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Title:	Physics with Coffee and Doughnuts: Understanding the Physics Behind Topological Insulators Through Su-Schrieffer-Heeger Model
Authors:	Batra, N. (/jspui/browse?type=author&value=Batra%2C+N.) Sheet, G. (/jspui/browse?type=author&value=Sheet%2C+G.)
Keywords:	Topological insulators Tightbinding model Band insulators
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Citation:	Resonance, 25(6), pp.765-786.
Abstract:	Topological insulators are a new class of materials that have attracted significant attention in contemporary condensed matter physics. They are different from regular insulators, and they display novel quantum properties that involve the idea of 'topology', an area of mathematics. Some of the fundamental concepts behind topological insulators, particularly in low-dimensional condensed matter systems such as poly-acetylene chains, can be understood using a simple one-dimensional toy model popularly known as the Su-Schrieffer-Heeger (SSH) model. This model can also be used as an introduction to the topological insulators of higher dimensions. Here, we give a concise description of the SSH model along with a brief review of the background physics and attempt to understand the ideas of topological invariants, edge states, and bulk-boundary correspondence using the model.
URI:	https://link.springer.com/article/10.1007/s12045-020-0995-x (https://link.springer.com/article/10.1007/s12045-020-0995-x) http://hdl.handle.net/123456789/3343 (http://hdl.handle.net/123456789/3343)
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