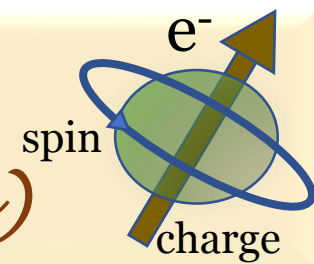




W2S Seminar

(Webinar series on Spintronics)



Heusler based Spin-Gapless Semiconductors: Reality versus Issues?

Speaker:

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Date and time:
16.07.2020 at 11am

Via
Google meet

Abstract

Spin-gapless semiconductors (SGSs) have recently received considerable interest in the fields of physics and materials science due to their possible potential applications in next-generation novel spintronic devices. Remarkably, the SGSs, having unique band structure, are expected to show 100 % spin-polarized carriers, high mobility of carriers, and easy switching between electrons and holes by tuning the Fermi level, etc. To achieve these, we started searching for various Heusler based materials, proposed from a theoretical point of view, by preparing them using arc-melting/sputtering techniques and characterizing their structural, magnetic, and electrical and magneto-transport properties. Having tried with numerous Heusler materials and keeping the literature, the presentation will focus on reality versus issues, current experimental results on different SGSs, and finally, the prospects of SGS. Although many theoretical predictions have been reported for the existence of SGS properties in many Heusler alloys, the realization of the perfect SGS is NOT successful and remains a challenge. Therefore, the practical application of SGS in future spintronic devices would take substantially more time than the predicted one. The presentation would end with appropriate acknowledgment of all the supports received from various sources for this work.

If interested to attend then please visit <https://www.niser.ac.in/w2s-seminar/index.php>