

## P9 Novel Multifunctional Magnetic Inorganic Composites: Synthesis and Characterization

**P. Sgarbossa<sup>a</sup>, G. Marangoni<sup>a</sup>, R. Bertani<sup>a</sup>, L. Del Bianco<sup>b</sup>, M. Natali<sup>c</sup>,  
D. Pavarin<sup>a</sup>, F. Spizzo<sup>b</sup>, S. Tamburini<sup>c</sup>**

<sup>a</sup> Department of Industrial Engineering, University of Padova, Via Marzolo 9, 35131 Padova Italy,

<sup>b</sup> Department of Physics and Earth Sciences, University of Ferrara, Via Saragat 1, 44122 Ferrara Italy,

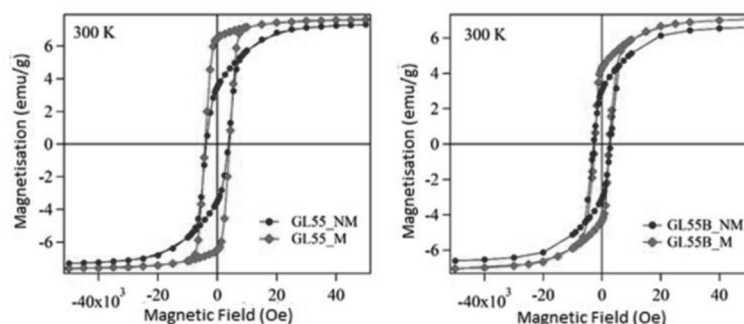
<sup>c</sup> National Research Council - CNR ICMATE, Corso Stati Uniti 4, 35127 Padova Italy

e-mail: paolo.sgarbossa@unipd.it

We report the preparation of a series of new magnetic inorganic composites (MICs) with tuneable magnetic and mechanical properties. In the field of power inductive components and inductive heating, they could transfer energy with high robustness and excellent performances. Moreover, they may mitigate electromagnetic interference (EMI) in the LF and MF band. The MICs have been prepared using an alkaline or acidic activation process carried out in the presence of commercial magnetic micrometric particles made of anisotropic and isotropic Sr-ferrite. Three different matrices have been prepared, varying the type of activator, slag addition, water content, and aggregates.

Sample	GL55	GL55B	GL56	GL21F	GL21G
Matrix	G1		G2	G3	
Magnetic Nanoparticles (MNPs)	Sr-Ferrite anisotropic	Sr-Ferrite isotropic	Sr-Ferrite isotropic	Sr-Ferrite isotropic	Sr-Ferrite anisotropic
Nominal concentration	11.2	10.2	8.9	5.9	5.9

**Figure 1:** The nominal relative concentration of magnetic particles carried out at 300 K



**Figure 2:** The effect of the magnetization process during the solidification of the samples.

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*Acknowledgements:* This research was funded by 2017 BIRD Project.