

Article

Effect of Topology Parameters on Physical–Mechanical Properties of Magnetic PLA 3D-Printed Structures

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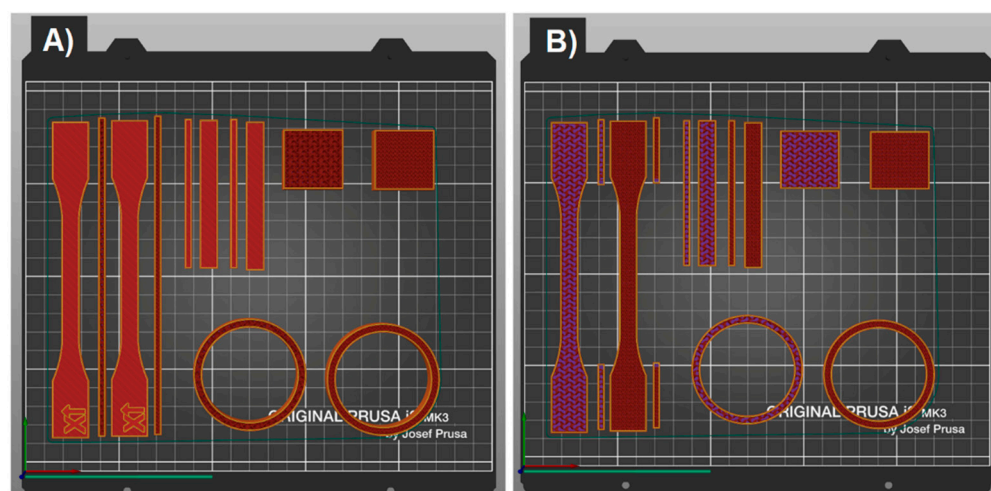


Figure S1. The example of sample layout when printing with xy orientation, where there are always two types of samples in each image; on the left a sample of 20% infill density, on the right a sample of 50% infill density.

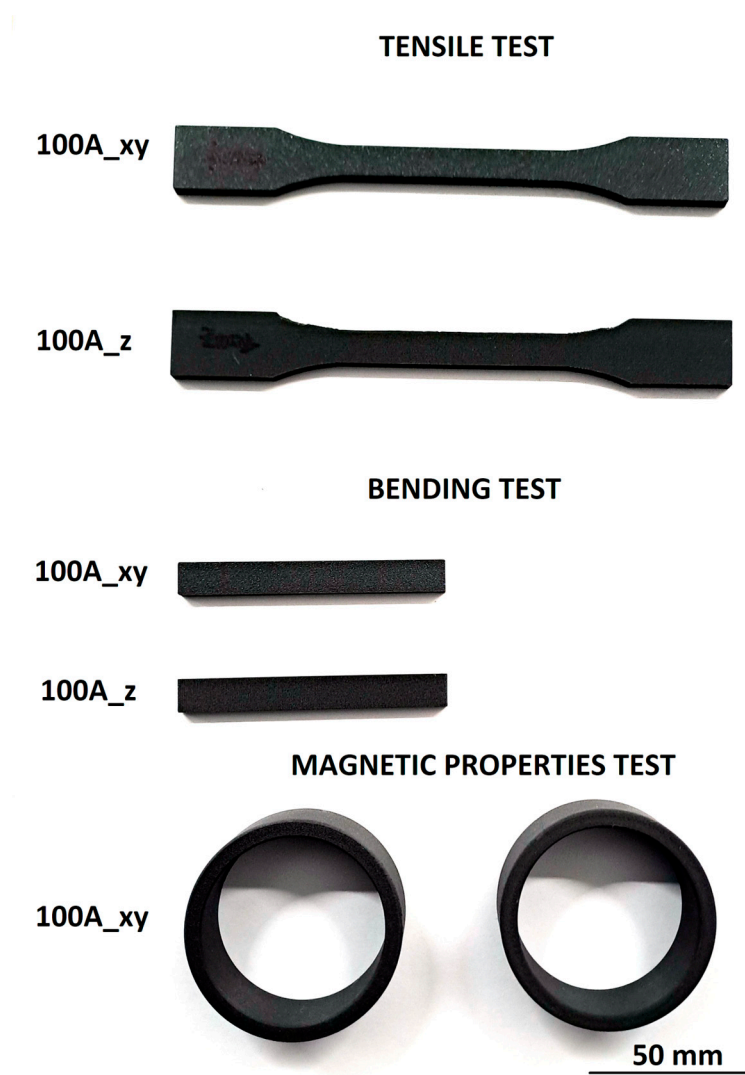


Figure S2. Examples of printed samples for individual types of testing.

