A new composite soft magnetic material with ferrite coatings

A.Vetcher,[1] G.Govor,[1] F.Khasanov,[2] and U.Berdiev[2]

[1] *Scientific-Practical Materials Research Centre of NAS of Belarus, P.Brovki str. 19, 220072 Minsk, Belarus*

[2] *Tashkent State University of Transport, Temiryo'lchilar str. 1, 100167 Tashkent, Uzbekistan*

For the electrical industry an urgent task is to develop new soft magnetic materials, in particular composites. Composites in which filling components have metal-dielectric-metal (MDM) interaction are of greatest interest. Recent few years many research centers have been intensively researching soft magnetic composites (SMC) based on use of soft magnetic particles, usually based on iron, with an electrically insulating coating on each particle [1]. The carried out preliminary researches of a composite magnetic material based on iron ASC 100.29 and Atomet 1001HP powders, surface of which is capsulated by ferrite, have shown perspectives of their application in engineering. Unique specific parameters of a softmagnetic composite material - a magnetic induction of saturation 2.1 Tesla, work in a frequency range up to 100 kHz at Curie temperature from above 800°C allow to use it in high speed valve and valve-jet electromachines and as chokes and high-frequency transformers.

References:

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