

## Accepted Manuscript

Intrinsic exchange bias and vertical hysteresis shift in  $\text{Bi}_{0.84}\text{La}_{0.16}\text{Fe}_{0.96}\text{Ti}_{0.04}\text{O}_3$

P.T. Tho, D.H. Kim, T.L. Phan, N.V. Dang, B.W. Lee

PII: S0304-8853(17)33929-X

DOI: <https://doi.org/10.1016/j.jmmm.2018.05.018>

Reference: MAGMA 63930

To appear in: *Journal of Magnetism and Magnetic Materials*

Received Date: 21 December 2017

Revised Date: 19 March 2018

Accepted Date: 5 May 2018

Please cite this article as: P.T. Tho, D.H. Kim, T.L. Phan, N.V. Dang, B.W. Lee, Intrinsic exchange bias and vertical hysteresis shift in  $\text{Bi}_{0.84}\text{La}_{0.16}\text{Fe}_{0.96}\text{Ti}_{0.04}\text{O}_3$ , *Journal of Magnetism and Magnetic Materials* (2018), doi: <https://doi.org/10.1016/j.jmmm.2018.05.018>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



**Intrinsic exchange bias and vertical hysteresis shift in  $\text{Bi}_{0.84}\text{La}_{0.16}\text{Fe}_{0.96}\text{Ti}_{0.04}\text{O}_3$** 

P. T. Tho<sup>1</sup>, D. H. Kim<sup>1</sup>, T. L. Phan<sup>1</sup>, N. V. Dang<sup>2</sup>, and B. W. Lee<sup>1,\*</sup>.

<sup>1</sup>Department of Physics and Oxide Research Center, Hankuk University of Foreign Studies, Yongin 449-791, South Korea

<sup>2</sup>Department of Physics and Technology, Thai Nguyen University of Sciences, Thai Nguyen, Vietnam

**Abstract**

We have studied the vertical hysteresis shift, the exchange bias, and the exchange spring effect in apolycrystalline sample of  $\text{Bi}_{0.84}\text{La}_{0.16}\text{Fe}_{0.96}\text{Ti}_{0.04}\text{O}_3$  at morphotropic phase boundary. The magnetic coupling at the phase boundary causes the formation of pinned spin region, which induces the spin rotation inside the two structural phases. The exchange coupling between the pinned spin and the two phases act as hard/soft coupling layers, respectively. Dependence on the strength of the spin pinning, we observed various types of the exchange coupling at different temperature.

**Keywords:** BiFeO<sub>3</sub>-based multiferroics, exchange bias, exchange spring.

\*Electronic mail: [bwlee@hufs.ac.kr](mailto:bwlee@hufs.ac.kr)

Download English Version:

<https://daneshyari.com/en/article/8152812>

Download Persian Version:

<https://daneshyari.com/article/8152812>

[Daneshyari.com](https://daneshyari.com)