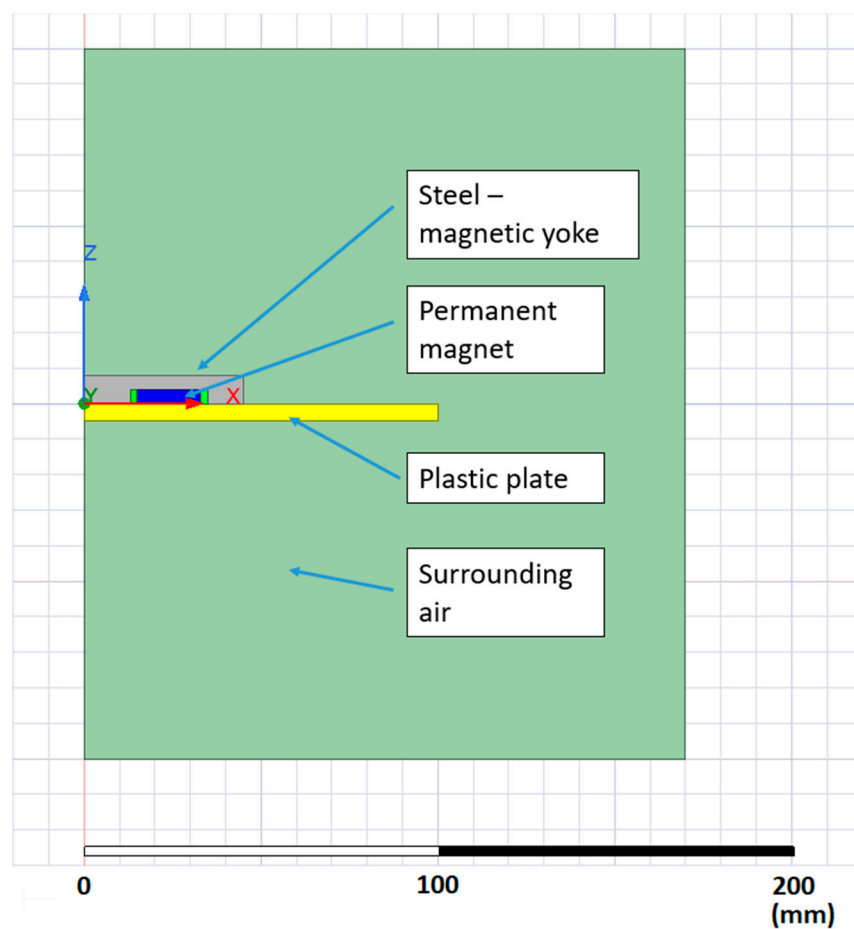


Figure S3. Realization of the FEM model of the magnet and the holding plastic plate (axisymmetric configuration about axis z).

