



## Supplementary Material

# Magneto-Mechanically Triggered Thick Films for Drug Delivery Micropumps

Georgiana Dolete <sup>1,2</sup>, Cristina Chircov <sup>1,2</sup>, Ludmila Motelica <sup>1,2</sup>, Denisa Ficai <sup>2,3,\*</sup>, Ovidiu-Cristian Oprea <sup>2,3,4</sup>, Marin Gheorghe <sup>5,6</sup>, Anton Ficai <sup>1,2,4</sup> and Ecaterina Andronescu <sup>1,2,4</sup>

<sup>1</sup> Department of Science and Engineering of Oxide Materials and Nanomaterials, Faculty of Chemical Engineering and Biotechnologies, University POLITEHNICA of Bucharest, Gh. Polizu 1-7, 011061 Bucharest, Romania

<sup>2</sup> National Center for Micro and Nanomaterials, University POLITEHNICA of Bucharest, Splaiul Independentei 313, 060042 Bucharest, Romania

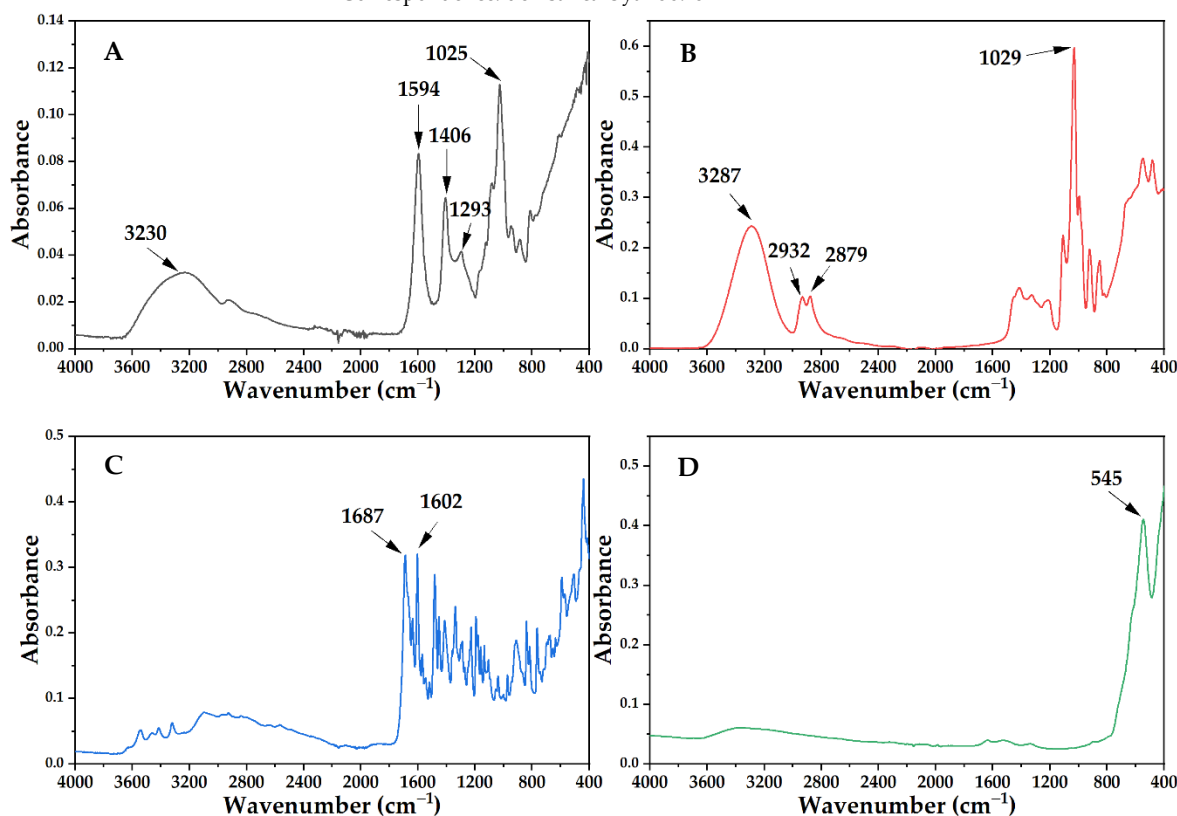
<sup>3</sup> Department of Inorganic Chemistry, Physical Chemistry, and Electrochemistry, Faculty of Chemical Engineering and Biotechnologies, University POLITEHNICA of Bucharest, Gh. Polizu 1-7, 011061 Bucharest, Romania

