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Electromagnetic Analysis of a Wireless Power Receiver

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Abstract: This poster presents an inductive-based wireless power transfer (WPT) system for low power applications at short distances. A wireless power transfer system includes three major parts: coils, cores, and driver. The inductive coupling based WPT system was modeled and simulated using a finite element method. The effects of the air-gap and the shape of receiving core were studied. Based on the performed simulation the use of pot core in the receiver was proposed. It was concluded that this type of core would reduce the dependency of magnetic flux density to the air gap.

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Reference:

[1] M. Haerinia and E. S. Afjei, "Investigation of receiving pot core effect on magnetic flux density in inductive coupling-based wireless power transfer," 2016 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (SPEEDAM), Anacapri, 2016, pp. 541-545