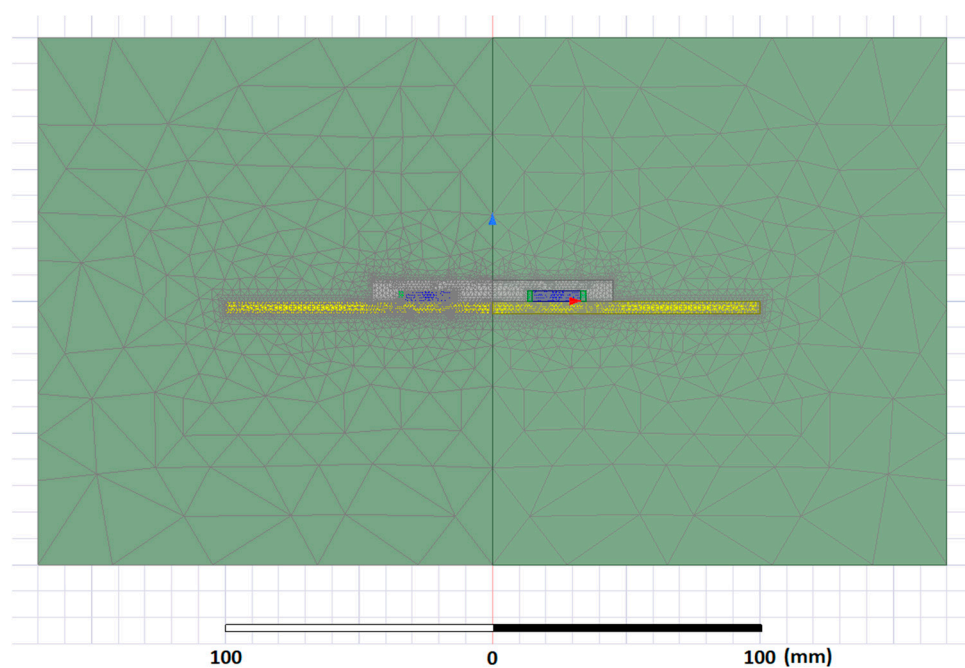


Figure S4. Implementation of the computational network of the magnet model and the holding plastic plate.

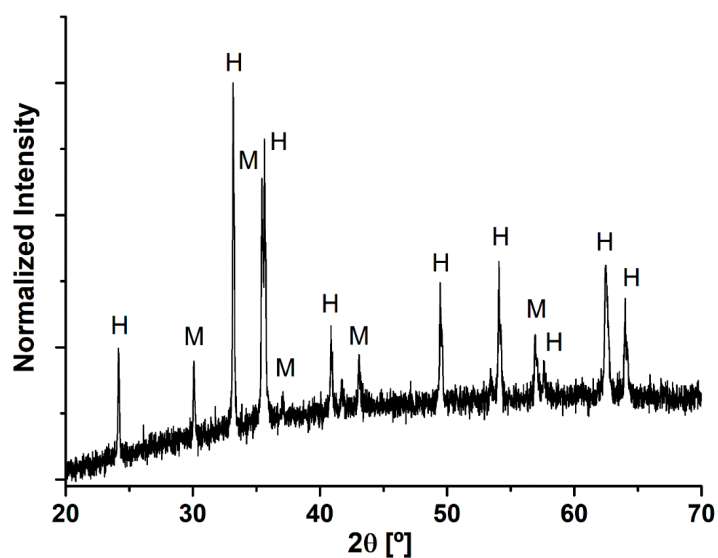


Figure S5. XRD pattern for magnetic additive with indication of corresponding phases, where M is for magnetite, H is for hematite.

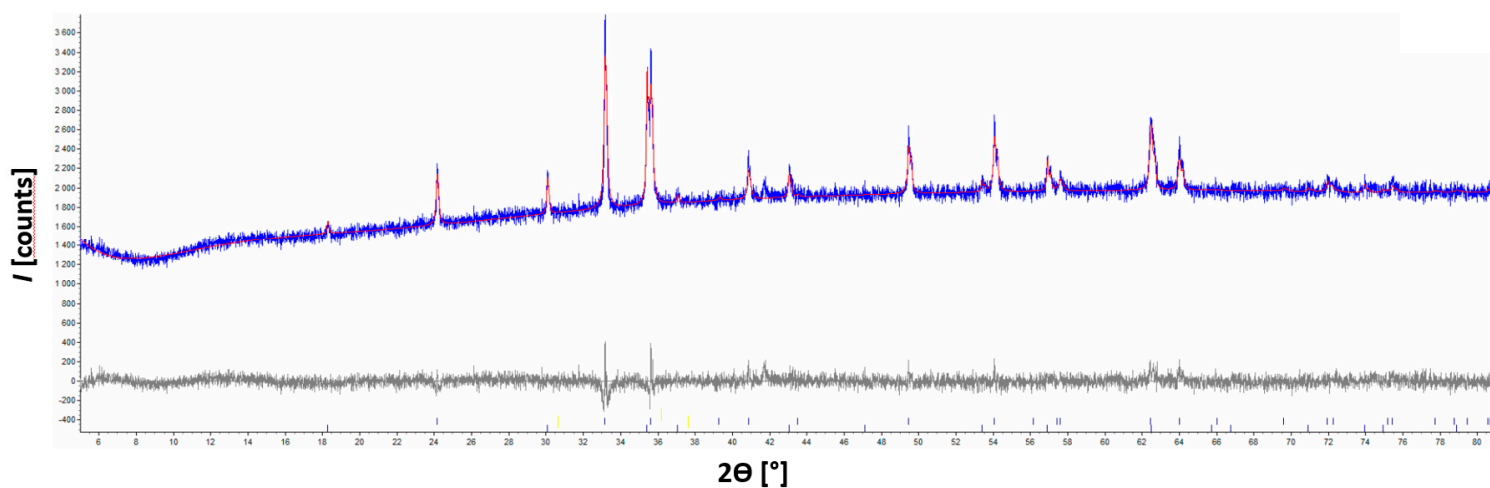


Fig. S6. Graphical output of the Rietveld refinement of the magnetic product: blue line – experimental spectrum; red line – calculated pattern; grey line – difference plot. RWP value characterizing the quality of fit was 2.665.

