



Application of Intelligent Materials in Inspection, Repair and Reinforcement of Infrastructure

Guest Editors:

Dr. Xu Jiang

Department of Bridge
Engineering, Tongji University,
Shanghai 200092, China

Dr. Xuhong Qiang

Department of Building
Engineering, Tongji University,
Shanghai 200092, China

Deadline for manuscript
submissions:

20 July 2024

Message from the Guest Editors

Dear Colleagues,

Steel bridges often face great demands for strengthening or repairing during their service lives, especially due to fatigue and corrosion damages. Nowadays, intelligent materials such as shape-memory alloys, smart materials, and fiber-reinforced composites have great potential in the inspecting, repairing and upgrading of steel bridges, and in turn for the enhancement of their long-term performance. Taking Fe–Mn–Si alloys as an example, the martensitic transformation and its reverse transformation which produces considerable recovery stress (300~500 MPa), can be utilized as prestress for the local repairing of fatigue cracks in orthotropic steel bridge decks and also global upgrading of down-wrapped concrete beams. In this Special Issue, in comparison with traditional inspection and strengthening methods, mechanisms, techniques and applications of intelligent materials on the rehabilitation of steel bridges will be introduced and classified in detail.

Dr. Xu Jiang

Dr. Xuhong Qiang

Guest Editors





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo

Dipartimento di Fisica,
Politecnico di Milano, Piazza L.
da Vinci 32, 20133 Milano, Italy

Message from the Editor-in-Chief

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q2 (*Engineering, Multidisciplinary*) / CiteScore - Q1 (*General Engineering*)

Contact Us

Applied Sciences Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/applsci
applsci@mdpi.com
[X@Applsci](https://twitter.com/Applsci)