# Soft Magnetic Composites

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**Abstract**
Magnetic materials made of soft magnetic composites (SMCs) are extensively developed as a viable alternative to the laminated steel materials in a range of new applications, such as transformers, inductors, sensors, fast switching solenoids and electrical motors [1]. They have some unique properties such as three-dimensional isotropic ferromagnetic behaviour, lower weight and size, very low eddy current loss, relatively low total core losses at medium and high frequencies, high electrical resistivity and good relative permeability [2]. Engineering of soft magnetic materials designs materials which possess required electromagnetic properties. Extremely important is the insulating phase which determines the density, mechanical properties, electrical resistivity and essentially all magnetic properties of SMCs [3, 4]. Particularly, preparation technology and composition of soft magnetic composite are the most important factors for optimization of both the electric and the magnetic properties [5]. This presentation reviews soft magnetic composites with their unique magnetic properties, limitations, and applications.

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