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Nota di contenuto	Introduction -- Experimental Methods -- Quantum Hall physics in magnetic topological insulators -- Spintronic phenomena in magnetic/nonmagnetic topological insulator heterostructures -- Transport property of topological insulator/superconductor interface -- Summary -- Appendix.
Sommario/riassunto	This book reveals unique transport phenomena and functionalities in topological insulators coupled with magnetism and superconductivity. Topological insulators are a recently discovered class of materials that possess a spin-momentum-locked surface state. Their exotic spin texture makes them an exciting platform for investigating emergent phenomena, especially when coupled with magnetism or superconductivity. Focusing on the strong correlation between electricity and magnetism in magnetic topological insulators, the author presents original findings on current-direction-dependent nonreciprocal resistance, current-induced magnetization reversal and chiral edge conduction at the domain wall. In addition, he demonstrates how the coupling between superconductivity and topological surface state lead to substantial nonreciprocal resistance. The author also elucidates the origins of these phenomena and deepens readers' understanding of the topologically nontrivial electronic state. The book includes several works which are published in top journals and were selected for the President's Award by the University of Tokyo and for

the Ikushi Prize, awarded to distinguished Ph.D. students in Japan.
