Supplementary Information

ELECTRICAL AND MECHANICAL PROPERTIES OF SELF-SUPPORTED HYDROXYPROPYL METHYLCELLULOSE-POLYANILINE CONDUCTING FILMS

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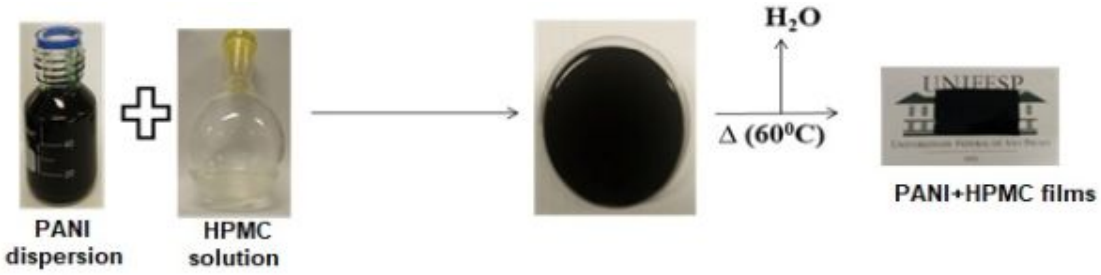

Figure 1S: Artwork representing the preparation of PANI_HPMC films

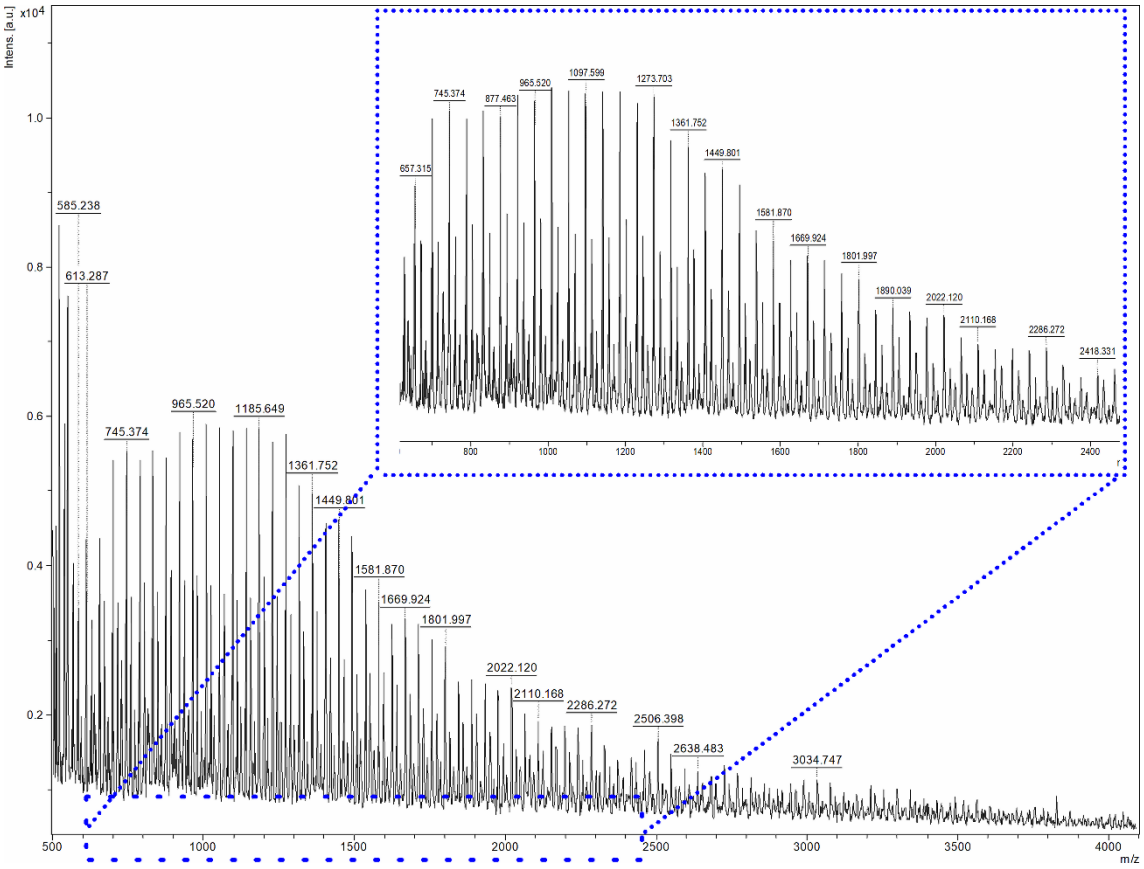

Figure 2S: MADI-TOF analysis of PANI dispersion (The inset shows an expanded region. The peak at m/z = 2418.331 corresponds to the 26-mer (26 * 93)

