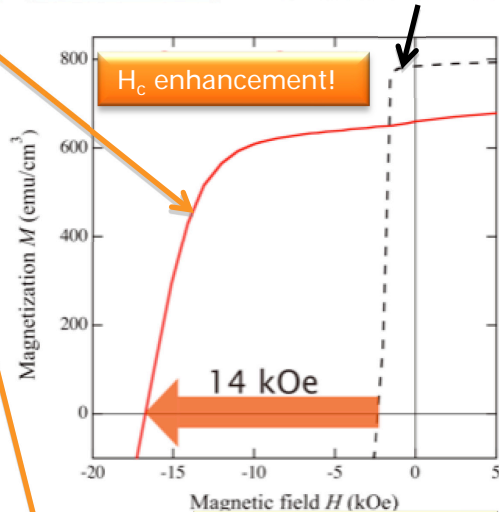
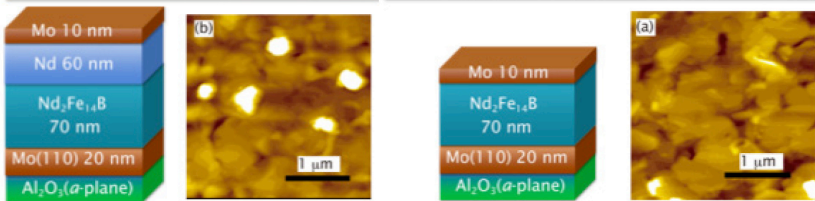


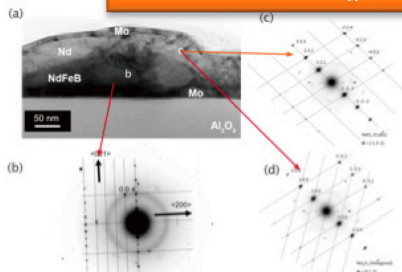
Development of technology for reducing rare-metal usage in a strong Nd-Fe-B magnets by interface modification

Associate Professor Kunihiro Koike

After Nd coating & post annealing without Nd overlayer but post annealed



Existence of NdO_x



Content :

Nd-Fe-B sintered magnets have a potential for wide application such as a high performance motor for electric vehicle (EV) or hybrid electric vehicle (HEV). However, $\text{Nd}_2\text{Fe}_{14}\text{B}$ has a weak point, which is low Curie temperature. So, it is necessary that putting the Dy (rare-metal) into Nd-Fe-B sintered magnets enhance the coercivity for thermal stability. If usage of the rare-metal is steadily increasing then a shortage of it will be very acute in the near future.

Recently, our laboratory is aiming to development of technology for reducing rare-metal usage in a strong Nd-Fe-B magnets by interface modification of interface between $\text{Nd}_2\text{Fe}_{14}\text{B}$ and Nd-rich phases. Therefore, we fabricated a model interface film, which consists of the $\text{Nd}_2\text{Fe}_{14}\text{B}$ layer and the various rare-metal overlayer in order to study the relationship between the microstructure near the interface and coercivity.

Yamagata University Graduate School of Science and Engineering
Research Interest : Magnetic Materials & Thin Films

E-mail : kkoike@yz.yamagata-u.ac.jp
Tel&Fax : +81-238-26-3379

HP : <http://i-physics.yz.yamagata-u.ac.jp>

