

## Supporting Information

### Smart color-changing textile with high contrast based on single-sided conductive fabric

Guangxi Huang,<sup>a</sup> Lianmei Liu,<sup>b</sup> Rui Wang,<sup>a</sup> Jing Zhang,<sup>a</sup> Xuemei Sun,<sup>\*a</sup> Huisheng Peng<sup>\*a</sup>

<sup>a</sup>State Key Laboratory of Molecular Engineering of Polymers, Collaborative Innovation Center of Polymers and Polymer Composite Materials, Department of Macromolecular Science and Laboratory of Advanced Materials, Fudan University, Shanghai 200438, China. E-mail: [sunxm@fudan.edu.cn](mailto:sunxm@fudan.edu.cn), [penghs@fudan.edu.cn](mailto:penghs@fudan.edu.cn)

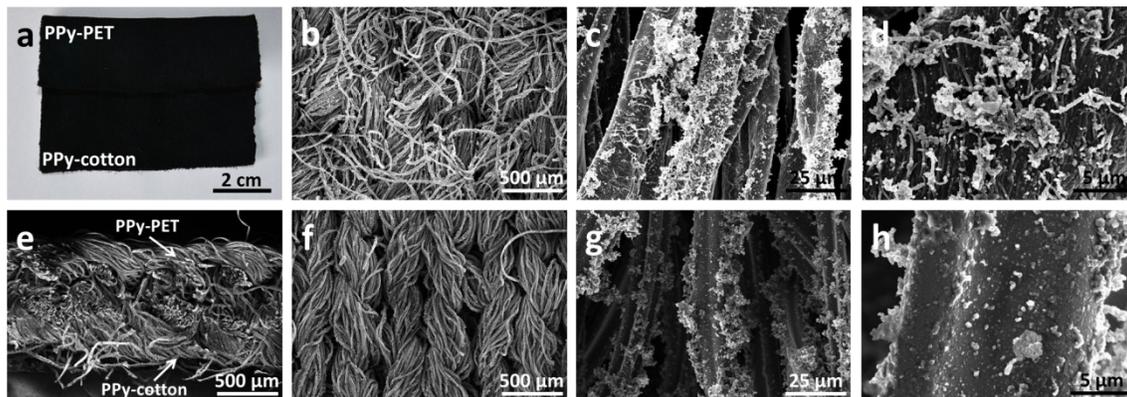
<sup>b</sup>Key Lab of Textile Science & Technology, Ministry of Education, State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Textiles, Donghua University, Shanghai 201620, China.

### Supporting Videos

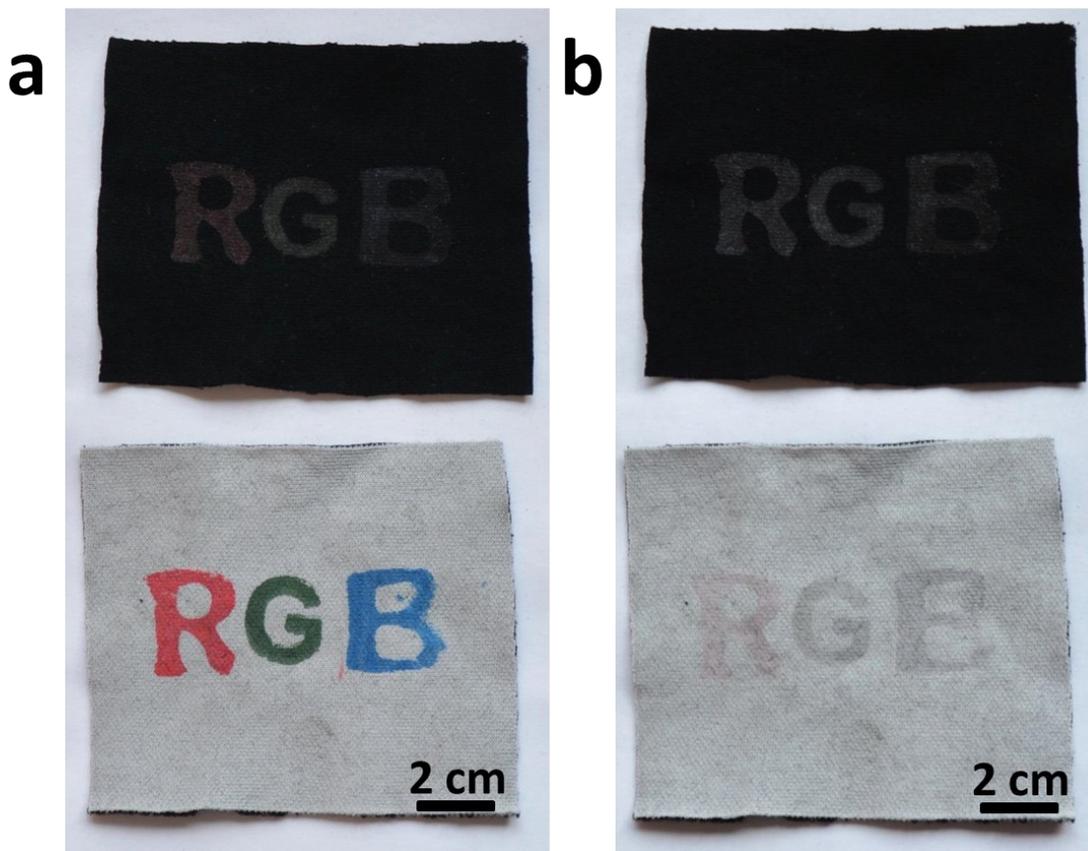
**Video S1:** The color-changing process of the smart textile painted with a blue letter “F”. The video was speeded up by a factor of 5 times for viewing convenience.

