aksoy
- 14:50 Effect of Molding Water Content and Curing Time on the Hydromechanical Behavior of Soils Stabilized with Ground-granulated Blast-furnace Slag  
Shabana Salih K, Vandana Sreedharan
- 15:00 Integrated Electrochemical Technologies for Wastewater Treatment and Soil Remediation: Tackling Contaminants of Emerging Concern and Pathogens  
Nazare Couto, Paula Guedes, Ana Rita Ferreira, Vanessa G. Correia, Raquel Carvalho, João Brinco, Alexandra Ribeiro, Eduardo Mateus
- 15:10 Strength Characteristics of Fiber Reinforced Kaolinite Clay Stabilized using Marble Dust  
Ashish Kishore, Hemant Chore, Vipendra Singh Jhinkwan, Aditya Ahirwar
- 15:20 Graphite Recovery and Synthesis of Graphene Derivatives from Spent Primary and Secondary Batteries  
Pratima Kumari, Sukha Ranjan Samadder
- 15:30 The use of hemp fibers as an additive in sand bentonite mixtures  
Şükrü Asım Kalaycı, Seda Durukan

### Session 6. Room D. Sustainable and Resilient Practices

- 14:30 **Keynote.** From Brownfields to Brightfields: The Benefits of Solar landfills on Closed Sites  
Eugeniusz Koda, Magdalena Daria Vaverková
- 15:00 Evaluation of the Efficiency of Mixture of Moringa Seed and Banana Peel Powder as a Coagulant in Wastewater Treatment (Batik Effluent as a Case Study)  
Adekunle Olorunlowo David, Julius Musyoka Ndambuki, Jacques Snyman, Williams Kehinde Kupolati, Mpho Muloiwa, Samuel Ayomikun Owolabi, Ajibola Toheeb Lakoja
- 15:10 Sugarcane Bagasse Ash and Waste Glass Powder Blended Ternary Concrete for Sustainable Infrastructure  
Navaneetha E, Rao P N, Bahurudeen A
- 15:20 Urban Local Body - Farmer Partnership for Sustainable Solid Waste Management and Organic Farming  
Kiran D.A., Pushkara S.V., Ramaraju H.K.
- 15:30 Determination of Filtration Parameters of Recycled Concrete Aggregate - Geotextile Systems under Different Conditions  
Mehmet Halil Çalim, Ayşegül Bayın Sariahmetoğlu, Asli Yalcin Dayioglu, Mustafa Hatipoglu, Sabriye Banu Ikizler
- 15:40 Sequential Leaching Characteristics of Fresh and Aged Electric Arc Furnace Steel Slag with Clayey Subgrades  
Bilal Korkmaz, Asli Yalcin Dayioglu, Mustafa Hatipoglu

### Poster Session

- Evaluation of modified culture media obtained from liquid and solid residual fractions of corn steep liquor, after biosurfactant and Gramicidin extraction, for *Lactobacillus pentosus* fermentation  
Noelia González Fernández, Ksenia Lvova, Guadalupe Bustos Vázquez, Alejandro López Prieto, Benita Pérez Cid, Xanel Vecino, José Manuel Cruz, Ana Belén Moldes
- Evaluation of microfiltration and ultrafiltration hollow fiber membranes for suspended solid removal from corn steep water prior to biosurfactant recovery  
Gabriel Figueira, Andrea Martínez-Arcos, José Manuel Cruz, Ana Belén Moldes, José Luis Cortina, Mònica Reig, Xanel Vecino
- The influence of failure pattern on the tensile strength of plant roots from *Salix* sp.  
Otim Gerald Innocent, Zhelezova Alena, Sorrentino Gianmario, Rocchi Irene, Trapp Stefan
- Applications of Microbial Cellulose: A Byproduct of the Kombucha Production Industry  
Susana Gouveia, Claudio Cameselle
- A comparison of the stripping capabilities of water-biobased solvents microemulsions as paint strippers with commercial solvents  
Santiago Urréjola-Madriñán, Angel Sanchez Bermúdez, Ana-María González-Sánchez, Mercedes Pardo-Clavijo, Clara Rodríguez-García
- Biochar as a promoter of the circular economy in environmental remediation  
Antón Puga, Ana Rita Alves, Cristina Soares, Cristina Delerue-Matos
- Merging tuneability and toxicity of Ionic Liquids for the removal of hydrophobic aromatic pollutants  
Fátima Moscoso Díaz, Marta Markiewicz, Stefan Stolte
- Analysis of Underseepage in the levee of the Danube River  
Edina Koch, Richard Ray, Mais Mayassah
- LCA of embankment construction with carbonated co-combustion fly ash  
Davor Kvočka, Marija Đurić, Vesna Zalar Serjun, Primož Pavšič, Primož Oprčkal