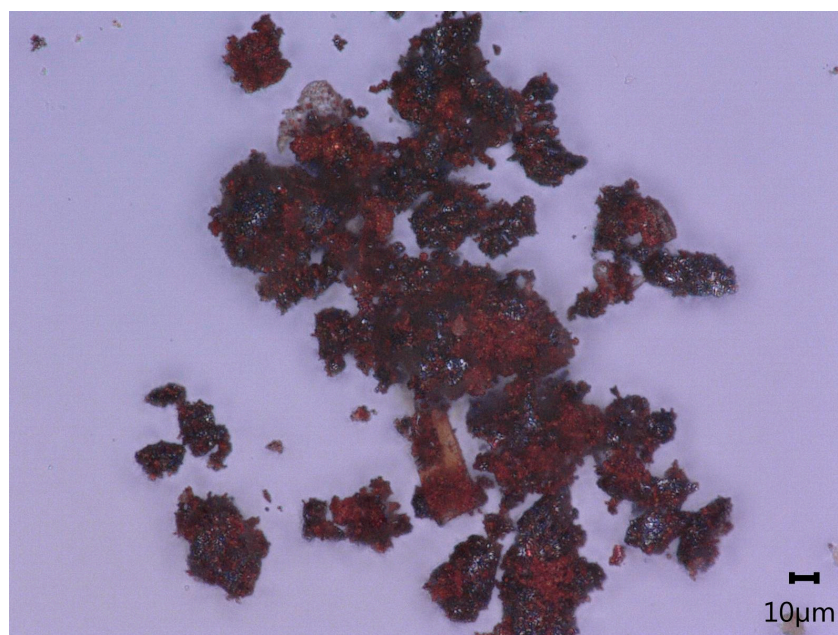


Figure S7. Microscopic image of used magnetic powder in filament.

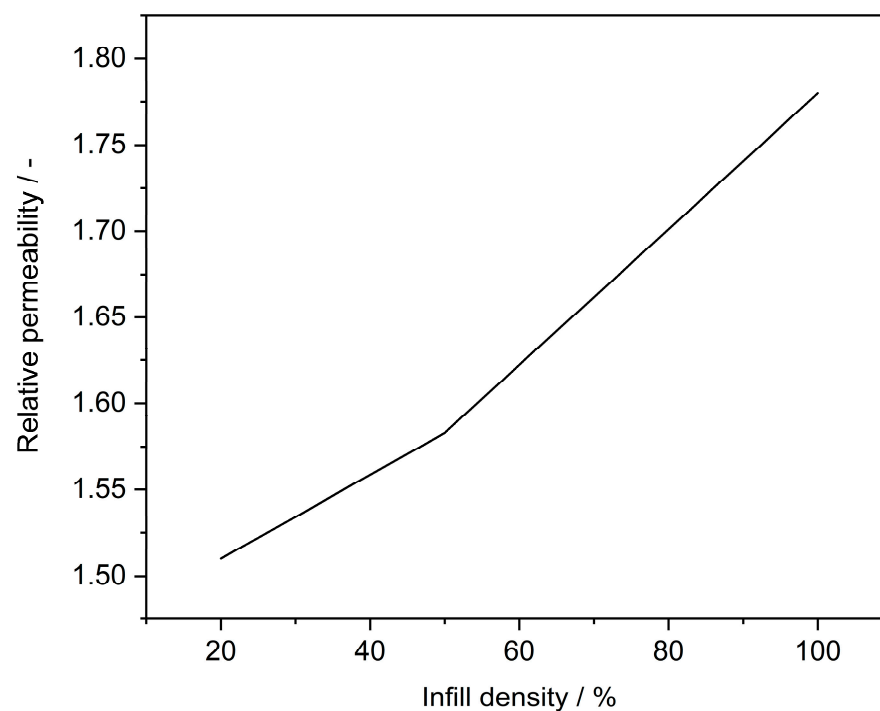


Figure S8. Dependence of relative permeability on increasing infill density in samples with magnetic additive content.

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