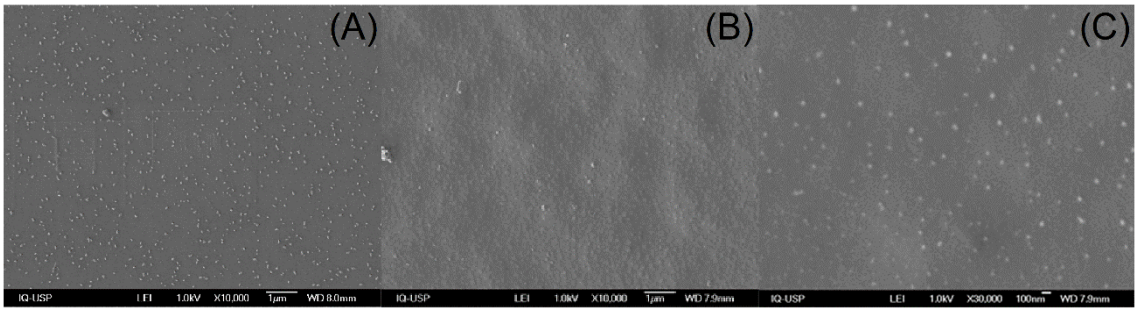

Figure 3S: SEM images of HPMC (A), PANI (B) and PANI_40%HPMC (C)

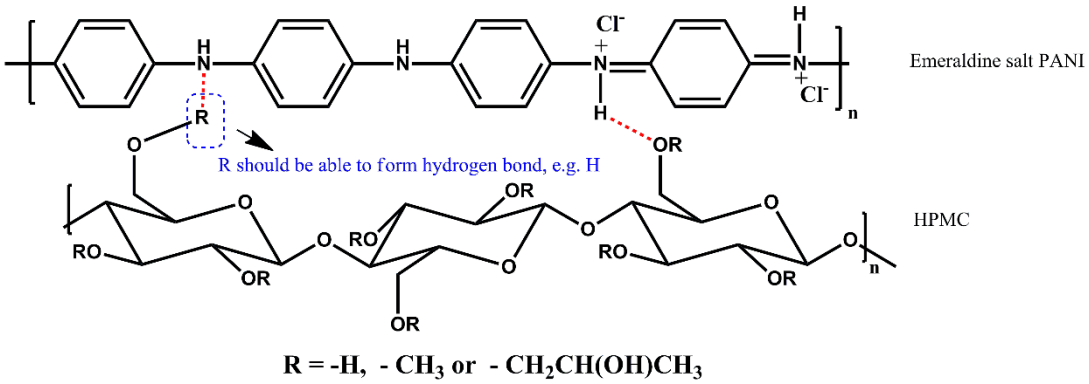

Figure 4S: Proposed chemical interaction between PANI (emeraldine salt form) and HPMC

