

**TA-Fe(III) complex coated PS nanospheres for non-iridescent structural
coloration of cotton fabric**

Xiaowei Zhu^a, Yijiang Li^a, Tianchen Wei^a, Yichen Li^{a*}, Tieling Xing^{a*}, Matthew D.

Shawkey^b, Guoqiang Chen^a

a. College of Textile and Clothing Engineering, Jiangsu Engineering Research Center of Textile Dyeing and Printing for Energy Conservation, Discharge Reduction and Cleaner Production (ERC), Soochow University, Suzhou 215123, China;

b. Department of Biology, Evolution and Optics of Nanostructures Group, University of Ghent, Ghent 9000, Belgium

*Corresponding authors: ycli131@suda.edu.cn, ORCID: 0000-0001-8799-8843;
xingtieling@suda.edu.cn, Tel.: +86-512-6706-1175, ORCID: 0000-0002-4136-3137

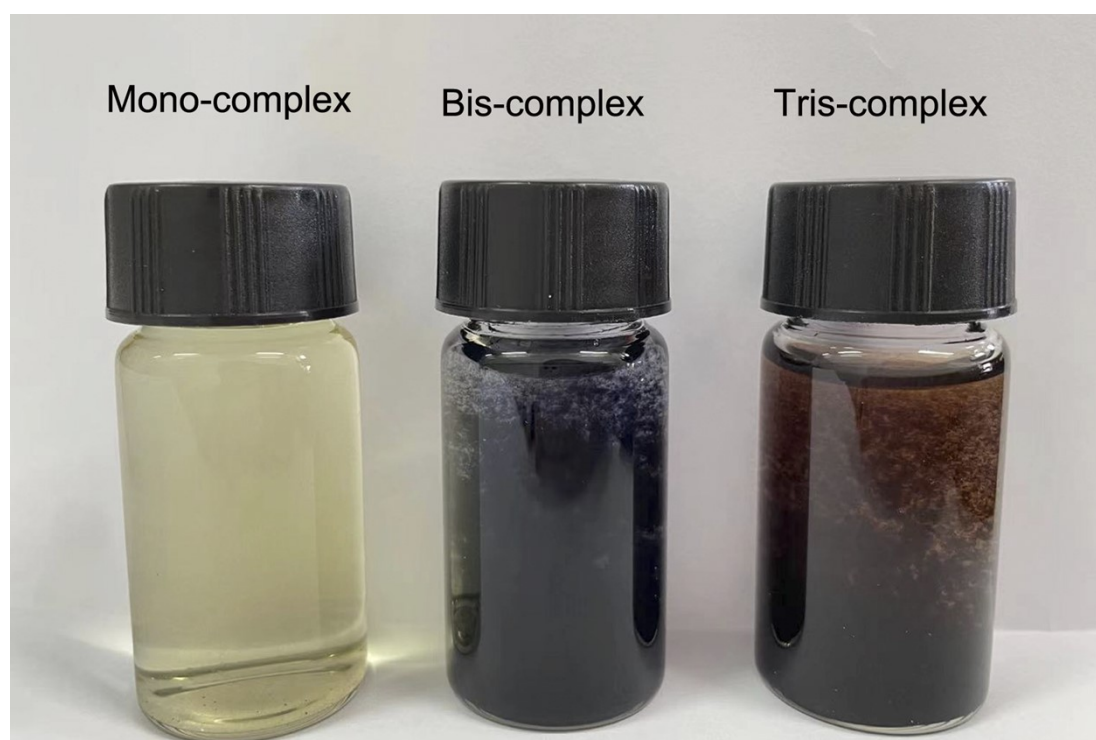


Fig. S1 The digital image of TA-Fe(III) coordination complex dispersion

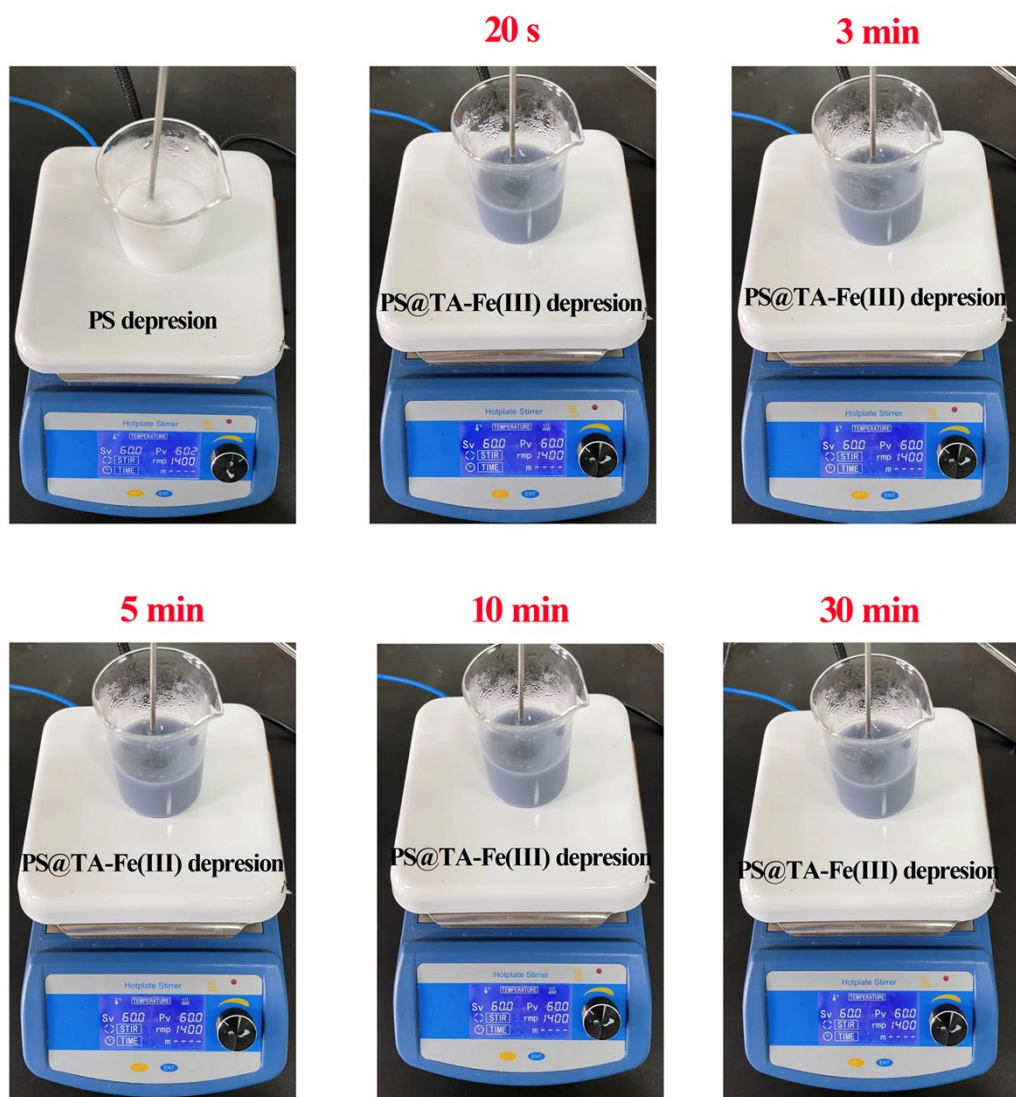


Fig. S2 Sequential digital images depicting TA-Fe(III) shell coated on PS NPs

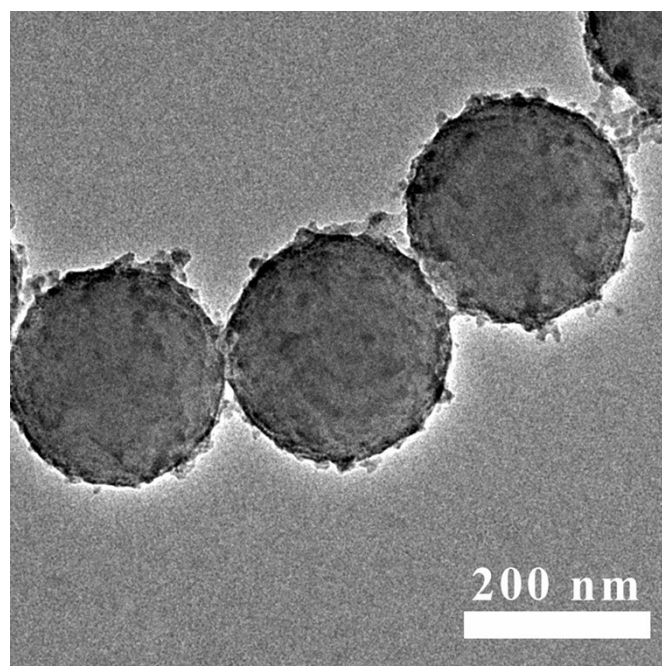


Fig. S3 TEM images of PS@Fe(III)-TA NPs after 1h ultrasonic treatment (the diameter of PS spheres are 245nm)

