Enhancement of the Matteucci Effect in Amorphous Glass-Coated Microwires by Geometrical Constriction

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Abstract. Domain wall Matteucci effect (DWME) is an effective way to converse the waste alternating magnetic fields into electrical currents. It is based on a motion of a single domain wall in magnetic wires with a small circular anisotropy introduced to the sample during its manufactory process. Furthermore, DWME is also proportional to the domain wall velocity. In this paper, we enhance the DWME in amorphous glass-coated microwires by tailoring their magnetic and mechanical properties. Thermal treatment of the sample is used to release mechanical stress and tailor the domain wall inclination.