Supplementary Information

The Role of Structural Anisotropy in the Magnetooptical Response of an Organoferrogel with Mobile Magnetic Nanoparticles

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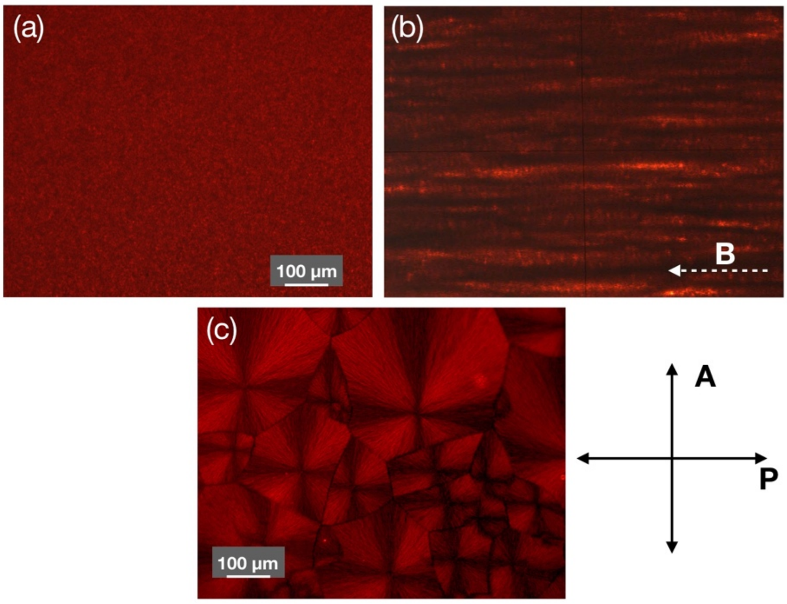

Figure S1. Polarizing microscopy textures of an isotropic (a) and an anisotropic gel (b) with 7 wt% MNPs and 10 wt% of the gelator at room temperature, as obtained at a cooling rate 1 K min^{-1} in a magnetic field aligned horizontally.

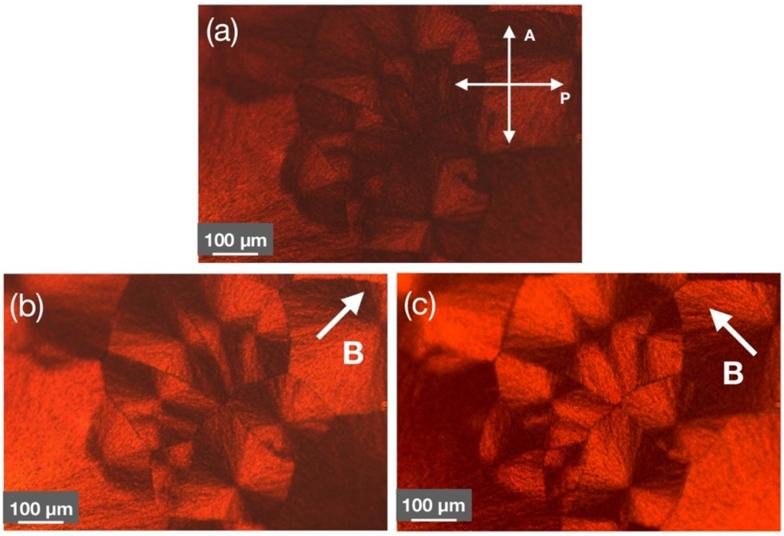

Figure S2. Magnetically induced birefringence in an isotropic gel observed between crossed polarizers. (a) without external magnetic field. Textures (b) and (c) appear in an external magnetic field **B** in orthogonal directions. The brightest areas correspond to the additive configuration of the gel and the MNP subphase. The absence of the deformation of the extinction brushes indicates the preservation of the global gel network under a magnetic field.

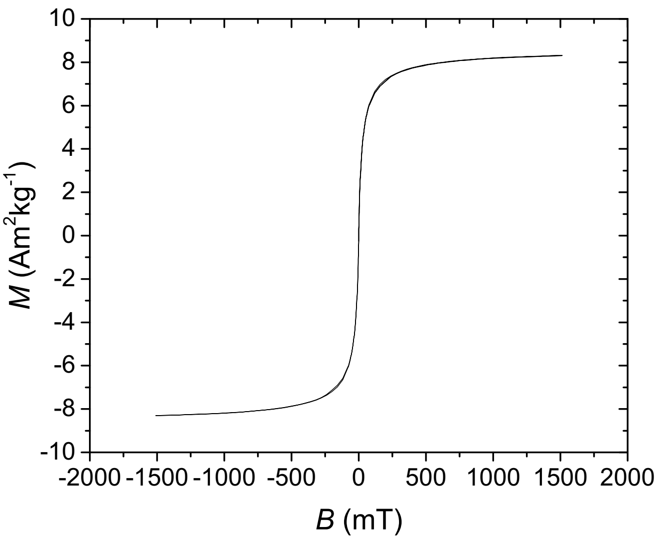

Figure S3. Magnetization curve for a gel with c_{MP}=10 wt% and c_{G}=10 wt%.

