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Topological phases in SnTe thin films with a periodic array of defects and charge doping MINSUNG KIM, JISOON IHM, Dept. of Physics and Astronomy, Seoul Natl Univ — In this study, we investigate the topological phases of two-dimensional SnTe thin films with defect superstructures and charge doping. We find that the Sn-Te bilayer is a two-dimensional normal insulator, but can be transformed into a topological insulator by introducing an appropriate array of defects. Also, the topological phases of the films can be further controlled by charge doping due to the narrow bandwidth of the topologically nontrivial defect-induced bands. The results could be useful for the realization and control of the topological phases in nano-scale thin films.

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