
The Effect of Shielding Plate on Induction Range



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The induction range's working coil system consists of a coil, ferrite core, and shielding plate. Since the ferrite core has a significant impact on efficiency by amplifying the magnetic field generated from the coil, research on optimal design was conducted.

The shielding plate protects the circuit by shielding the magnetic field from the board, but it also affects the overall magnetic field signal. Therefore, research is needed on the effects of shielding plates.

In this paper, first, the eddy current loss occurring in the shielding plate was analyzed by using 3D FEM(Finite Element Method) program of Maxwell 3D . Next, the effect of the thickness and air gap of the shielding plate was analyzed. By analyzing the eddy current distribution occurring in the shielding plate, an optimal design to reduce loss can be performed.

Biography:

Sang Hyeon Im received the Ph.D degree in electrical engineering from Pusan National University, Busan, South Korea in 2020. From 2021 to now, he is an Assistant Professor with Dong Eui University, Busan.