Electronic Supplementary Material (ESI) for Polymer Chemistry

Supporting Information

Reducing Polyazomethine to Poly(N-phenylbenzylamine) with Near Infrared Electrochromic, Fluorescence and Photovoltaic Properties

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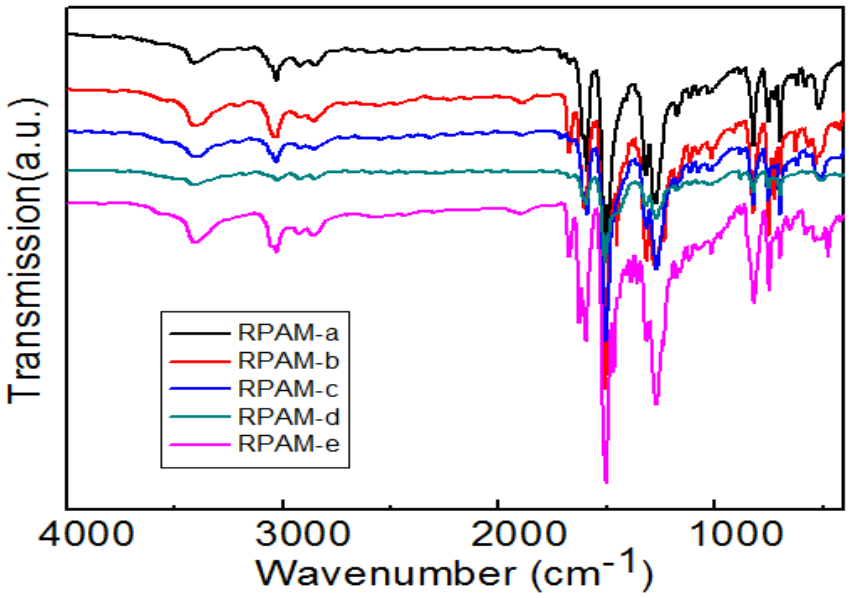

