Special Issue

Advances in Performance-Based Asphalt and Asphalt Mixtures

Message from the Guest Editors

Asphalt and asphalt mixtures are the dominant materials in modern pavements. Asphalt is fundamental to improving and renovating the transportation infrastructure, which is extensively employed in highways, streets, and airports. Asphalt pavements are subject to a combined impact generated by complex environmental factors and traffic loading. Advances in both research and industry have provided many novel materials, testing methods, and construction technologies related to asphalt and asphalt mixtures. Some representative examples include modified asphalt, warm-mix asphalt, recycled asphalt pavement, a balanced mix design, and so on. It is of paramount importance to better understand and enhance the properties of asphalt and asphalt mixtures in order to extend the surface life of pavements. A series of challenges remain to be addressed in asphalt material design, testing, construction, and field performance. Therefore, this Special Issue welcomes the submission of experimental, modeling, and in situ studies related to asphalt and asphalt mixtures. The articles presented in this Special Issue shall clearly identify their novelty and contribution to the field.

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Deadline for manuscript submissions

31 January 2026

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/183780

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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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