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Descrizione fisica	1 online resource (163 pages)
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Nota di contenuto	Introduction -- Energy bands in topological insulators -- Magnetic doping and ferromagnetic proximity effects -- Electrodynamics of topological phase -- Thin TI films -- Rashba interaction in topological insulators -- Spin-electron coupling in topological phase -- Dirac fermions mediated indirect exchange interaction.
Sommario/riassunto	This book serves as a brief introduction to topological insulator physics and device applications. Particular attention is paid to the indirect exchange interaction mediated by near surface Dirac fermions and the spin texture this interaction favors. Along with useful information on semiconductor material systems, the book provides a theoretical background for most common concepts of TI physics. Readers will benefit from up to date information and methods needed to start working in TI physics, theory, experiment and device applications. Discusses inter-spin interaction via massless and massive Dirac excitations; Includes coverage of near-surface spin texture of the magnetic atoms as related to their mutual positions as well to their positions with respect to top and bottom surfaces in thin TI film; Describes non-RKKY oscillating inter-spin interaction as a signature of the topological state; Explains the origin of the giant Rashba interaction

at quantum phase transition in TI-conventional semiconductors.
