
MM 57: Invited Talk (Hauptvortrag) Hono

Time: Thursday 15:00–15:30

Location: BAR 205

Invited Talk MM 57.1 Thu 15:00 BAR 205
Toward the development of Dy-free high coercivity Nd-Fe-B permanent magnets — •KAZUHIRO HONO, HOSSEIN SEPEHRI-AMIN, and TADAKATSU OHKUBO — National Institute for Materials Science

Due to the recently-emerged concern about the scarce resource of heavy rare earth (HRE) elements, finding a way to increase the coercivity of Nd-Fe-B magnets without using Dy has become the center of permanent magnet research in Japan. In this talk, we will

give an overview on our recent progresses toward the development of high coercivity Dy-free Nd-Fe-B permanent magnets. Based on the microstructure-coercivity relationships investigated by multi-scale characterization with SEM, TEM and atom probe tomography (APT), we have studied the microstructure-coercivity relationships of Nd-Fe-B based magnets systematically. Comparing the results with micromagnetic simulations, we discuss the way to achieve a coercivity higher than 2.5 T in Nd-Fe-B based permanent magnets without HRE.