

Supporting Information

Linear Control of Moisture Permeability and Anti-adhesion of Bacteria in a Broad Temperature Region Realized by Cross-Linking Thermoresponsive Microgels onto Cotton Fabrics

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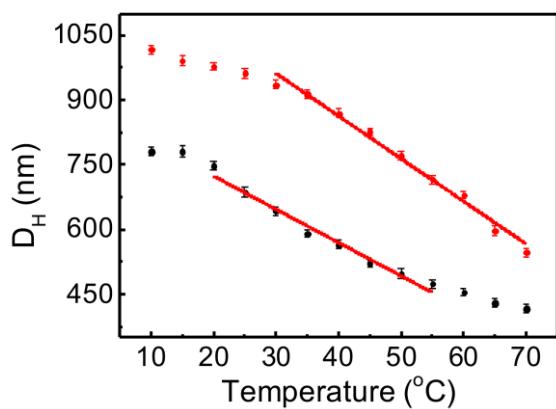


Figure S1. Hydrodynamic diameters (D_H) of P(MEO₂MA-*co*-OEGMA₃₀₀-*co*-EGMA) microgels with different molar ratios of MEO₂MA to OEGMA₃₀₀ (1:2, red dots and 2:1, black dots) as a function of the temperature. The red lines are a guide to the eye.

Table S1. Dispersion index (DI) of P(MEO₂MA-*co*-OEGMA₃₀₀-*co*-EGMA) microgels as a function of temperature.

T (°C) ratio	10	15	20	25	30	35	40	45	50	55	60	65	70
2:1	0.052	0.199	0.134	0.201	0.046	0.04	0.035	0.059	0.07	0.109	0.152	0.179	0.174
1:1	0.149	0.057	0.116	0.183	0.161	0.191	0.102	0.027	0.167	0.125	0.102	0.073	0.023
1:2	0.138	0.158	0.186	0.086	0.104	0.085	0.092	0.164	0.126	0.116	0.158	0.103	0.106

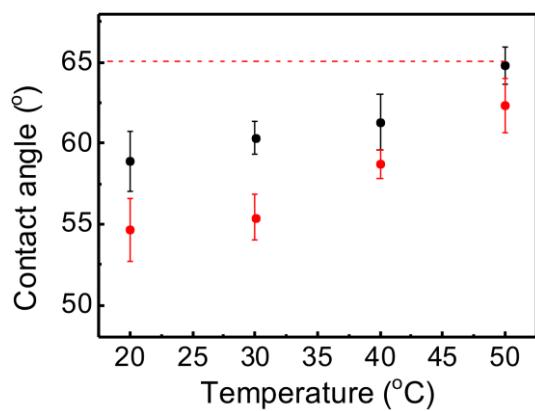


Figure S2. Temperature dependence of the water contact angle on P(MEO₂MA-*co*-OEGMA₃₀₀-*co*-EGMA) microgels films with different molar ratios of MEO₂MA and OEGMA₃₀₀ (1:2, red dots and 2:1, black dots). The red dashed line is a guide to the eye.

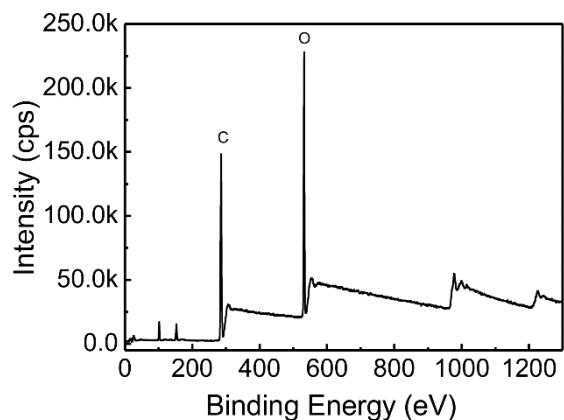


Figure S3. XPS spectrum of C and O elements on a P(MEO₂MA-*co*-OEGMA₃₀₀-*co*-EGMA) microgels surface.

