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Dan Li* (li1863@purdue.edu), 150 N University St, West Lafayette, IN 47907. *Index theory of topological insulators.*

Topological insulators are new materials observed in nature that behave like insulators in the bulk but have conducting edge states on the boundary. In fact, time reversal invariant topological insulators can be characterized by a \mathbb{Z}_2 -valued invariant, which will be understood in the framework of index theory and K-theory. In particular, the bulk-boundary correspondence is the key to understanding the topological \mathbb{Z}_2 invariant. (Received August 12, 2016)