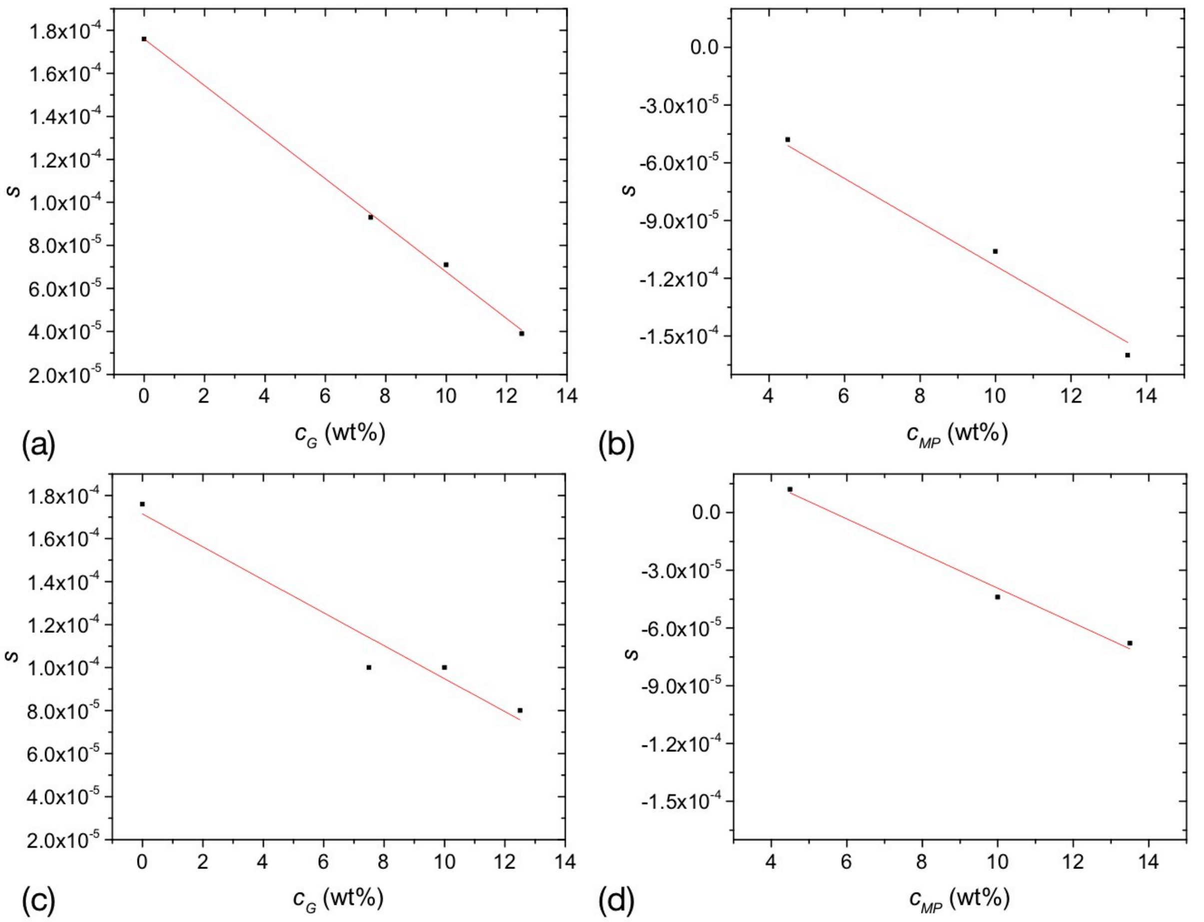

Figure S4. (a) and (c) show the slopes s of the linear fits of $\Delta n_{max}(c_{MP})$ as a function of the gelator concentration of the isotropic and anisotropic gels, respectively. Figures (b) and (d) show the slopes s of the linear fits of $\Delta n_{max}(c_G)$ as a function of the MNP concentration of the isotropic and anisotropic gels, respectively.

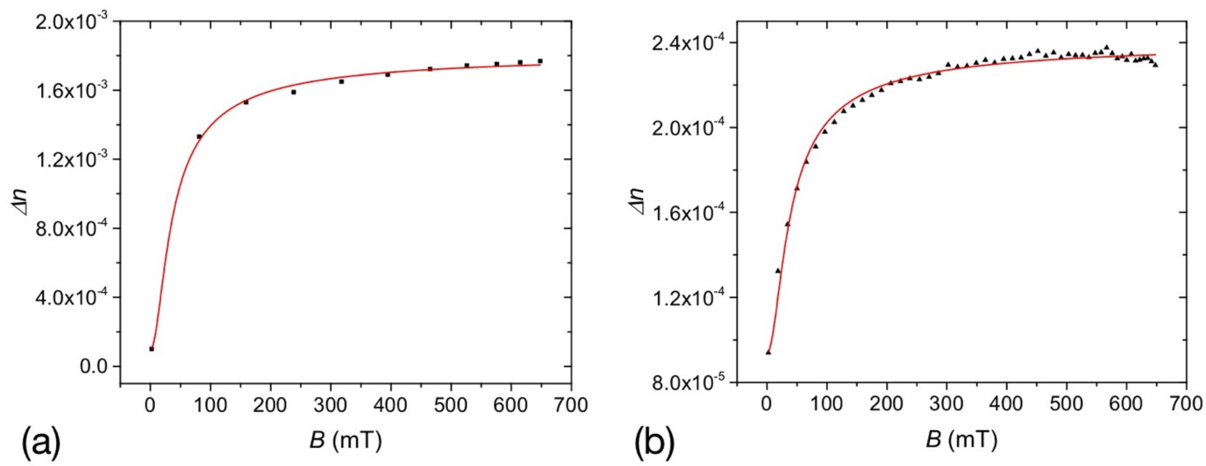

Figure S5. Magnetically-induced birefringence $\Delta n(B)$ as a function of the field strength B in (a) ferrofluid with 10.4 wt% and (b) ferrogel with c_{MP} = 4.5 wt% of MNPs and c_G = 12.5 wt%. The solid red lines are fits using Eq. 5.