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Sommario/riassunto	Microelectromechanical systems (MEMS) are microdevices or systems that integrate microsensors, microconverters, microactuators, micromechanical structures, and micropower sources. MEMS devices have a wide range of applications in biomedical, automotive, aerospace, and communications fields, among various others. The design, optimization, performance, and application of the devices are crucial to the development of modern technology. In terms of design, MEMS devices need to overcome various challenges, such as size constraints, material selection, and manufacturing processes, to achieve high integration and miniaturization. Optimizing the design and performance of MEMS devices is of great significance for improving system efficiency, reducing costs, and enhancing functionality, and it is one of the current research hotspots. The performance of MEMS devices involves sensitivity, stability, power consumption, and other aspects to meet the requirements of various applications. This Special Issue explores key issues in the design, optimization, performance, and application of MEMS devices in order to provide a reference for research and development in related fields.