

Preface

The civil engineering and environmental engineering fields continue to evolve rapidly, driven by imperatives of sustainability and innovation. The articles compiled in this special edition reflect the results of cutting-edge research and practical engineering decisions in domains of sustainable and high-performance building materials, geotechnical engineering and pollutant absorption technologies.

The first chapter, "Sustainable and High-Performance Building Materials", delves into the development, properties analysis and application of building materials that reduce environmental impact while enhancing the structural performance of buildings. The research presented here highlights novel approaches to integrating waste recycling and biomass, reducing carbon footprints, and leveraging advanced composites to meet the demands of modern construction.

The second chapter, "Geotechnical Engineering", addresses the complex challenges inherent in the internal erosion of gap-graded sands and using triaxial geogrid in reinforcing crushed rock base constructed on soft soil subgrade.

The final chapter, "Pollutants Absorption", examines strategies and technologies for mitigating the environmental impacts of anthropogenic activities. Focused on absorption mechanisms for pollutants, this chapter introduces effective materials and methodologies for cleaning water and soil, ensuring a healthier environment for future generations.

We hope this special edition will serve as a valuable resource for academics, professionals, and students seeking insights into the transformative advancements shaping our built and natural environments.