Fig.S1 IR spectra of RPAM-a-RPAM-e

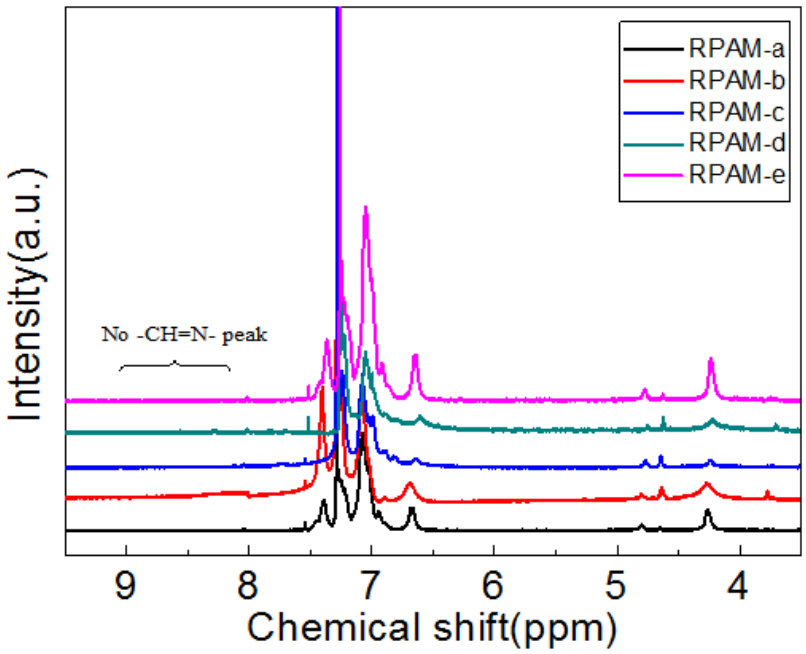

Fig. S2 ^{1}H NMR spectra of RPAM-a – RPAM-e

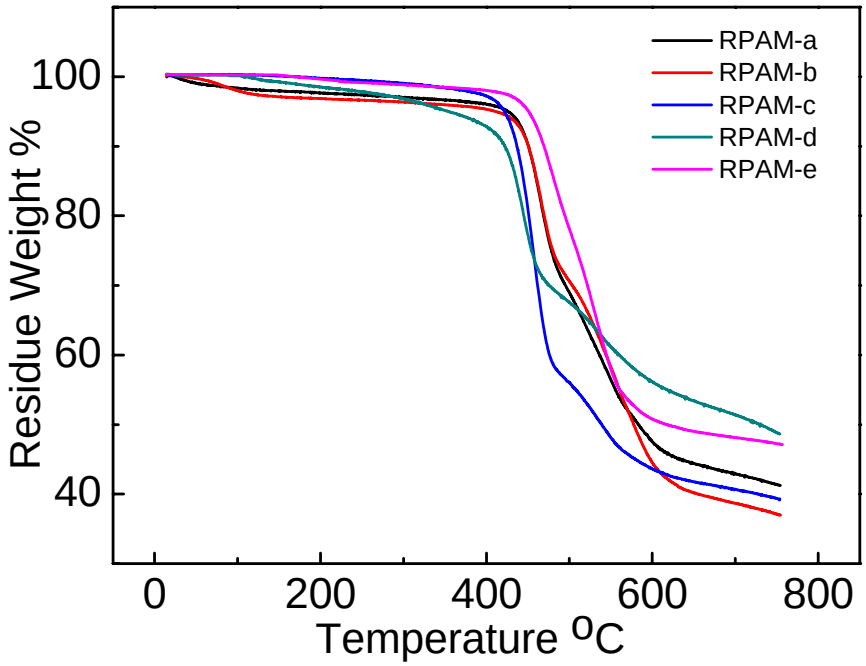

Fig. S3 TG diagrams of RPAM-a to RPAM-e

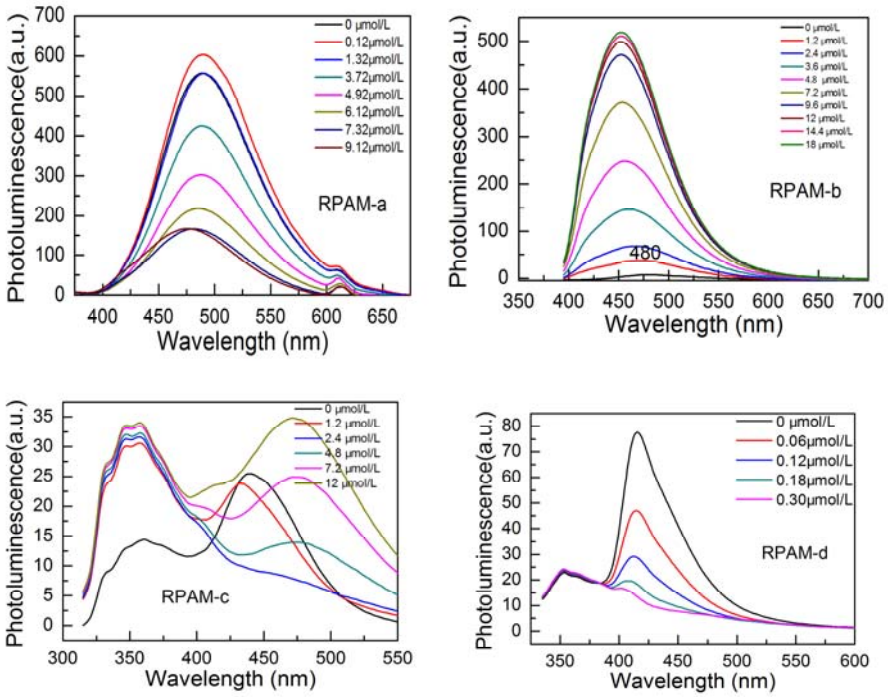

Fig.S4 Changes of PL intensity of RPAM-a - RPAM-d in THF before and after addition of TFA in THF. (The inset describes the PL dependence of the concentration of TFA)

