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Nota di contenuto	Introduction -- Theory for Thermal Wave Control: Transformation Complex Thermotics -- Theory for Thermoelectric Effect Control: Transformation Nonlinear Thermoelectricity -- Theory for Zero-Index Conductive Cloaks: Constant-Temperature Scheme -- Theory for Hele-Shaw Convective Cloaks: Bilayer scheme -- Theory for Coupled Thermoelectric Metamaterials: Bilayer Scheme.
Sommario/riassunto	This open access book describes the theory of transformation thermotics and its extended theories for the active control of macroscopic thermal phenomena of artificial systems, which is in sharp contrast to classical thermodynamics comprising the four thermodynamic laws for the passive description of macroscopic thermal phenomena of natural systems. This monograph consists of two parts, i.e., inside and outside metamaterials, and covers the basic concepts and mathematical methods, which are necessary to understand the thermal problems extensively investigated in physics, but also in other disciplines of engineering and materials. The analyses rely on models solved by analytical techniques accompanied by computer simulations and laboratory experiments. This monograph can not only be a bridge linking three first-class disciplines, i.e., physics, thermophysics, and materials science, but also contribute to interdisciplinary development.

