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Special Issue on
Smart and Resilient Transportation Infrastructure Systems 2024

CALL FOR PAPERS

The last two great revolutions, the Neolithic Revolution and the Industrial Revolution, caused a fundamental change in the relationships between societies, the world, and the surrounding environment. The status quo indicates that we are approaching another great change, therefore, to facilitate a sustainable transformation that aligns with the economic, political, and ideological elements of our societies, it is essential that we have a deliberate action plan to cope with any potential turbulence. In this context, the development of smart and resilient transportation infrastructure systems and materials is a crucial topic that must be considered. In the near future, we will deal with connected and autonomous systems, data mining and big data analytics, and transportation infrastructure resilience, with smart materials for energy harvesting, innovative smart composite materials for road and railway infrastructure systems, and groundbreaking concrete composites for resilient infrastructure systems. These new systems and materials will replace traditional means and methods and we need to be fully prepared for the transition.

The implementation of any new system comes with various challenges that can be alleviated using artificial intelligence (AI), machine learning, big data analytics, spontaneous Internet of Things (IoT) capabilities, and online asset management systems, and selecting the best methods to provide cost-effective resilient systems is critical. Likewise, the implementation of new materials comes with various challenges that can be alleviated using innovative and resilient construction methods and smart materials. Energy harvesting is a key technology to enable the IoT. However, finding cost-beneficial and suitable energy harvesting materials and innovative and resilient construction methods is a challenge for researchers and engineers.

In this Special Issue, we solicit high-quality research focused on state-of-the-art techniques and methods employed in resilient and smart infrastructure systems. Authors are invited to present original research and review articles that will stimulate the continuing efforts in this field. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

▶ Big data analytics in smart road and railway infrastructure systems, including data mining, machine learning, and AI
▶ Connected and autonomous vehicles and infrastructure systems
▶ Innovative smart composite materials for road and railway infrastructure, such as 3D printed composites or energy harvesting materials
▶ Non-destructive tests for resilience, such as infrastructure sensing and imaging
▶ Recent advances in sustainable and resilient road and railway infrastructure systems
▶ Smart infrastructure systems operation and control, including network monitoring, LiDAR, or radar

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=206512.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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