10. Hydro-Soil-Biota-Atmosphere Coupling Modelling: The study of porosity changes effect on stability of agriculture soils  
George Appiah-Kubi, Xiaohui Chen, Ana Heitor, Kai Wang
11. Geological factors responsible for the variations in radon exhalation rates across a building  
Lorena Gonzalez-Gil, Arturo González-Gil, Lara Febrero-Garrido, Jorge Feijoo, Mercedes Solla, Antón Cacabelos-Reyes
12. Assessment of Electrokinetic Treatment and Associated Health Risks of Metal-contaminated Sites  
Sonam Taneja, Anil Kumar Haritash, Oznur Karaca
13. Development of burning- and cement-free eco-efficient bricks using soils, wastes, and cassava wastewater  
Francisco Almeida Angelo, Gustavo Ferreira Simoes
14. An attempt to develop procedures for characterizing construction and demolition waste for application in gabion retaining structures  
Maria Clara Alves Ferreira Ramos, Gustavo Ferreira Simoes
15. Evaluating the presence of impurities and microplastics in amendments and digestates from organic wastes  
Bess Alicia Newrick, Adriana Laca, Amanda Laca, José Manuel González La Fuente, Laura Megido
16. Production of enzymatic cocktails by solid-state fermentation of marine discards  
Martín Cid Fernández, Aida Ochogavias, Alicia Paz, Manuel Domínguez
17. Evaluation of protein production by solid state fermentation of marine discards using *Rhizopus oligosporus* CECT 20169  
Aida Ochogavias, Martín Cid Fernández, Alicia Paz, Manuel Domínguez
18. Assessment of the potential reuse of tailings from past tungsten mining  
Joana Ribeiro, Filipa Almeida, Beatriz Silva
19. AutoML risk analysis for potential mineral enrichment areas  
Abraham Novas Verde, María Pazo, Margarida Antunes, Eduardo Giraldez, María Araújo
20. Applying green solvent extraction to obtain high-valued protein from adult insects (beetles)  
Francisco Manuel Soto Beltrán, Helena Fernandes, Nuno Muñoz-Seijas, Borja Fernandez, Jose Manuel Salgado, Manuel Domínguez
21. Use of insect frass to obtain high valued enzymes via solid-state fermentation  
Borja Fernández, Helena Fernandes, Nuno Muñoz-Seijas, Francisco Manuel Soto Beltrán, José Manuel Salgado, Manuel Domínguez
22. Foundry waste based geotechnical composite  
Marija Đurić, Alenka Sešek Pavlin, Primož Pavšič, Davor Kvočka
23. Management and impact of the disposal of used cooking oil on the sands of Copacabana beach, Rio de Janeiro, Brazil  
Rodrigo Leal, Glaucio Honório, Ana Ghislane van Elk, Gabriel Mendes, Ana Clara da Silva Coelho
24. Assessment of biosurfactant extracts obtained from Brewer's spent grain for oil dispersion applications  
N. Russo-Martínez, Ana B. Moldes, Xanel Vecino, Jose M. Cruz
25. Utilizing Coconut Waste in Construction: A sustainable Approach for a Circular Economy  
Maíta Rosa, Romildo Toledo Filho, Ana Ghislane van Elk
26. Stabilization of Municipal Solid Waste Reject Using Cement and GGBS  
Shivam Verma, Prashant Kumar, Bala Ramudu Paramkusam, Ankit Gupta
27. Inclined plane shear testing of interfaces between a recycled aggregate from construction and demolition waste and nonwoven geotextiles  
José Ricardo Carneiro, Maria de Lurdes Lopes



28. The use of incinerator bottom ash in road construction: an overview  
José Ricardo Carneiro, Maria de Lurdes Lopes
29. Electrical and mechanical properties of cementitious materials obtained from foundry slags and short carbon fiber.  
Nuria Pereira Pinto, David Álvarez González, Aránzazu Pintos, Javier García-Rey, Belén Díaz, X. Ramón Nóvoa
30. Succinic acid solutions to get pectin from orange inner peel: optimisation of extraction conditions  
Bochra Benabed, Eva Rodil, Héctor Rodríguez
31. Direct tension test of sand stabilized with ground granulated blast-furnace slag  
Tsutomu Namikawa, Kousuke Nakajima
32. Use of copolymer for soil stabilization of high embankment  
Atanas Zlatarov, Andrey Totsev, Grisha Ivanov
33. Prospects of decommissioned wind turbine blades as a structural stabilizing element of excavations and slopes - preliminary studies.  
Michal Jurek, Lidia Buda-Ożóg
34. Fabrication and testing of resilient geocells  
Aarya Krishna, Madhavi Latha Gali
35. Synergistic Effect of Cement-Fly Ash Stabilization and Fibre Reinforcement on Soil Strength  
Omo Yachang, Ajanta Kalita, Taku Muni
36. Removal of two azo dyes with different ionic natures by adsorption onto a hydrotalcite-type layered double hydroxide  
Santiago Urréjola-Madriñán, Lorena Gonzalez-Gil, Pedro Hidalgo, Rosa Devesa-Rey