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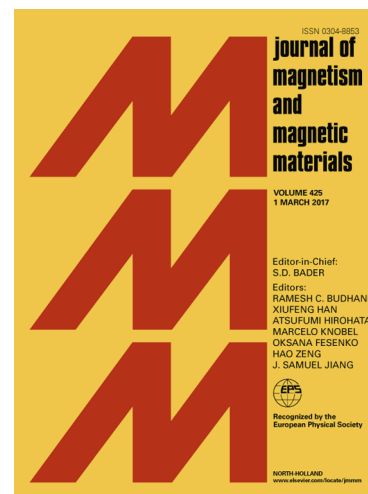
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**Dependence of the demagnetization behavior on the direction of grain boundary  
diffusion in sintered Nd-Fe-B magnets**

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**Abstract**

The effect of the direction of coercivity distribution gradient on the demagnetization behavior of anisotropic sintered Nd-Fe-B magnets was investigated via both experiments and simulations. In the grain boundary diffusion process (GBDP) using Dy<sub>70</sub>Cu<sub>30</sub>, the magnet diffused parallel to the *c*-axis shows much higher squareness factor ( $H_k/H_{cj}$ , 0.92) than that diffused perpendicular to the *c*-axis ( $H_k/H_{cj}$ , 0.83). To simulate the different gradient of coercivity distribution with respect to the *c*-axis after the GBDP, composite Nd-Fe-B magnets composed of two different grades of Nd-Fe-B magnets were fabricated via diffusion bonding. The anisotropic demagnetization behavior of the composite magnets sandwiched in two directions is similar to that of the magnets after GBDP along two perpendicular directions.

Micro-magnetic simulations further confirmed the dependence of demagnetization

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