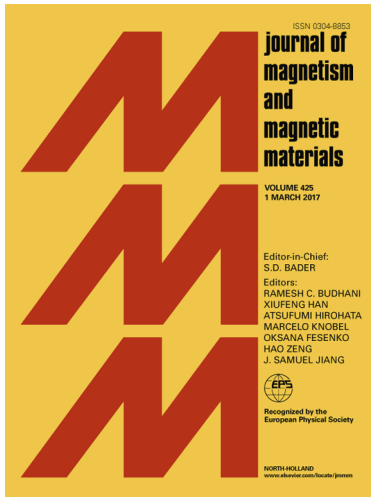

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Anomalous reversal of transverse thermoelectric voltage in $Co_\delta Fe_{100-\delta}$/YIG junction

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Abstract

We have studied thermoelectric conversion in all-ferromagnetic $Co_\delta Fe_{100-\delta}$/YIG bilayer junctions as a function of the chemical composition δ. We performed measurements of the transverse thermoelectric voltage upon application of a magnetic field. The voltage measured in the longitudinal spin Seebeck effect configuration shows a sign reversal at $\delta = 40$ %, which cannot be explained by the conventional electronic transport, such as the anomalous Nernst and Hall effects in the $Co_\delta Fe_{100-\delta}$ layer. Our results suggest a possible role of the sd-type exchange interaction between $Co_{40}Fe_{60}$ and YIG at the interface as a possible origin for the observed behavior.

Keywords: Spintronics, Spin caloritronics, Spin Seebeck effect, Anomalous Nernst effect

1. Introduction

The interaction between heat, spin and charge degrees of freedom is the central topic of the field of spin caloritronics [1, 2]. One of the most promi-

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