

Special Issue

Pavement Materials: Status, Development and Future

Message from the Guest Editors

This Special Issue invites authors to submit original research papers that reflect the current state and developmental trends of pavement materials, with a particular focus on their future in the context of sustainability and climate adaptation. It emphasizes sustainable solutions such as the use of recycled and alternative materials, bio-inspired zero-waste solutions, biopolymer modifications, nanotechnology, and innovative environmentally synergistic applications utilizing industrial waste. It covers trends including climate-adaptive materials capable of capturing CO₂, shape-memory polymers responding to temperature changes, low-temperature production technologies that reduce emissions, and AI/ML models for predicting the long-term performance of layers and pavements constructed from them. These innovations support the circular economy, minimize resource consumption, and enhance adaptation to climate change. The future of pavement materials points toward fully integrated, self-sufficient, and climate-adaptive systems that surpass today's sustainable solutions. We expect contributions with experimental data, numerical simulations, or field applications.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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