Study on non-uniform axial magnetic field induced deformation of soft cylindrical magneto-active actuator

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Magnetic permeability

The magnetic permeability of randomly dispersed magnetic inclusions inside nonmagnetic matrix is investigated for several years, and models such as Lam's model¹, effective medium theory², averaged magnetic field model³. A latest review⁴ is provided for relevant information. Initial magnetic permeability can be obtained by deriving the slope of the magnetizing curve in vibrating sample magnetometer (VSM) test. Samples with 10 VOL.%, 20 VOL.% and 30 VOL.% particle content is shown in Fig. S1.



Fig. S1. Comparison between theoretical magnetic permeability based on averaged magnetic field model

and initial magnetic permeability obtained by VSM data (Colorized Stars).

Reference:

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