



Supporting Information

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**pH-Responsive Aminomethyl Functionalized Poly(*p*-xylylene)
Coatings by Chemical Vapor Deposition Polymerization**

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1 AFM

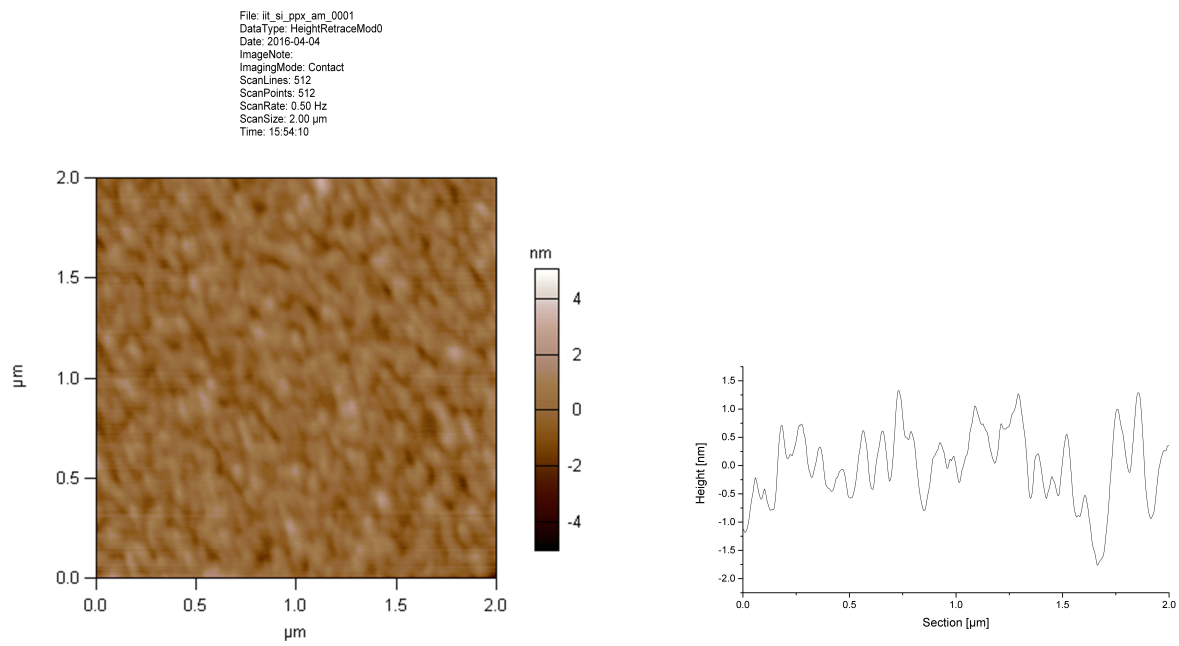


Figure S1: AFM height image and corresponding section of a 20nm PPX-AM coating on silicon. A MFP-3D BIO (Asylum Research) AFM was used in tapping mode.

