

Fig. S1 Schematic representation of the voltage step method.

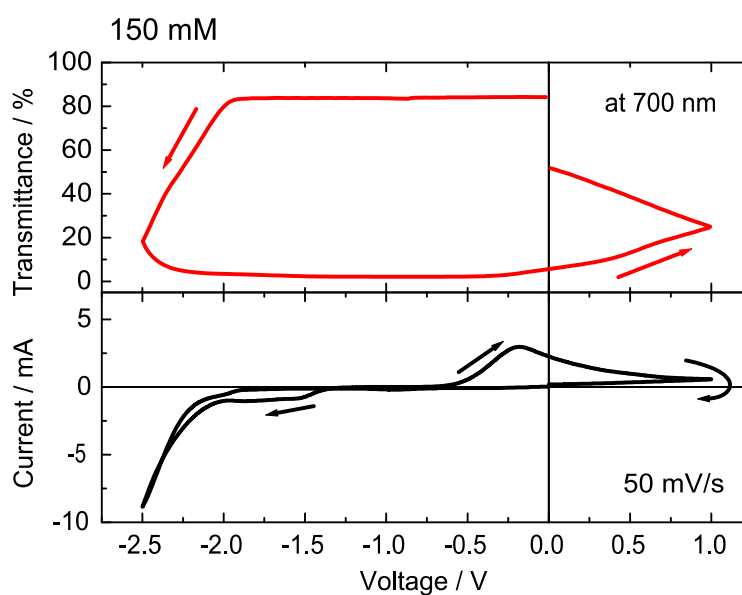
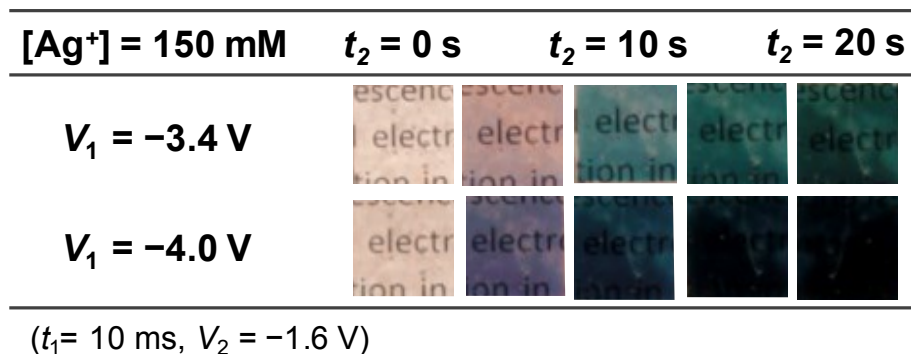
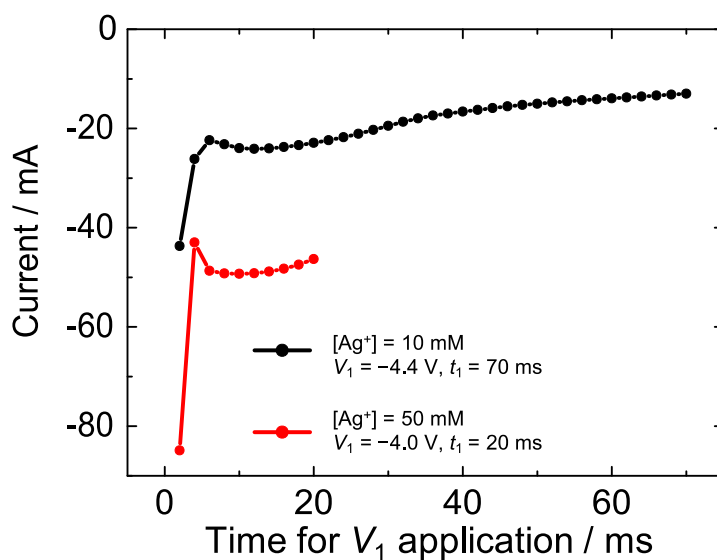


Fig. S2 Change in the transmittance at 700 nm (top) and cyclic voltammogram in a two-electrode system (bottom) of the EC device containing 150 mM of  $\text{Ag}^+$  ion.



**Fig. S3** Photographs of the EC device containing 150 mM of Ag<sup>+</sup> ion taken on a lightbox during  $V_2$  applications. Voltage-application sequences were  $V_1 = -3.4$ , or  $-4.4$  V,  $t_1 = 10$  ms;  $V_2 = -1.6$  V,  $t_2 = 20$  s.



**Fig. S4** Change in currents during  $V_1$  application for 10 mM ( $-4.4$  V) and 50 mM ( $-4.0$  V) devices. The black line shows the 10 mM device and the red line shows the 50 mM device.