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Ralph M Kaufmann, 150 N University St, West Lafayette, IN 47907, **Dan Li***, 150 N University St, West Lafayette, IN 47907, and **Birgit Wehefritz-Kaufmann**, 150 N University St, West Lafayette, IN 47907. *Index theory and K-theory of Topological insulators.*

Topological insulators are new materials observed in nature that can be characterized by a $\mathbb{Z}/2$ -valued invariant. This topological $\mathbb{Z}/2$ invariant can be understood as a mod 2 index theorem in KR-theory. I will give some background and talk about the relevant index theory and K-theory. Besides the topological $\mathbb{Z}/2$ invariant, the bulk-boundary correspondence is also an active research topic in KK-theory. (Received September 17, 2017)