Abstract

The direct switched apparatus in use nowadays are connected to the mains through plugs and sockets. These are generally agreed in natural environment, but can be prohibited or have limited life in the presence of moisture, in explosive atmospheres and inside sea applications. So contactless power transmission through a large air-gap is becoming more suitable for the above applications. This paper discusses the effects of geometrical arrangements of contactless transformer for two core types, U-U type and E-E type by means of flux simulation based on finite element method with ANSYS program v5.4. It is found that the U-U type core can give higher coupling coefficient within the same core geometry and lower leakages. It could be concluded that the dimensions of the core and the air-gap length determine the transmission behavior.

References

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Modeling and Analysis of Contactless Transformer based on Magnetic Flux Simulation Techniques


Index Terms

Computer Science

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Keywords

Contactless Transformer, Flux Simulation, Air-gap, Flux-Lines