2 XPS spectra

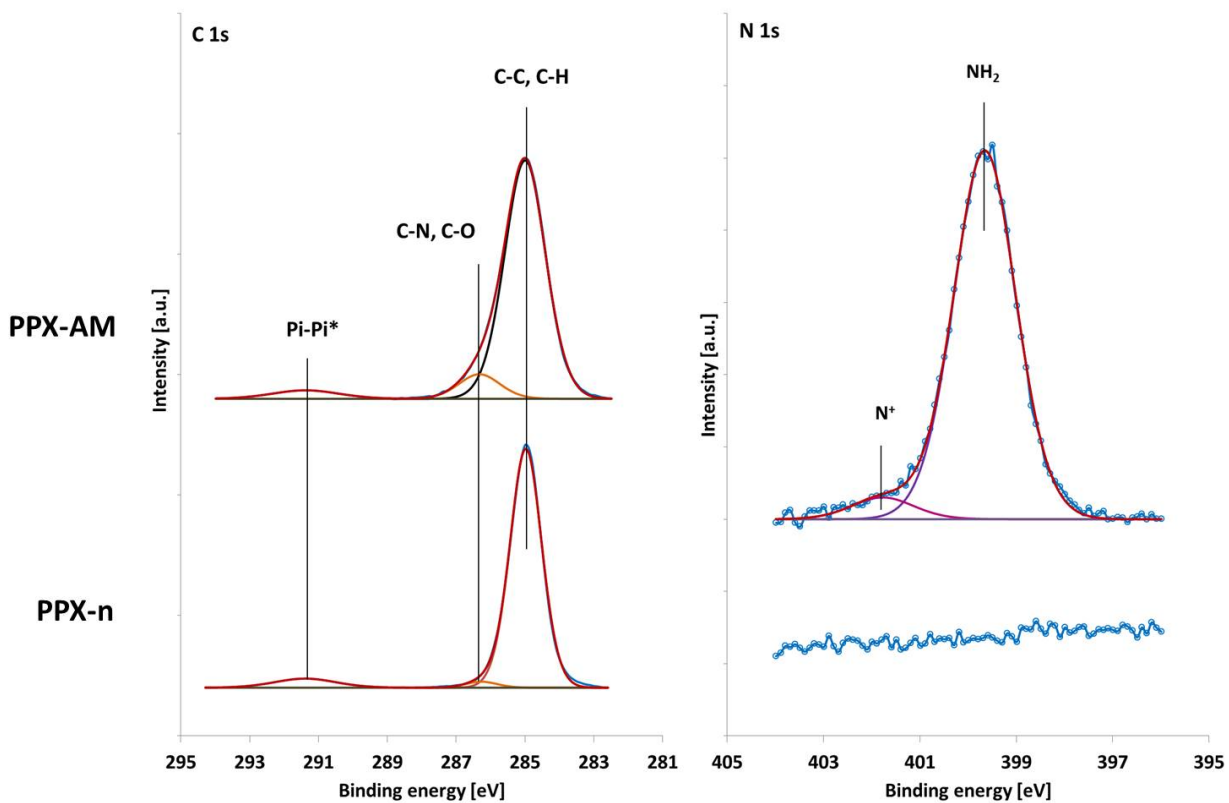


Figure S2: High Resolution XPS spectra of PPX-n and PPX-AM.

3 Coated Filter Paper

3.1 SEM

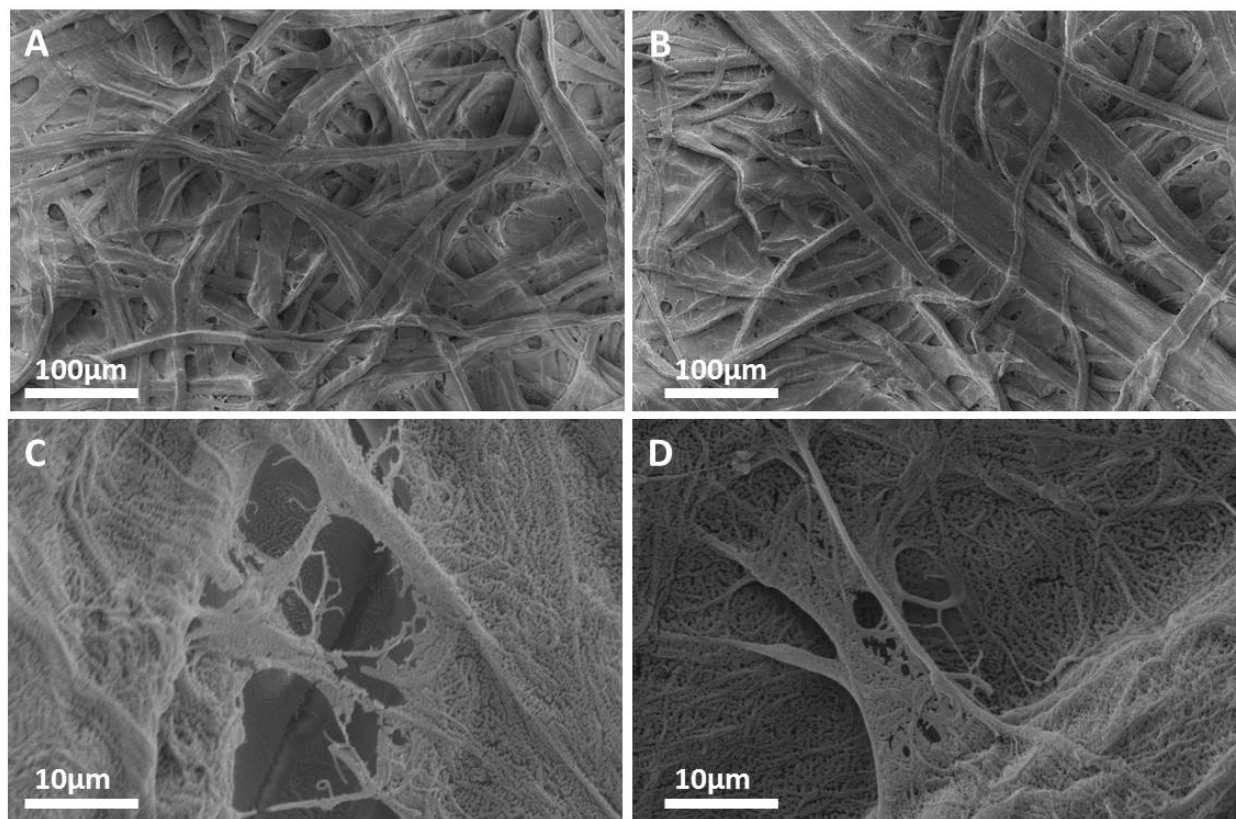


Figure S3: SEM image of paper filter as obtained (A,C) and coated with PPX-AM (B,D).

