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Sommario/riassunto	This book deals with both mathematical modeling and experimental studies related to systems relevant for various civil engineering fields.

The book explores the intriguing effects of phenomena occurring at lower length scales on the behavior at higher scales, as the influence of polypropylene macro-fiber thickness in fiber-reinforced concrete mechanical strengths. Generally speaking, the book addresses several key topics, including artificial intelligence applied to the control and monitoring of construction site personnel, finite element models for endplate beam-to-column connections under various load conditions, random functionally graded micropolar beams, and many others. The book explores the design and study of microstructures aimed at increasing the toughness and durability of novel materials in building and construction, based also on the re-utilization of residues and wastes of metallurgical industry produces. In conclusion, the book highlights innovative approaches to various fields of civil engineering, including microstructures for enhanced mechanical properties, offering insights into design strategies.