

# Structural and magnetic properties of $\text{Co}_2\text{FeSi}$ and $\text{Co}_2\text{MnSb}$ Heusler alloys thin films grown on HOPG

Karol Załęski,<sup>1</sup> Emerson Coy,<sup>1</sup> Mateusz Kempański,<sup>1</sup> and Feliks Stobiecki<sup>1,2</sup>

<sup>1</sup>*NanoBioMedical Centre, Adam Mickiewicz University, Poznań, Poland*

<sup>2</sup>*Institute of Molecular Physics, Polish Academy of Sciences, Poznań, Poland*

Graphene is a promising material for a spin channel in spintronic devices because of the large electron mobility and the long spin diffusion length [1]. Half-metallic Heusler alloys are the best materials for spin injectors and detectors due to the 100% spin-polarisation of electrons at the Fermi level [2]. Combination of these materials can lead to the improvement of performance of the spintronic devices [3]. However, the growth of the Heusler alloys on the graphene was not studied before.

Herein, we present the influence of the growth temperature on structural and magnetic properties of  $\text{Co}_2\text{FeSi}$  and  $\text{Co}_2\text{MnSb}$  Heusler alloys thin films deposited on HOPG (whose surface is similar to graphene) substrates by magnetron sputtering. In particular, the difference in the growth mode between the two alloys will be discussed.

## References:

- [1] W. Han et al., Nat. Nanotechnol. 9, 794 (2014)
- [2] T. Kimura et al., NPG Asia Mater. 4, e9 (2012)
- [3] T. Yamaguchi et al., Appl. Phys. Express 9, 063006 (2016)

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