量子物理学・ナノサイエンス第 78 回特別セミナー

Intrinsic magnetic topological insulators: an experimental view

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日程　：　10 月 6 日（水）16:00－

場所　：　Zoom*

概　要

Discovery of topological insulators about a decade ago caused a global research boom in the fields of nanotechnology and condensed matter physics. One of the challenges during these years of intense research has been the creation of a magnetic topological insulator. Until recently, magnetic topological insulators had only been created by the so-called extrinsic route, which consists of doping nonmagnetic topological insulators with magnetic atoms. The situation had been changed dramatically with a discovery of the first intrinsic topological insulator $MnBi_2Te_4$ (Otrokov *et al.,* Nature, 2019) and related compounds family (Klimovskikh *et al*., npj Quantum Materials, 2020). In this report I review the details of crystal, magnetic and electronic structure of these new materials. Depending on the stoichiometry and thickness a rich variety of magnetic and topological phases is realized. The hot topic of presence/absence of the Dirac point band gap at the surface will be discussed. The experiment will be compared with density functional theory results; possibilities of applications for quantized transport, quantum computers and dark matter detector will be analyzed.

*本 ZOOM セミナーに参加されます場合には、事前に下記より登録を済ませてください。

https://us06web.zoom.us/meeting/register/tZwkfumtqDsjHNPzOOs631LbGSLg_41NFTQX

ご来聴を歓迎いたします。

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