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Editorial

Preface: The 5th International Conference on Advances in Environmental Engineering †

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† All proceeding papers published in this volume were presented at the 5th International Conference on Advances in Environmental Engineering, Ostrava, Czech Republic, 26–28 November 2025.

1. Introduction

The 5th International Conference on Advances in Environmental Engineering (AEE 2025) was proudly organized by the Faculty of Mining and Geology at VŠB-Technical University of Ostrava, Czech Republic, in partnership with the Faculty of Civil Engineering at the Technical University of Košice, Slovak Republic. The event, held in Ostrava from 26–28 November 2025, brought together more than 80 participants from four countries: Slovakia, the Czech Republic, Poland, and Indonesia, including PhD students and industry professionals. Building on the success of previous editions, this conference continued to foster collaboration between academic researchers and industry experts, facilitating the exchange of ideas, exploration of innovative solutions, and the development of a strong regional network in the field of environmental engineering.

The conference was held under auspices of the representatives of the faculties prof. Ing. Hana Staňková, Ph.D., the dean of the Faculty of Mining and Geology at the VŠB-Technical University of Ostrava, prof. Ing. Dušan Katunský, CSc., the Dean of the Faculty of Civil Engineering at Technical University of Košice, and doc. Ing. et Ing. František Kuda, CSc., the President of Czech Union of Civil Engineers.

From the numerous submissions received, 45 contributions were chosen for inclusion in the *Engineering Proceedings* volume. The organizing committee expresses deep gratitude to the dedicated efforts of the editorial board and the reviewers for their invaluable work in preparing this volume. Special thanks are also extended to all the authors for their cooperation and adherence to deadlines.

2. Conference Topics

The conference primarily concentrated on the broad spectrum of environmental engineering, encompassing various topics such as the following:

- Water and wastewater management;
- Water and sediment pollution control and remediation;
- Waste management;
- Soil degradation, conservation and remediation;

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- Landscape management;
- Sustainable building materials;
- Building Ecology;
- Environmental friendly building materials and technologies;
- Life cycle analysis of materials and constructions;
- Air pollution prevention;
- Indoor air quality;
- Environment urbanism and sustainable cities;
- Environmentally sustainable entrepreneurship;
- Solutions for climate change mitigation;
- Safety as a tool for sustainability.

The scientific presentations, including both lectures and posters, spanned a wide range of research areas. This edition provides a thorough overview of the latest trends in environmental engineering and tackles the challenges associated with achieving sustainability.

3. Scientific Committee

3.1. Chairs of the Conference

Professor Adriana Eštoková, serving as the conference chair and a full professor at the Faculty of Civil Engineering at the Technical University of Košice, Slovakia, is an expert in materials and environmental engineering. Her research primarily focuses on sustainable construction, particularly the creation of building materials from waste and secondary raw materials. She investigates their properties and assesses their environmental safety, including the presence of heavy metals, leachability, and radionuclide activity. Moreover, she studies the environmental effects of these materials within buildings using life cycle assessment (LCA) and evaluates their carbon footprint. Her research also addresses the longevity of materials exposed to aggressive conditions, such as bio-corrosion and chemical corrosion.

Co-chairperson Professor Vojtěch Václavik from VSB—Technical University of Ostrava, Czech Republic, is a specialist in environmental engineering, particularly in materials recycling, recovery, and water management. His research primarily focuses on the treatment and utilization of industrial by-products for building material production, and he maintains strong collaborations with industry professionals.

The other co-chairperson, Professor Magdaléna Bálintová, a full professor at the Faculty of Civil Engineering, Technical University of Košice, Slovakia, directs her research towards wastewater treatment, water and sediment quality, remediation techniques, heavy metal removal, and soil protection. She is actively involved in various professional associations, serves on the editorial boards of several journals, and contributes to scientific committees for both international and national conferences. Additionally, she is engaged in editing, guest editing, and peer reviewing for numerous respected scientific publications.

3.2. Members of the Scientific Committee

The scientific committee consisted of distinguished experts in the field of environmental engineering:

1. ANDRÁŠ Peter, Matej Bel University in Banská Bystrica, Slovakia;
2. BÁLINTOVÁ Magdaléna, Technical University of Košice, Slovakia;
3. CASTANHO Rui Alexandre, University of Johannesburg, Republic of South Africa;
4. DIMTER Sanja, University of Osijek, Croatia;
5. DOMOKOS Endre, University of Pannonia, Hungary;
6. DVORSKÝ Tomáš, VSB—Technical University of Ostrava, Czech Republic;
7. DYADYURA Konstiantyn, Sumy State University, Ukraine;

