



Supporting Information

for

Wet-spinning of magneto-responsive helical chitosan microfibers

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Additional experimental data

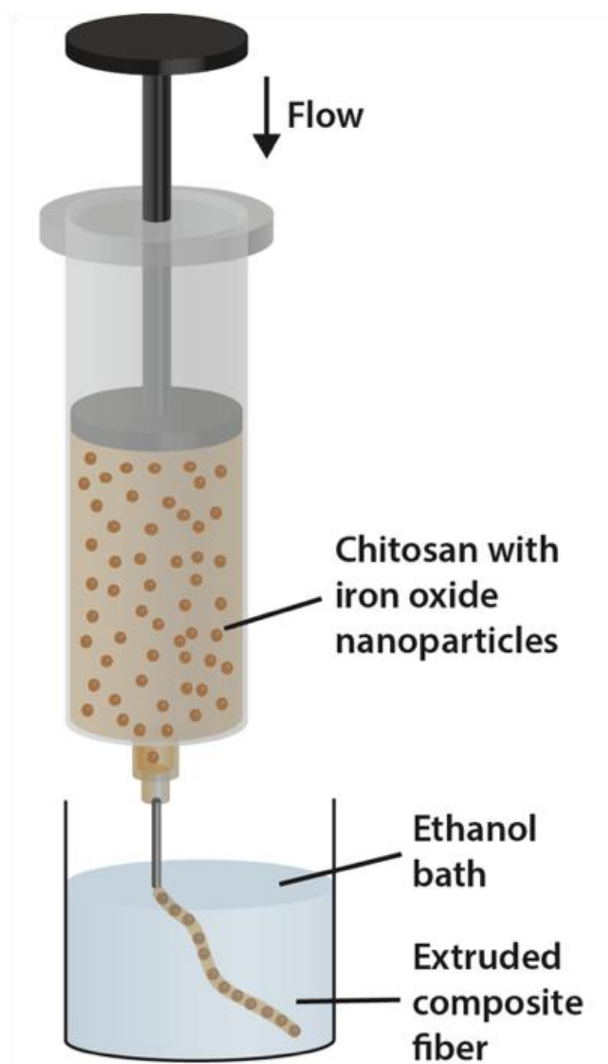


Figure S1: Schematic of the custom-built setup for wet-spinning of chitosan solutions blended with IOPs. Viscous feedstock solutions were extruded into an ethanol coagulation bath to facilitate fiber preparation.

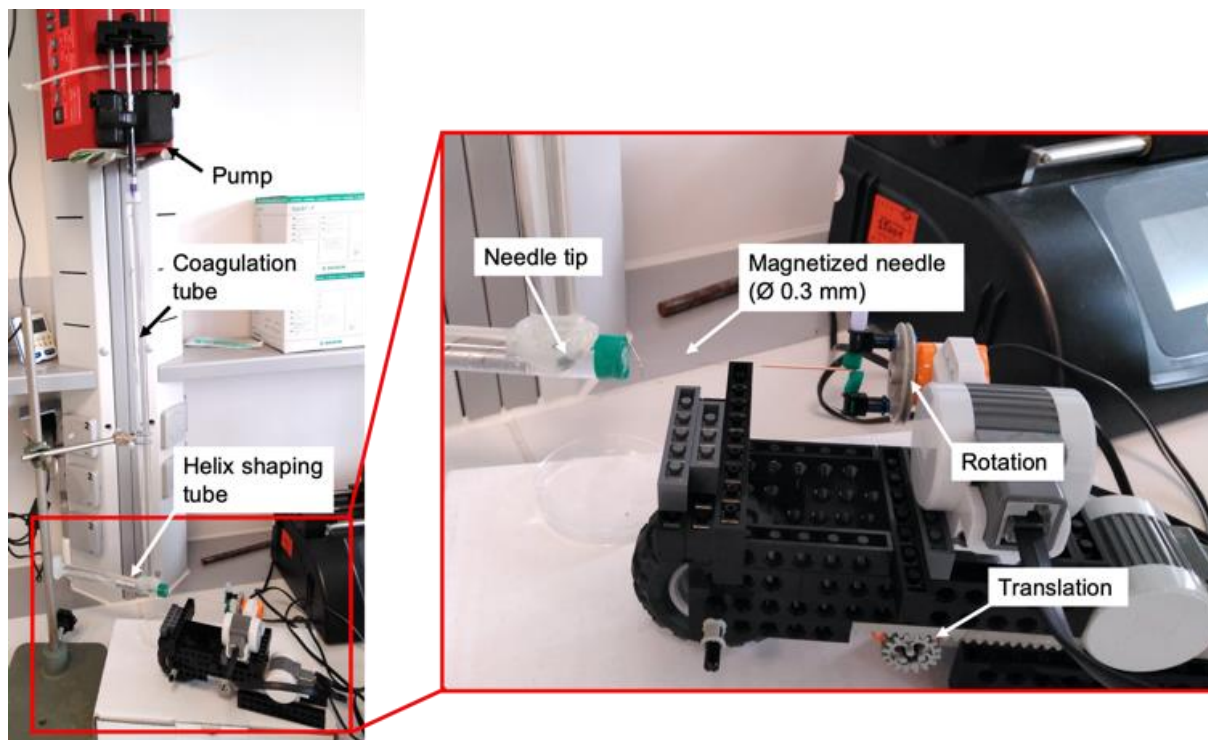


Figure S2: Custom-built setup for the wet-spinning process of helical microfibers. A solution of chitosan containing magnetic iron oxide nanoparticles is extruded into an ethanol coagulation bath. The emerging fibers are collected by a teflon-coated rotating needle with a stainless steel core, which simultaneously performs a translatory movement to achieve a helical fiber shape.

Table S1: Magnetic properties of the samples as determined with VSM.

VSM results	iron oxide concentration			
	1 mg·mL ⁻¹	4 mg·mL ⁻¹	7 mg·mL ⁻¹	10 mg·mL ⁻¹
saturation magnetization [T]	0.012	0.041	0.041	0.052
remanent magnetization [T]	2.99×10^{-4}	7.69×10^{-6}	7.69×10^{-6}	4.80×10^{-3}
coercive field [A·m ⁻¹]	-150	-231	-231	-211
BH_{max} [MGsOe]	4.65×10^{-5}	3.16×10^{-4}	3.16×10^{-4}	3.15×10^{-4}

Table S2: Dynamic light scattering analysis of IOP dispersions in water.

pH	ZP [mV]	pH	Z-ave [nm]	number mean [nm]
10.9	-50.1	10.9	888	128
6.32	-26.4	6.4	684	103
6.52	-27.8	6.6	445	115
3.14	29.9	3.2	380	95