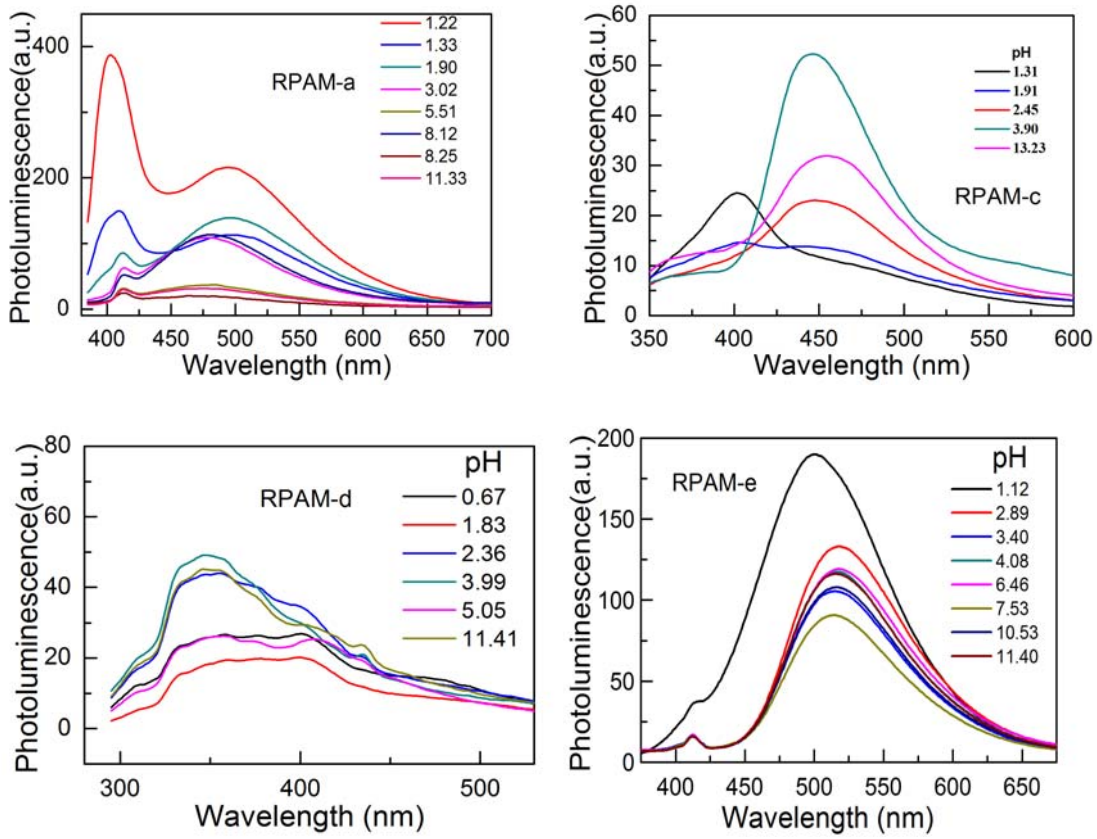

Fig.S5 PL spectra of RPAM-b (concentration: 1.0×10^{-5}mol L^{-1} C-N bonds) on addition of various concentrations of proton in the mixed solvent (THF/H_2O 1:1 v/v).

