

Article

Self-Cleaning Cotton Obtained After Grafting Thermoresponsive Poly(*N*-vinylcaprolactam) Through Surface-Initiated Atom Transfer Radical Polymerization

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Supplementary Materials:

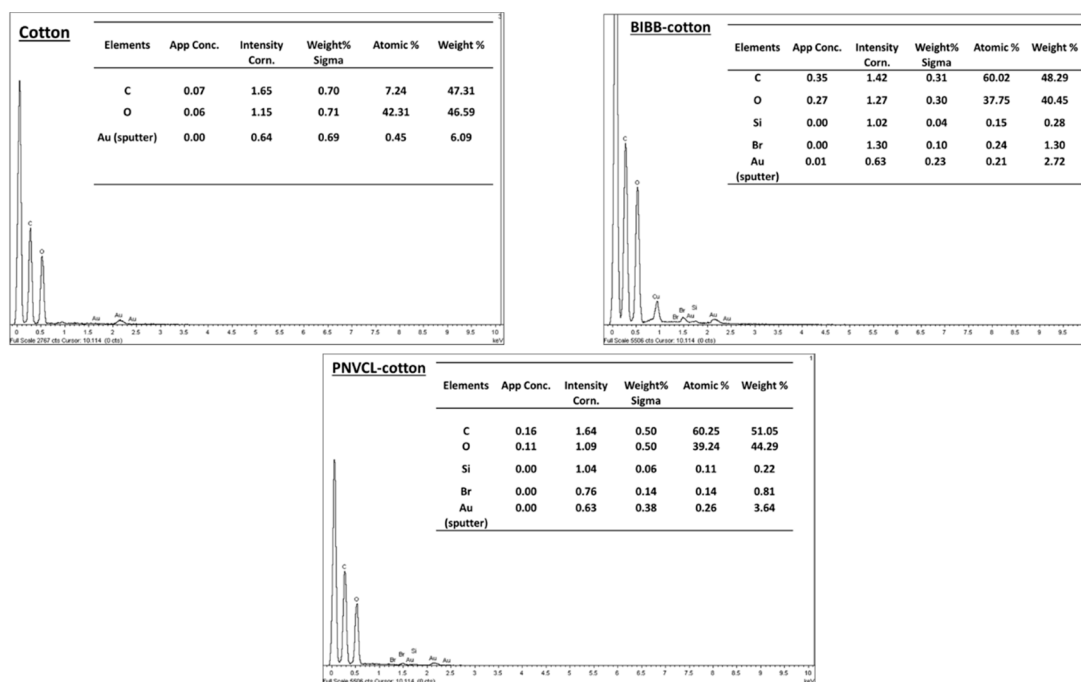


Figure S1. EDS spectra and elemental measurements of the Cotton, Cotton-BiBB and Cotton-PNVCL fabrics.

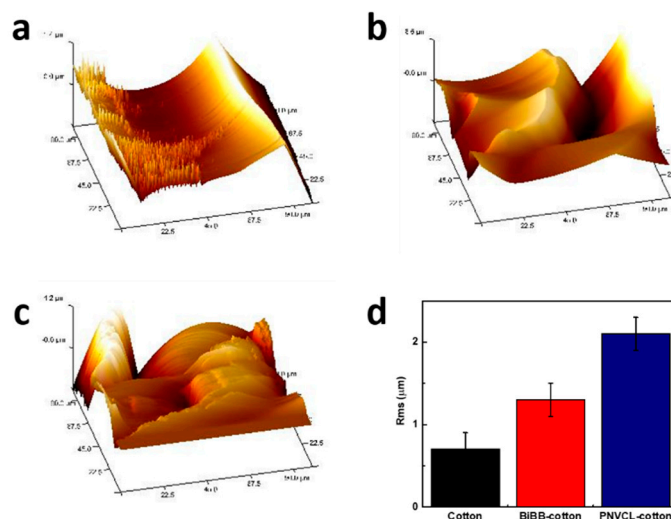


Figure S2. (a–c) AFM images of the (a) Cotton, (b) Cotton-BiBB, and (c) Cotton-PNVCL fabrics. (d) Quantitative roughness analysis of each of the fabrics.

| Polymerization time (H) | Before polymerization (Wa) | After polymerization (Wb) | Amount of polymer grafted (Wb-Wa) | Grafting yield (%) | Average | Standard deviation |
|-------------------------|----------------------------|---------------------------|-----------------------------------|--------------------|---------|--------------------|
| 2 | 0.3 | 0.33 | 0.03 | 9.1 | 9.5 | 1.2 |
| | 0.32 | 0.35 | 0.03 | 8.6 | | |
| | 0.33 | 0.37 | 0.04 | 10.8 | | |
| 4 | 0.27 | 0.31 | 0.04 | 12.9 | 12.0 | 1.5 |
| | 0.35 | 0.39 | 0.04 | 10.3 | | |
| | 0.34 | 0.39 | 0.05 | 12.8 | | |
| 6 | 0.35 | 0.42 | 0.07 | 16.7 | 17.0 | 1.0 |
| | 0.36 | 0.44 | 0.08 | 18.2 | | |
| | 0.36 | 0.43 | 0.07 | 16.3 | | |
| 8 | 0.34 | 0.45 | 0.11 | 24.4 | 25.2 | 0.9 |
| | 0.3 | 0.4 | 0.1 | 25.0 | | |
| | 0.31 | 0.42 | 0.11 | 26.2 | | |
| 10 | 0.29 | 0.43 | 0.14 | 32.6 | 32.6 | 0.7 |
| | 0.32 | 0.47 | 0.15 | 31.9 | | |
| | 0.3 | 0.45 | 0.15 | 33.3 | | |
| 12 | 0.25 | 0.41 | 0.16 | 39.0 | 37.1 | 3.8 |
| | 0.32 | 0.53 | 0.21 | 39.6 | | |
| | 0.35 | 0.52 | 0.17 | 32.7 | | |
| 14 | 0.32 | 0.53 | 0.21 | 39.6 | 37.8 | 3.9 |
| | 0.34 | 0.57 | 0.23 | 40.4 | | |
| | 0.36 | 0.54 | 0.18 | 33.3 | | |
| 16 | 0.36 | 0.62 | 0.26 | 41.9 | 39.1 | 3.8 |
| | 0.35 | 0.59 | 0.24 | 40.7 | | |
| | 0.3 | 0.46 | 0.16 | 34.8 | | |

Figure S3. Quantitative data for grafting yield analysis used to plot figure 2a.



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