**Topological Dirac Insulator in a Nonsymmorphic Circuit Lattice**

Hong-guk Min,1 Yun-tak Oh,1 and Youngkuk Kim1\*

*1Department of Physics, Sungkyunkwan University, Suwon 16419, Korea*

Recent development of topological band theory has allowed the exciting discoveries of a variety of topological phases beyond condensed matter systems, including phononic, photonic, and magnetic systems. More recently, it has been shown that the energy-momentum relationship of electromagnetic waves in an electronic circuit features varius topologically protected gapless modes, eabling the electronic circuit realization of Weyl nodes [1], topological nodal lines [?], and Zak phase [2]. In the present study, we introduce our efforts to realize a novel topological crystalline phase reffered to as the topological Dirac insulator [3] in an nonsymmorphic circuit lattice. We construct a minimal curcuit lattice that hosts required nonsymmorphic space group and show their topological phase using Wilson band calculations.

1. C.H. Lee, S. Imhof, C. Berger, F. Bayer, J. Brehm, L.W. Molenkamp, T. Kiessling, and R. Thomale, Communications Physics **1**, (2018).
2. T. Goren, K. Plekhanov, F. Appas, and K.L. Hur, Physical Review B **97**, 041106 (2018).
3. B.J. Wieder, B. Bradlyn, Z. Wang, J. Cano, Y. Kim, H.-S.D. Kim, A.M. Rappe, C.L. Kane, and B.A. Bernevig, Science **361**, 246 (2018).

\* E-mail: youngkuk@skku.edu