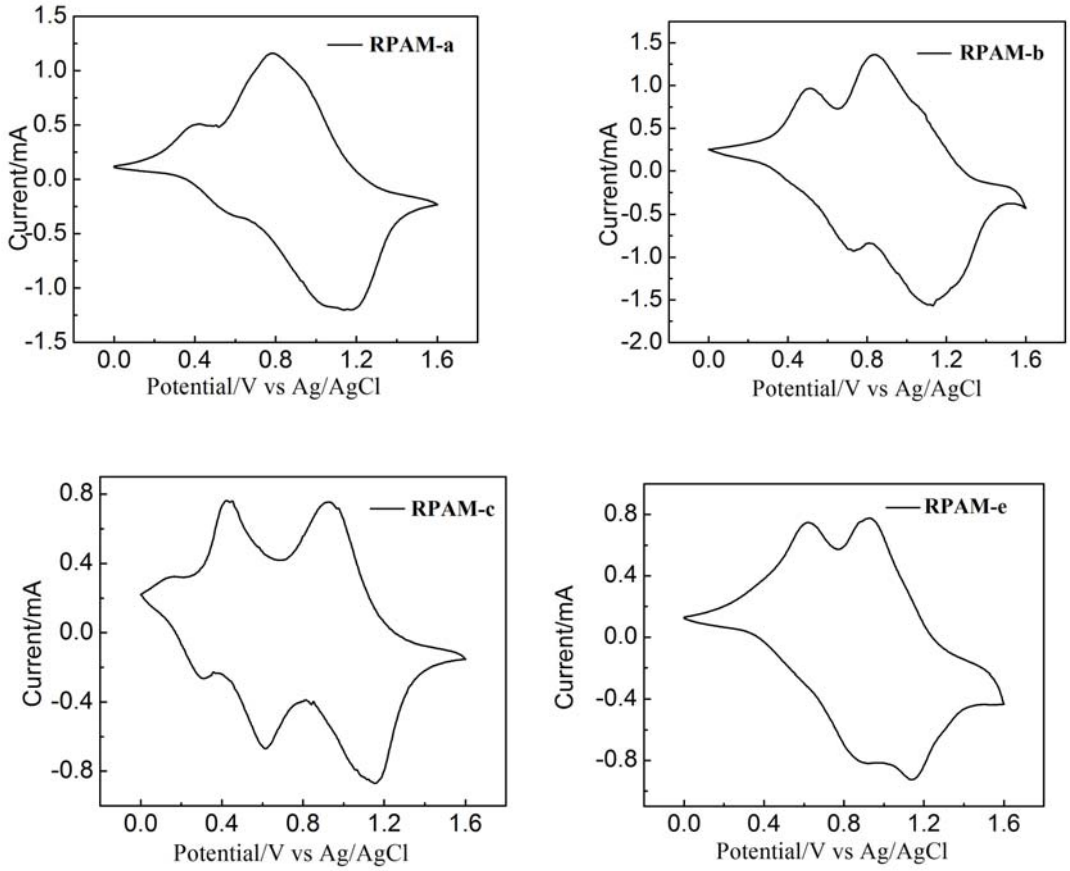

Fig.S6 Repetitive CV scanning of the RPAM-a, RPAM-b, RPAM-c, RPAM-e film on the ITO/glass electrode in 0.1 M $LiClO_4$/MeCN solution over the potential range from 0 to 1.6 V at a scan rate of 50 mV/s

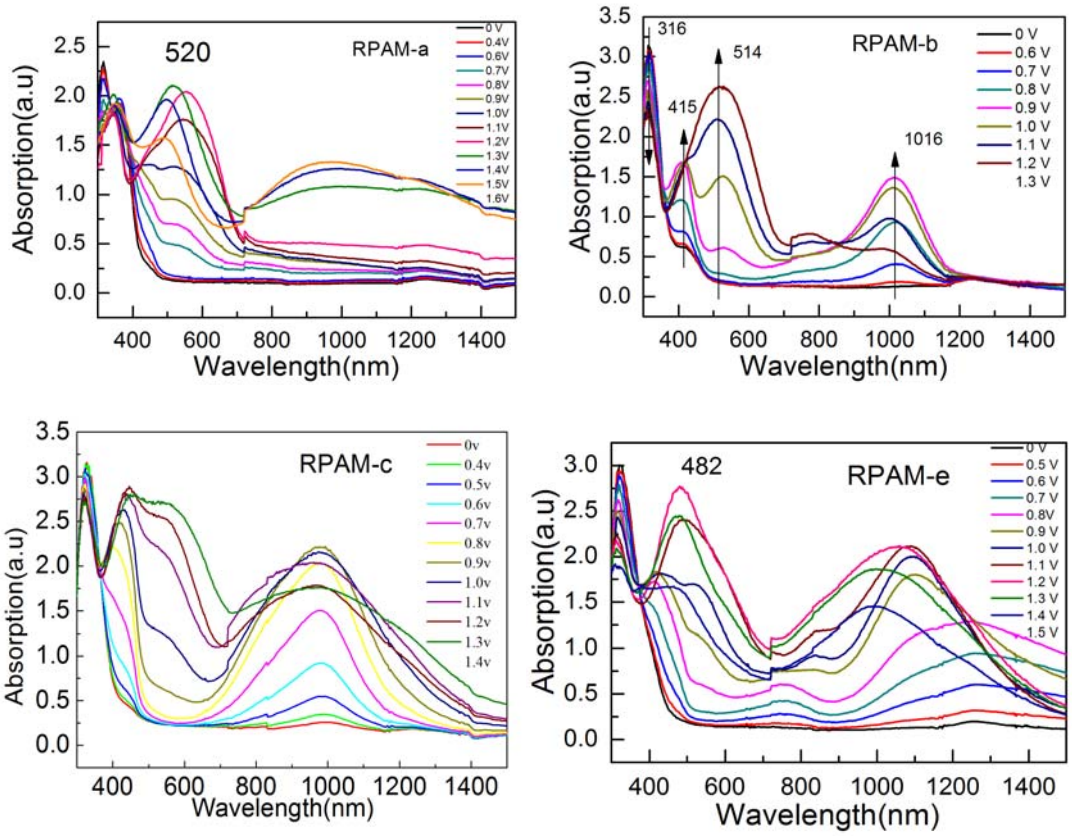

Fig.S7 Electrochromic behavior of RPAM-a, RPAM-b, RPAM-c, RPAM-e thin film (in CH_3CN with 0.1 M $LiClO_4$ as the supporting Electrolyte) 0.0-1.6(V vs. Ag/AgCl)