For SEM imaging, samples were sputter-coated with 10 nm gold layer. A Zeiss Leo 1530 (Carl Zeiss Microscopy GmbH, Jena, Germany) equipped with an InLens Detector was used.

3.2 Contact Angle

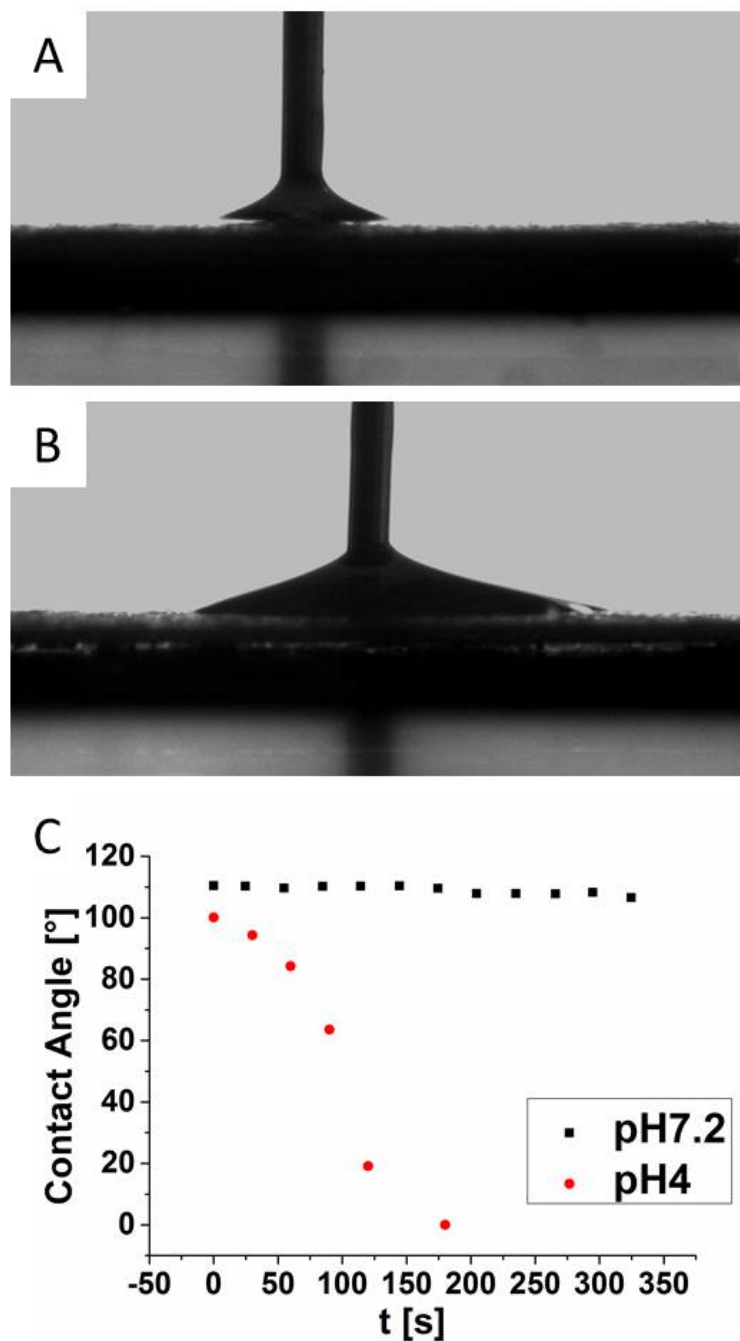


Figure S4: Contact angle measurements on uncoated filter paper using pH 7.2 phosphate buffer (A) and pH 4 acetate buffer, showing instantaneous wetting at both pH values (B) and on filter paper coated with PPX-AM, showing pH dependent wetting behavior. For contact angle measurements a DSA100 (Krüss GmbH, Hamburg, Germany) was used.

3.3 Videos

Videos of the transport properties through the filter paper coated with PPX-AM were recorded and can be found in additional files: Video 1 shows a single run at pH7.2 and pH4 corresponding to images displayed in the main document. Video 2-4 show three consecutive cyclings between the two pH values using the same sample. The sample had to be dried with hot air after each pH 4 run to remove buffer solutions soaked up in the filter.