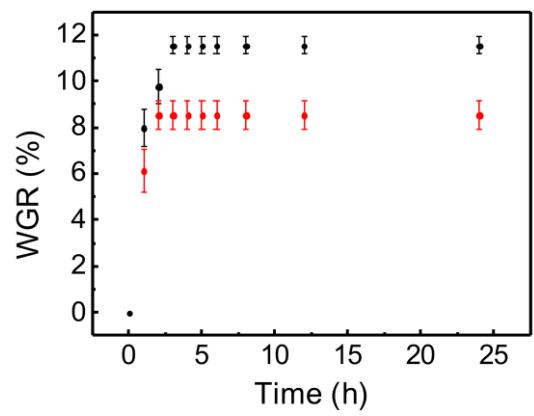


Figure S4. Absorption of water vapor in original cotton fabrics (red dots) and cotton fabrics cross-linked with P(MEO₂MA-*co*-OEGMA₃₀₀-*co*-EGMA) microgels (30% WGR, black dots) as a function of the time.

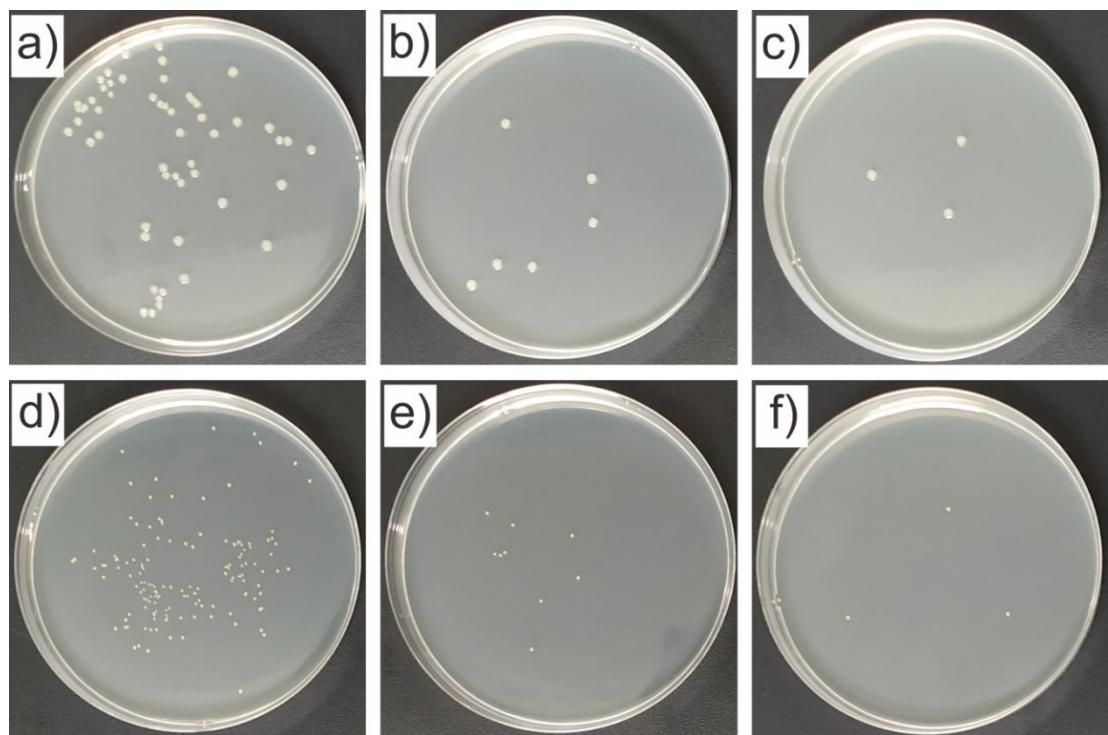


Figure S5. Anti-adhesion of E. coli and S. aureus in original cotton fabrics (a and d), cotton fabrics cross-linked with 15% WGR (b and e) and 30% WGR (c and f) of P(MEO₂MA-*co*-OEGMA₃₀₀-*co*-EGMA) microgels at 30 °C.