

Recent Scientific Developments in Steel Structure

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Message from the Guest Editors

Dear Colleagues,

Steel structures are widely used in construction around the world, from simple portal frames to skyscrapers. Steel has many advantages, including its durability and high strength-to-weight ratio. The behavior of steel structures is a complex phenomenon that has inspired a prodigious amount of research over the years. Steel structures are built in a multitude of shapes and sizes and are required to support many different types of loads. How steel structures respond to these loads has been the subject of much research since the 1800s.

This Special Issue seeks high-quality papers outlining the recent scientific developments in steel structures. Topics of interest include (but are not limited to):

- (a) Behavior of steel structures;
- (b) Behavior of concrete-filled steel tubular members;
- (c) Steel structures under extreme conditions (e.g. earthquakes, strong winds, fires and blasts, etc.);
- (d) Performance-based steel structures;
- (e) Life-cycle steel structures;
- (f) Fatigue of steel structures;
- (g) Sustainability in steel structures.



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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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