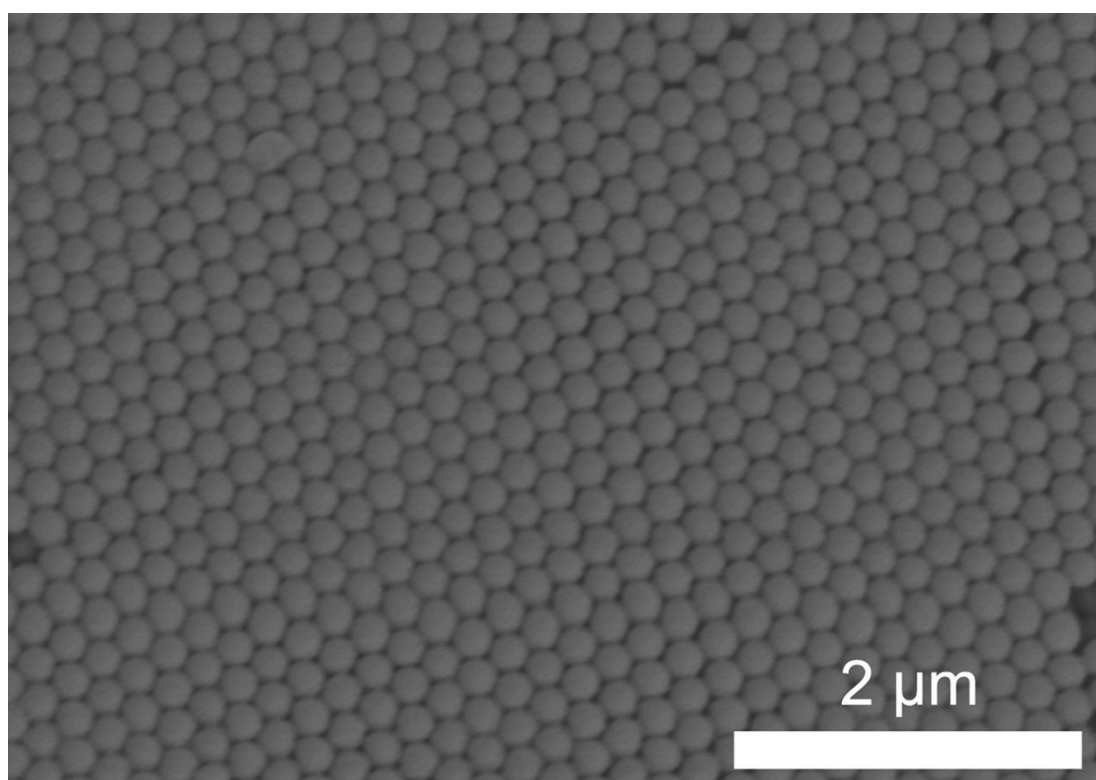


Fig. S4 Top-view SEM images of PS PCs on cotton fabrics

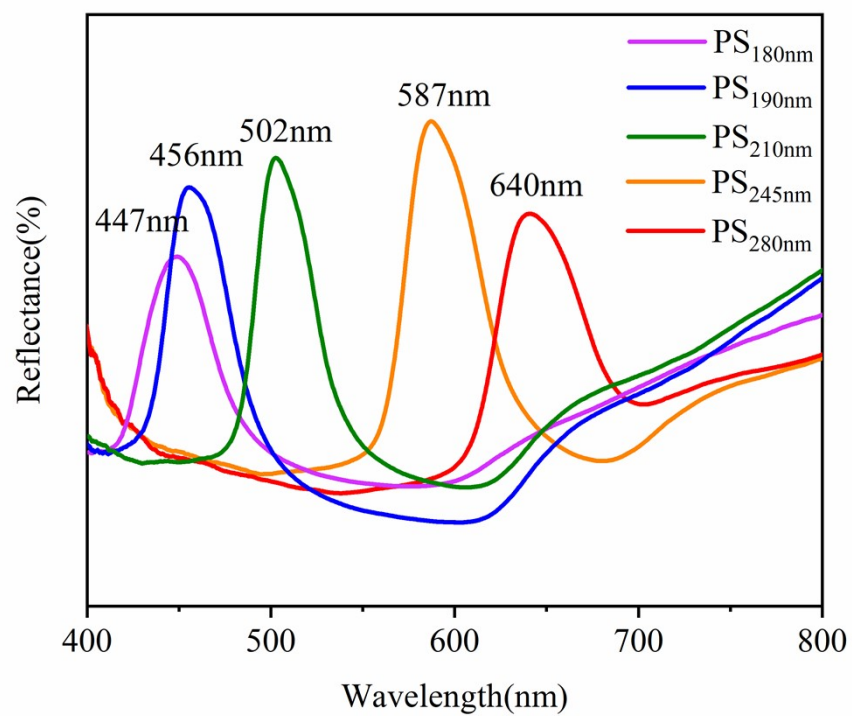


Fig. S5 Reflection spectra of various structurally colored cotton fabric fabricated by PS NPs