

عنوان مقاله:

Shielding Effectiveness Analysis of the Materials for High Current Systems in Low Frequency

محل انتشار:

بیستمین کنفرانس بین المللی برق (سال: 1384)

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نویسندگان:

HOSSEIN HEYDARI - *Electrical Engineering Department, High Voltage & Magnetic Materials Research Center Iran
University of Science and Technology*

MOHSEN FARHADI - *Electrical Engineering Department, High Voltage & Magnetic Materials Research Center Iran
University of Science and Technology*

FARAMARZ FAGHIHI - *Electrical Engineering Department, High Voltage & Magnetic Materials Research Center Iran
University of Science and Technology*

خلاصه مقاله:

Since current injection transformer as a high current systems are within the major group of the standard type test equipments in electrical industry, their performances are very important. When designing a high current devices, there are many factors to be considered from which, the compatibility of these devices with the internal and external propagation and generation of low frequency and high frequency disturbances within electromagnetic environment must be ensured. Up to the present time, as far as the authors are aware no report on shielding effectiveness analysis of the materials for high current systems in low frequency has been made. This paper attempts to fill this void in our knowledge by considering various issues related to shielding design consideration in a 25kA current injection transformer (CIT) as a high current system, using 3D electromagnetic fields (EMFs) simulation tools to calculate shielding effectiveness of various materials in low frequency. As matter of comparison of finite element method (FEM) simulations to measurements, a short circuit test was carried out on a typical CIT. This paper also reports the propagated and the generated low frequency near fields around the CIT and shielding effectiveness of various materials against these radiated fields.

کلمات کلیدی:

Electromagnetic compatibility (EMC), Electromagnetic interference (EMI), Current injection transformer (CIT),
Shielding material

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