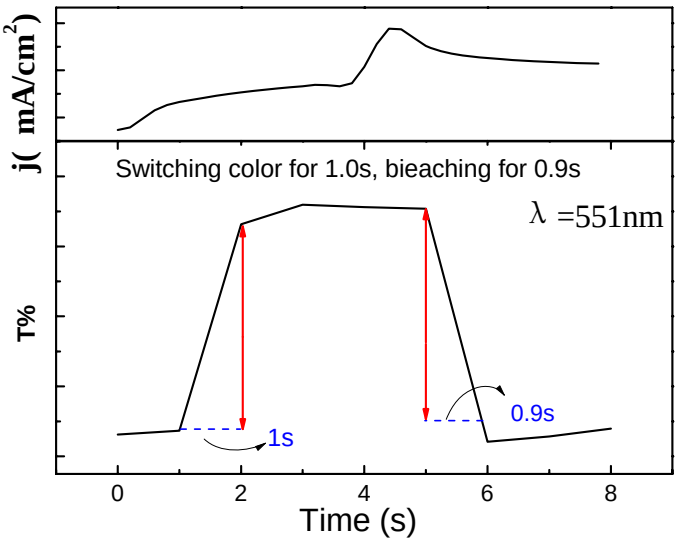

Fig. S8 Dynamic changes of the transmittance and current upon switching the potential between -0.2 and 1.0 V (vs. Ag/ AgCl) with a pulse width of 8 s applied to the cast film of polymer RPAM-d on the ITO-coated glass slide in MeCN containing 0.1 mol L^{-1} $LiClO_4$. The absorption was recorded at 551 nm.

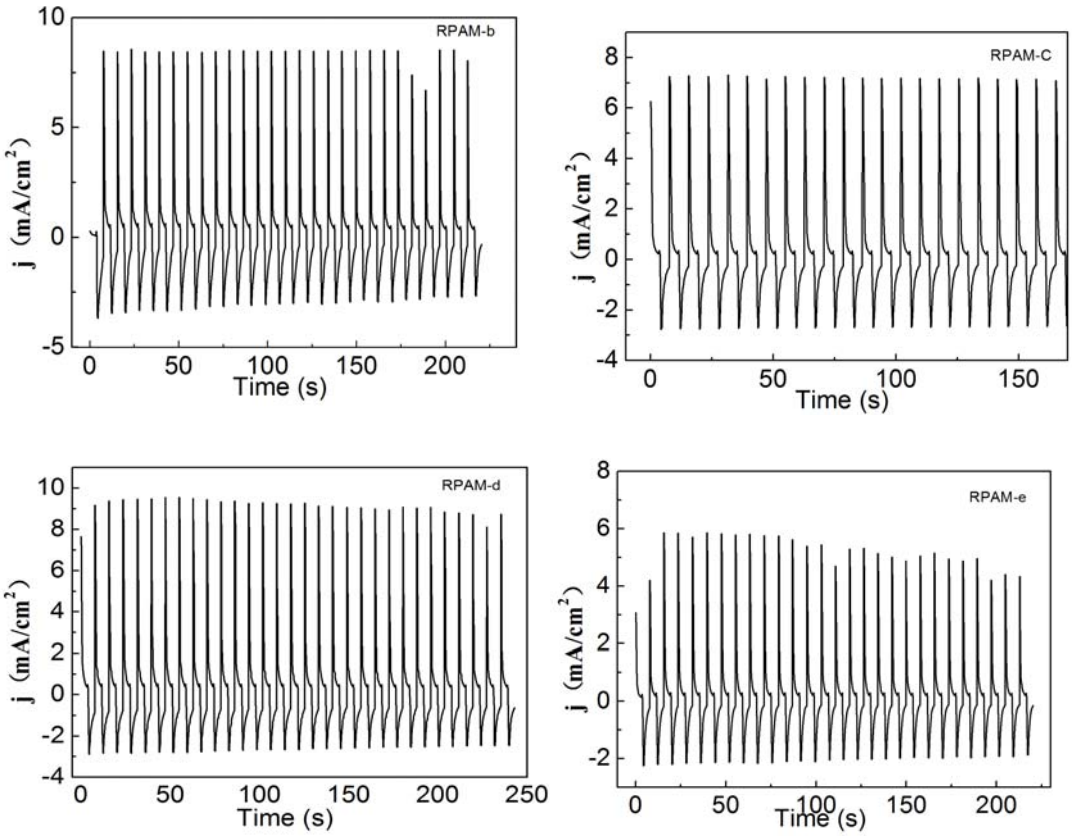

Fig.S9 Current consumption between -0.2 and 1.0 V (vs. Ag/AgCl) of polymer RPAM-b, RPAM-c, RPAM-d, RPAM-e thin film on the ITO-coated glass substrate in a 0.1 $moll^{-1}$ $LiClO_4/CH_3CN$ solution with a cycle time of 8 s.