**Video S2:** The color-changing process of the smart textile painted with a green letter “D”. The video was speeded up by a factor of 5 times for viewing convenience.

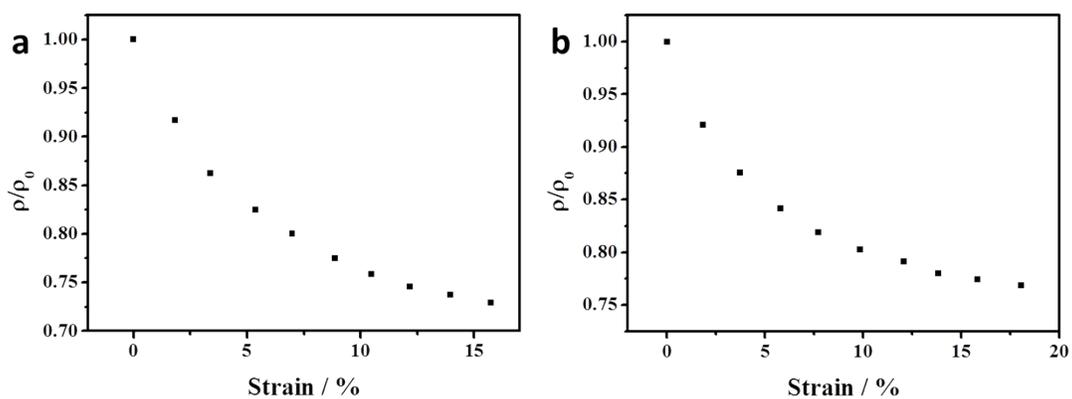
## Supporting Figures



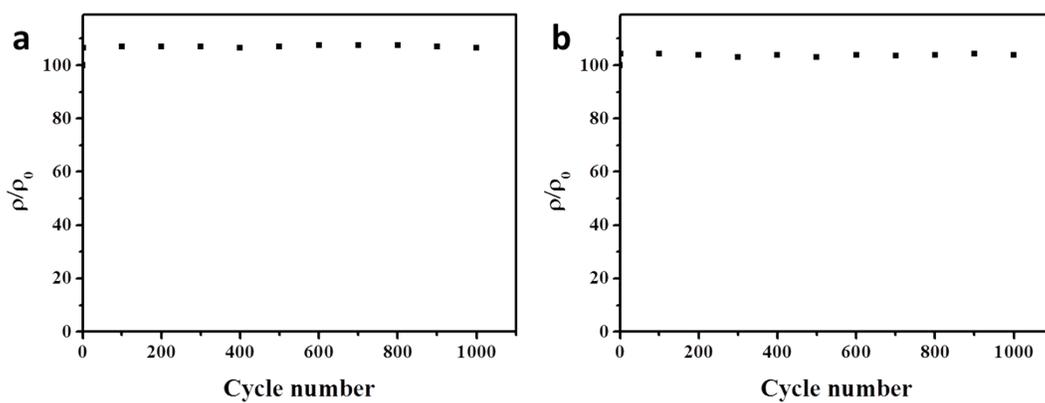
**Fig. S1** (a) Photograph of a black conductive fabric. (b-d) SEM images of the cotton side. (e) Cross-sectional SEM image. (f-h) Polyester side of the black conductive fabric.



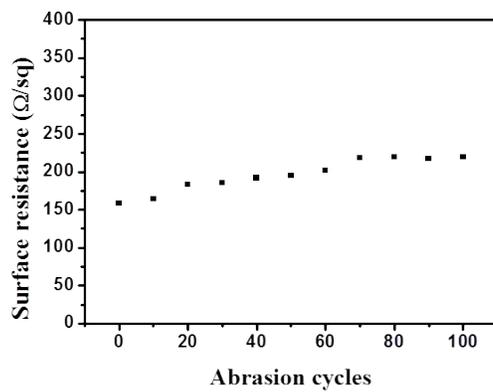
**Fig. S2** Photographs of the black and single-sided conductive fabrics painted with thermochromic ink (a) before and (b) after heating to exceed the transition temperature of the thermochromic ink on a thermal platform.



**Fig. S3** Dependence of electrical resistance of the single-sided conductive fabric during the mechanical stretching process at (a) course and (b) wale directions.



**Fig. S4** Dependence of electrical resistance of the single-sided conductive fabric on stretched cycle number at a strain of 10% at (a) course and (b) wale directions.



**Fig. S5** Surface resistance vs. abrasion cycle of the single-sided conductive fabric.