8. EISINAS Anatolijus, Kaunas University of Technology, Lithuania;
9. EŠTOKOVÁ Adriana, Technical University of Košice, Slovakia;
10. GAJDZIK Bozena, Silesian University of Technology, Poland;
11. HEVIÁNKOVÁ Silvie, Technical University of Ostrava, Czech Republic;
12. HLUŠTÍK Petr, Brno University of Technology, Czech Republic;
13. JUNÁKOVÁ Natália, Technical University of Košice, Slovakia;
14. KOT Sebastian, Czestochowa University, Poland;
15. KROČOVÁ Šárka, VSB—Technical University of Ostrava, Czech Republic;
16. KUDA František, VSB—Technical University of Ostrava, Czech Republic;
17. KUČEROVÁ Radmila, VSB—Technical University of Ostrava, Czech Republic;
18. LOUSADA Sergio António Neves, Universidade de Madeira, Portugal;
19. MESSINEO Antonio, University of Enna Kore, Italy;
20. MEYER Daniel Francois, University of Johannesburg, Republic of South Africa;
21. NGUYEN THI MAI LINH, Ton Duc Thang University, Vietnam;
22. PALOU Martin Tchingnabé, Slovak Academy of Sciences, Slovakia;
23. PANDIAN R Sudhakara, Vellore Institute of Technology, India;
24. PECIAR Peter, Slovak University of Technology in Bratislava, Slovakia;
25. PERTILE Eva, VSB—Technical University of Ostrava, Czech Republic;
26. PHAM ANH DUC, Ton Duc Thang University, Vietnam;
27. POKORNÝ Jiří, VSB—Technical University of Ostrava, Czech Republic;
28. RAK Janusz, Rzeszow University of Technology, Poland;
29. RIMEIKA Mindaugas, Vilnius Gediminas Technical University, Lithuania;
30. SAMEŠOVÁ Dagmar, Technical University of Zvolen, Slovakia;
31. SAHINKAYA Serkan, Nevsehir Haci Bektas Veli University, Turkey;
32. SOBOĽ Khrystyna, Lviv Polytechnic National University, Ukraine;
33. SVĚRÁK Tomáš, Brno University of Technology, Czech Republic;
34. ŠLEZINGR Miloslav, Mendel University, Czech Republic;
35. ŠTEVULOVÁ Nadežda, Technical University of Košice, Slovakia;
36. ŠTVERKOVÁ Hana, VSB—Technical University of Ostrava, Czech Republic;
37. TRUSOVA Ekaterina, Belarussian State Technological University, Belarus;
38. VÁCLAVÍK Vojtěch, VSB—Technical University of Ostrava, Czech Republic;
39. VATIN Nikolai, Peter the Great St. Petersburg Polytechnic University, Russia;
40. VOJTKOVÁ Hana, VSB—Technical University of Ostrava, Czech Republic;
41. VILČEKOVÁ Silvia, Technical University of Košice, Slovakia;
42. VILNITIS Martins, Riga Technical University, Latvia;
43. VOLKOV-HUSOVIC Tatjana, University of Belgrade, Serbia;
44. YU BO Wang, Hubei University of Technology, China;
45. ZABOROWSKI Tadeusz, Poznan Technical University, Poland.

4. Organizing Committee

4.1. Organizing Guarantees

The organizational responsibility for the conference was undertaken by representatives from the institutions involved in its planning: Associate Professor Tomáš Dvorský from VSB—Technical University of Ostrava, Czech Republic, and Associate Professor Natália Junáková from the Technical University of Košice, Slovakia.

Associate Professor Tomáš Dvorský works at the Faculty of Mining and Geology at VŠB—Technical University of Ostrava, where he focuses his research on the treatment and use of by-products and waste from industrial production in building materials. He actively cooperates with industrial partners in contractual research and the transfer of scientific results into practice. He is the author and co-author of several impactful publications,

utility models, and certified methodologies. He also serves as a reviewer and member of scientific and organizational committees of international conferences and editorial boards of scientific journals as a guest editor or reviewer.

Associate Professor Natália Junáková is an expert in environmental and material engineering. Her research is focused on the evaluation of erosion-transport and sedimentation processes in watersheds, analysis of physico-chemical properties of river and reservoir sediments and testing of their use as new components in building materials. The results of her research work have been published in more than hundred national and international journals and scientific conference proceedings. She has also actively participated in leading and solving of national and international research and educational projects. Additionally, she is engaged in editing and peer reviewing for numerous respected scientific publications.

4.2. Organizing Committee Members

1. Jan Halfar;
2. Kateřina Brožová;
3. Alice Valigůrová;
4. Katarína Harčárová;
5. Martin Jaš;
6. Alexandra Királyová.

5. Partners and Sponsors

The organizers would like to extend their sincere thanks to all the partners and sponsors who supported the AEE 2025 conference (Figure 1).



Figure 1. Partner and sponsor logos [1–9].

Conflicts of Interest: The authors declare no conflicts of interest.

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