<sup>4</sup> Academy of Romanian Scientists, Ilfov Street 3, 050044 Bucharest, Romania

<sup>5</sup> SC NANOMEMS SRL, George Coșbuc 9, 505400, Râșnov, Romania

<sup>6</sup> Center for Technological Electronics and Interconnection Techniques, University Politehnica of Bucharest, Bulevardul Iuliu Maniu, 061071 Bucharest, Romania

\* Correspondence: denisaficai@yahoo.ro



**Figure S1.** Infrared spectra of raw materials: (A) sodium alginate, (B) glycerol, (C) folic acid, and (D) Fe<sub>3</sub>O<sub>4</sub> nanoparticles.

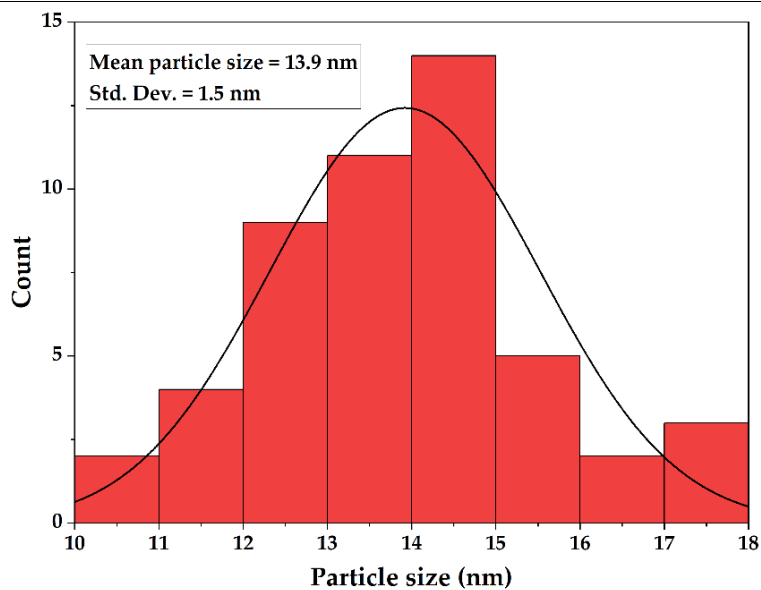


Figure S2. Particle size statistic results for bulk magnetite nanoparticles.

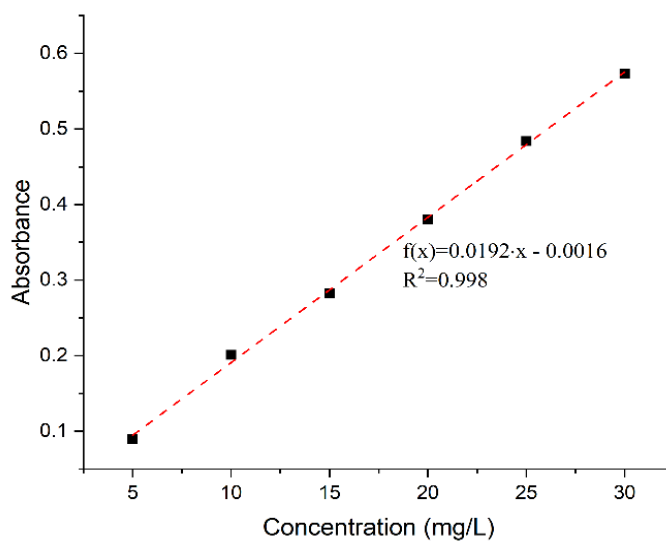


Figure S3. UV-Vis calibration curve of folic acid at 367 nm.

Table S1. Precision study of folic acid at 367 nm.

Sample No.	Absorbance
1	0.283
2	0.283
3	0.281
4	0.281
5	0.282
Mean	0.282
±SD	0.001
%RSD	0.378

**Table S2.** Accuracy study for a spiked solution of folic acid.

Theoretic concentration ( $\mu\text{g/ml}$ )	Absorbance	Calculated Concentration ( $\mu\text{g/ml}$ ) <sup>1</sup>	%Recovery <sup>2</sup>
17.5	0.329	17.2	98.39

<sup>1</sup>Calculated based on the obtained linear equation  $f(x)=0.0192x-0.0016$ .<sup>2</sup>%Recovery = (Calculated concentration/Theoretic concentration)  $\times$  100.