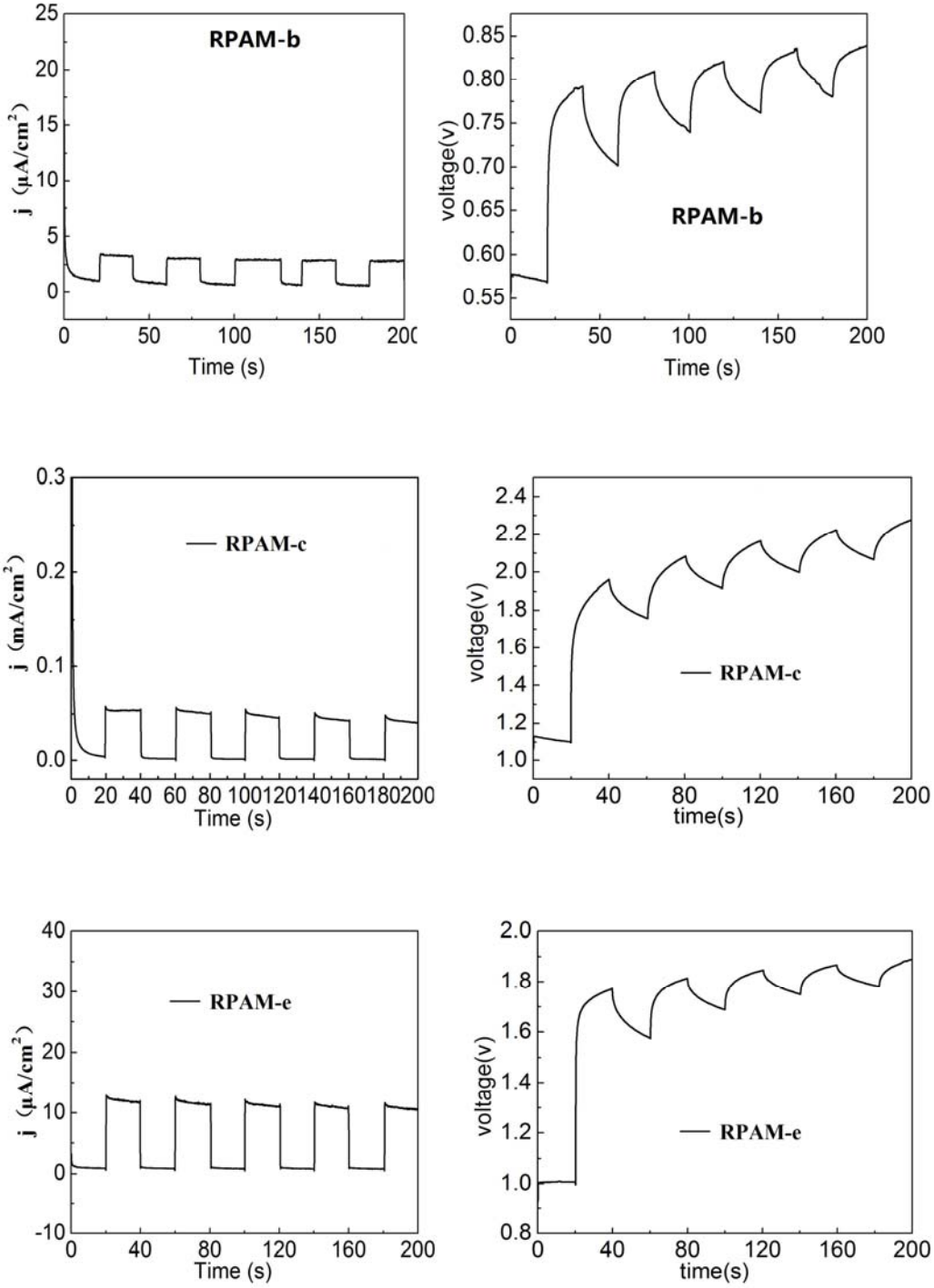

Fig.S10 A typical photocurrent and photovoltaic response for an RPAM-b ,RPAM-c, RPAM-e immobilized ITO glass upon exposure to on/off light at room temperature.