

# THE INVESTIGATION OF THE MAGNETIZATION REVERSAL MECHANISM IN THE Nd-Fe-B TYPE MAGNET, ALIGNED BY HOT DEFORMATION

M. Dośpiał<sup>1</sup>, M. Nabiałek<sup>1</sup>, M. Szota<sup>2</sup>, W. Lipiec<sup>3</sup>, V. I. Nizhankovskii<sup>4</sup>,  
A.E. Ceglarek<sup>1</sup>, P. Pietrusiewicz<sup>1</sup>

<sup>1</sup>Institute of Physics, <sup>2</sup>Institute of Materials Science, Czestochowa University of Technology, Al. Armii Krajowej 19, 42-200 Czestochowa, Poland

<sup>3</sup>Electrotechnical Institute, ul. M. Skłodowskiej-Curie 55/61, 50-369 Wrocław, Poland

<sup>4</sup>International Laboratory of High Magnetic Fields and Low Temperatures, ul. Gajowicka 95, 53-421 Wrocław, Poland

9.7 cm

The magnetization reversal mechanism in the Nd<sub>16</sub>Fe<sub>78</sub>B<sub>6</sub> hot densified magnet, aligned by means of die-upset forging have been investigated. The magnetic parameters have been derived from major hysteresis loop. The magneto-crystalline anisotropy constants  $K_1$  and  $K_2$  using Sucksmith-Thompson relation modified by Ram and Gaunt have been calculated from the high field measurements up to 5T. These data have been used to determine the theoretical value of coercivity as a function of the angle  $\Psi_0$  between the sample easy axis and the applied magnetic field direction. The experimental value of coercivity as a function of  $\Psi_0$  has been determined from the demagnetization curves measured for different angles  $\Psi_0$ . It was found that the best correlation between theoretical and experimental data have been achieved for magnetization reversal mechanism controlled partially by pinning of domain walls on grain boundaries and nucleation processes.

13.4 cm

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## Corresponding author :

M. Dośpiał

## Address for correspondence :

Instytut Fizyki, Politechnika Czestochowska  
Al. Armii Krajowej 19  
42-200 Czestochowa, Poland

## Email address :

mdospial@wp.pl