

Dear Editor and Reviewers:

We sincerely thank the reviewers for the thoughtful and constructive comments and questions, and we also appreciate the editor for the work on processing the manuscript. All comments and questions have been discussed and replied in the following one by one. The changes, deletions and additions in the revised manuscript were marked by red color fonts.

Sincerely yours,
Zixuan Yang

Reviewer 3:

The authors have made only minor modifications of the manuscript. They did not explain what was the novelty of their article in comparison to "Effect of cerium on the corrosion behavior of sintered (Nd,Ce)FeB magnet"; <https://doi.org/10.1016/j.jmmm.2017.01.094>.

Reply (1): Thanks for the reviewer's comment. The purpose of the two articles is very different.

For our article, the mechanism of the effect of Ce on the corrosion resistance of NdFeB magnets was analyzed by electrochemical measurements, SKPFM tests, and structural observation. We demonstrated that Ce primarily replaces Nd in the Nd-rich phase instead of matrix phase, increasing the surface potential of the Nd-rich phase. An increase in the Ce content from 0 to 5.21% wt, decreased the potential difference between the main phase and (Nd, Ce)-rich phase from 350.2mV to 97.7mV; therefore, the corrosion resistance of the magnetic materials increased. The corrosion resistance constituted the Nd-rich phase < the void < metal matrix.

In our paper, the effect of Ce on the corrosion mechanism of magnetic materials was studied deeply.

For the "Effect of cerium on the corrosion behavior of sintered (Nd,Ce)FeB magnet" article. They only found that a little Ce could promote the magnets for a better corrosion resistance. As the corrosion developed, the magnetic properties decreased.