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Special Issue Reprint

Composite Materials for Civil Engineering Applications

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This Reprint collects cutting-edge research on the development and application of composite materials in civil engineering. The contributions highlight the exceptional potential of fiber-reinforced polymers (FRPs), geopolymers, and waste-enhanced composites to create more resilient, durable, and sustainable infrastructure. Through experimental and numerical investigations, the studies demonstrate how advanced composites can be engineered to enhance the dynamic performance and longevity of structures, improve the mechanical and environmental properties of cementitious materials, and modify soil behavior. The reported advances span key areas, including impact-resistant structural strengthening, interfacial bond behavior under harsh environments, the development of low-carbon geopolymer systems, and the innovative valorization of industrial by-products. Overall, this Reprint provides valuable insights and practical solutions for the design of next-generation civil engineering materials and structures, bridging the gap between materials science, structural mechanics, and practical implementation.

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