



Advanced Asphalt Pavement Materials and Design

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Message from the Guest Editors

Asphalt is a dark-brown to black, highly viscous, hydrocarbon produced from the distillation of petroleum residue. In hot mix asphalt (HMA), asphalt functions as a waterproof thermoplastic, and viscoelastic adhesive. By weight, asphalt generally accounts for between 4 and 8 percent of asphalt mixture and makes up about 25–30 percent of the cost of an HMA pavement structure, with changes depending upon the type and quantity. As one of the most widely used materials in pavement construction, asphalt has witnessed remarkable progress in recent decades. These achievements have significantly facilitated durability and service performance, thereby assisting humanity to reach sustainable pavement construction.

The primary aim of this Special Issue is to explore and share recent progress and novel trends in the theory and application of novel asphalt pavement materials and design. Original articles and reviews addressing innovative developments and valuable contributions to the advanced asphalt pavement design, material, characterization, construction, etc., are welcomed.





Editor-in-Chief

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Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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