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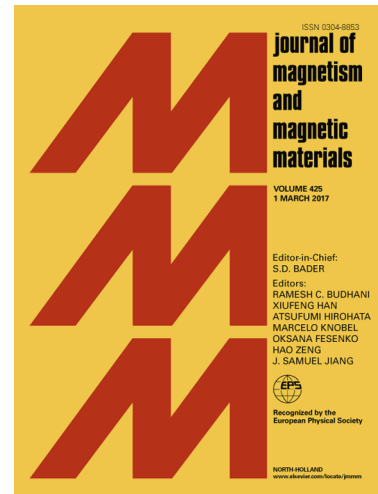
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Exchange bias in spin-glass-like NiFe<sub>2</sub>O<sub>4</sub>/BiFeO<sub>3</sub> heterojunction at room temperature  
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## Abstract

In order to improve blocking temperature of the exchange bias effects in heterojunction composing of ferromagnetic (FM) materials and multiferroic BiFeO<sub>3</sub> (BFO). NiFe<sub>2</sub>O<sub>4</sub> (NFO) was selected as the FM material to form FM/BFO heterojunction for its high Curie temperature in this paper. NFO/BFO bilayer film was prepared on Pt/Ti/SiO<sub>2</sub>/Si substrate via a simple sol-gel spin-coating technique. Exchange bias field at room temperature has been observed as expected and  $H_{EB}/H_C$  was 4.5%. The M-T curves of the NFO/BFO heterostructure indicated that the magnetic anisotropy disappeared above 300 K. Furthermore, a field-dependent irreversible magnetization behavior and an exponential decay of coercive field and exchange bias field with temperature were found, which suggested a spin-glass-like state existed in the NFO/BFO heterostructure.

## Key words

NiFe<sub>2</sub>O<sub>4</sub>/BiFeO<sub>3</sub> heterojunction, exchange bias, blocking temperature, spin-glass-like state

## Introduction

In order to develop novel types of memories and logic devices, multiferroics are

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