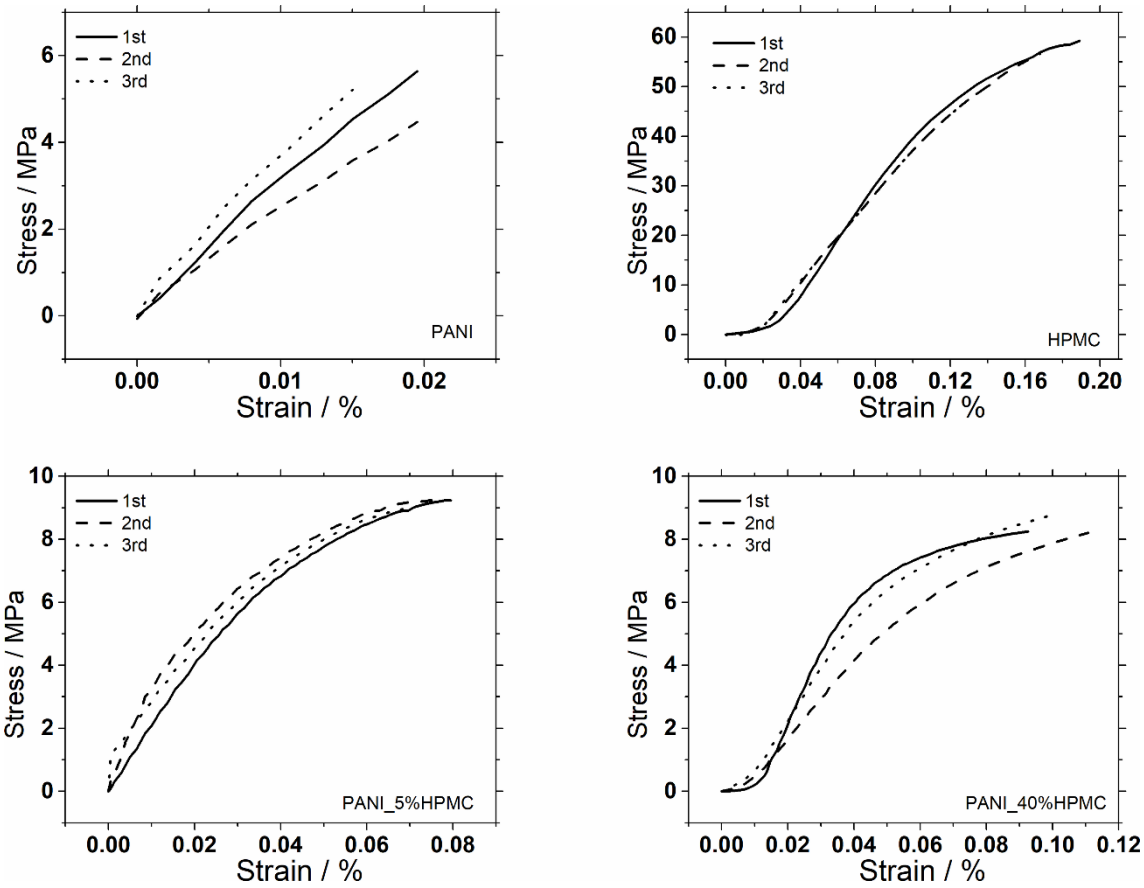

Figure 5S: Stress-strain curves of the samples

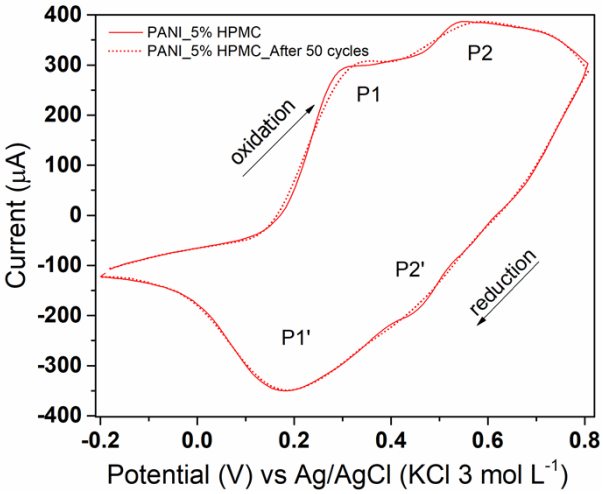

Figure 6S: Cyclic voltammograms of PANI_5%HPMC after 50 cycles. Scan rate 100 mV s^{-1} in 1.0 M HCl aqueous solution.

Note 1

Chemical equation of polymerization of aniline by ammonium persulfate

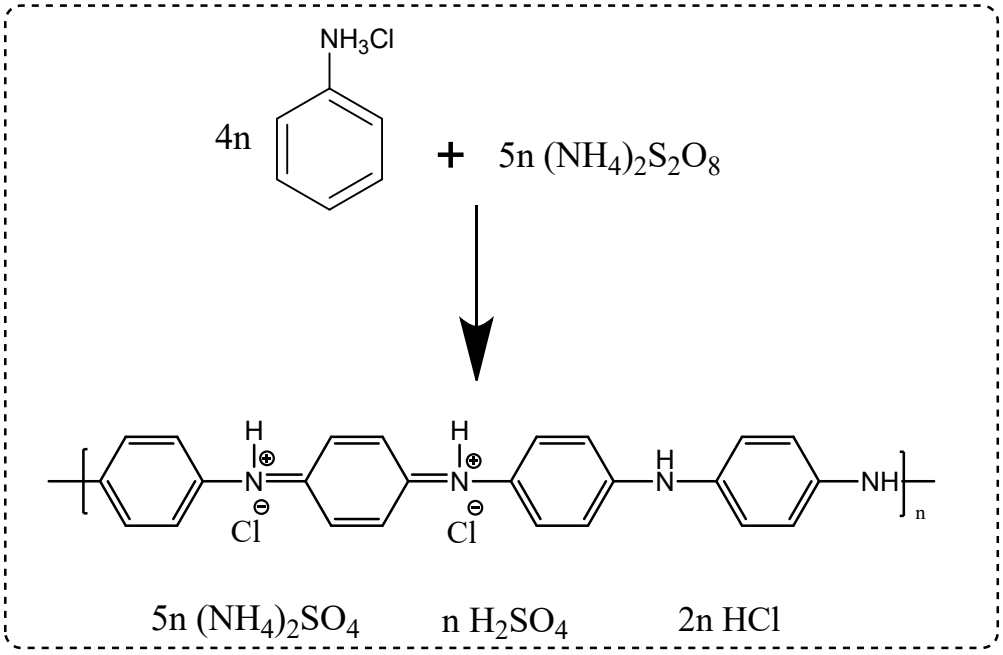

Table 1S: Amounts of reagents

	Aniline	**$(NH_4)_2S_2O_8$**	**PANI/ doped with 2 Cl^-**	**PVP***
molar mass (g mol^{-1})	93	228	435	--
Initial number of mol (mmol)	20	25	----	----
Final number of mol (mmol)	----		5.0	
Final mass (g)	----	----	2.18	2.00

**it was added 50 mg of an aqueous solution of PVP (40 g L^{-1})*

- ✓ **Considering the stoichiometry of the reaction and the complete conversion (100 % yield), the total mass of the dispersion would be 4.18 g (2.18 g (PANI/2Cl^-) + 2.00 g (PVP)**
- ✓ **Therefore, the PANI dispersion has 52 wt % of PANI and 48 wt% of PVP.**