

Spin-dependent transport in the ferromagnetic high-entropy alloy thin films incorporating heavy metal

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High-entropy alloys (HEAs) have attracted considerable attention because of their excellent mechanical, heat-, corrosion-, and irradiation-resistance properties. Most studies have focused on their applications as structural materials. However, ferromagnetic HEAs may also exhibit excellent electromagnetic functions which are not observed in conventional alloys. In this study, we focused on the FeNiCoCuPd-HEAs[1], which exhibit Curie temperatures higher than room temperature and contain Pd as a heavy metal with a large spin-orbit interaction. In this presentation, we report the spin-dependent transport properties of FeNiCoCuPd thin films fabricated using a sputtering method. This research was partly supported by the JSPS Grants-in-Aid for Scientific Research 21K18180.

[1] Primoz Kozelj et al. Adv. Eng. Mater. 2019, 21, 1801055