Magnetically responsive colloidal crystals with angle-independent

gradient structural colors in microfluidic droplet arrays

Junjie Chi,^{ab} Changmin Shao,^b Yalan Zhang,^c Dong Ni,^a Tiantian Kong^{*a} and Yuanjin Zhao^{*b}

a Guangdong Key Laboratory for Biomedical Measurements and Ultrasound Imaging, Department of Biomedical Engineering, Shenzhen University, Shenzhen 518060, China.

E-mail: ttkong@szu.edu.cn

State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering,
Southeast University, Nanjing 210096, China.

E-mail: yjzhao@seu.edu.cn

Department of pharmaceutical engineering, School of engineering, China Pharmaceutical
University, Nanjing 211198, China.



Figure S1 a Photographs of the pre-gel solution containing well-dispersed $Fe_3O_4@SiO_2$ colloidal nanoparticles. b Photographs of the composite pre-gel solution with an iridescent color subjected to a spatial magnetic field with remarkable variation in field strength and direction. c The reflection spectra variation of the pre-gel solution as a function of the cyclic application of an external magnetic field with the same field strength and direction.