ABSTRACT

The properties of ferroelectricity and ferromagnetic in the magnetic materials have been extensively discussed in recent years. These magnetic materials can be used to fabricate novel microelectronic devices. In this study, the electrical properties of the magnetic materials consisting of iron (Fe), molybdenum (Mo) and nickel (Ni) were investigated. Magnetic shielding has been observed in the magnetic materials sintered at temperatures 400°C and 600°C. Both Fe2Ni3 and MoNi crystal structures were found in the magnetic materials as determined from X-ray diffraction (XRD). In addition, giant magnetic resistance effect was observed in the low magnetic field in these magnetic materials. The MR ratio is about 15% in the magnetic material annealed at temperature 400°C. It reveals that the Fe2Ni3 and MoNi crystal structures contribute to the giant magnetic resistance (MR) in these magnetic materials.

Keywords: magnetic, magnetic field, electromagnet

REFERENCES