

Assembly and Transport Properties of Nanoscale Biopolyelectrolyte Multilayers

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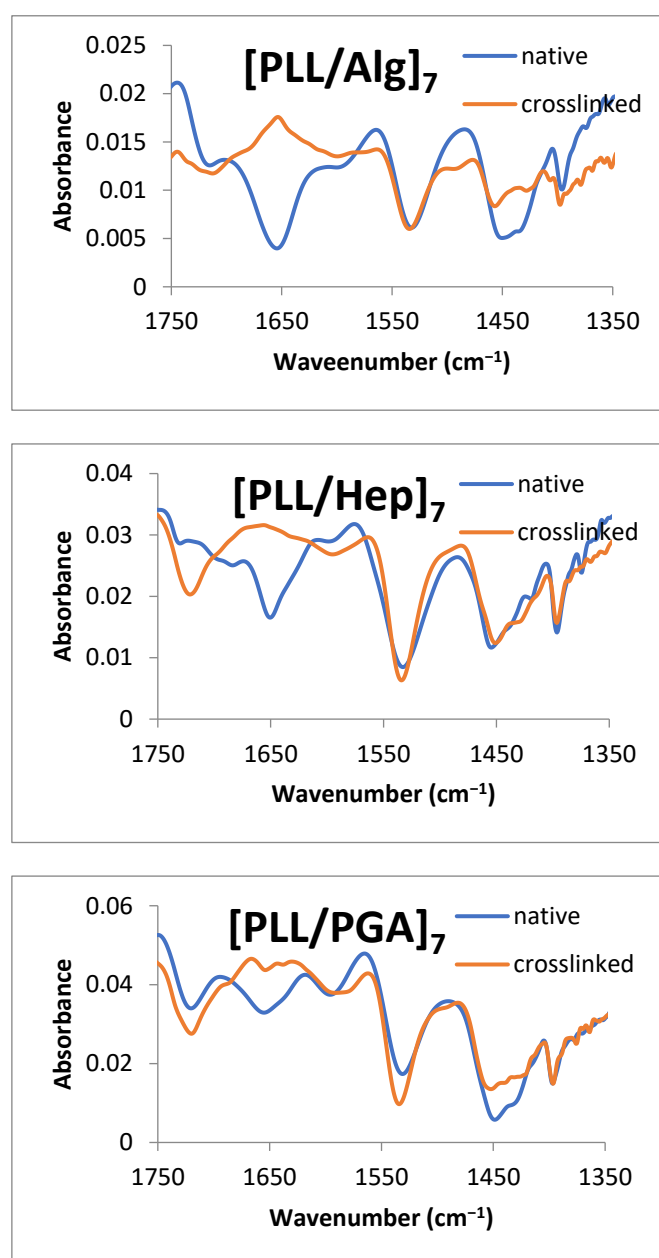


Figure S1. ATR FT-IR spectra of [PLL/Alg]₇, [PLL/Hep]₇, and [PLL/PGA]₇ before and after crosslinking of BP EMs. All PLL-based nanofilms showed increased absorbance at around 1650 cm^{-1} (primary amide peak) after crosslinking of the nanofilms.

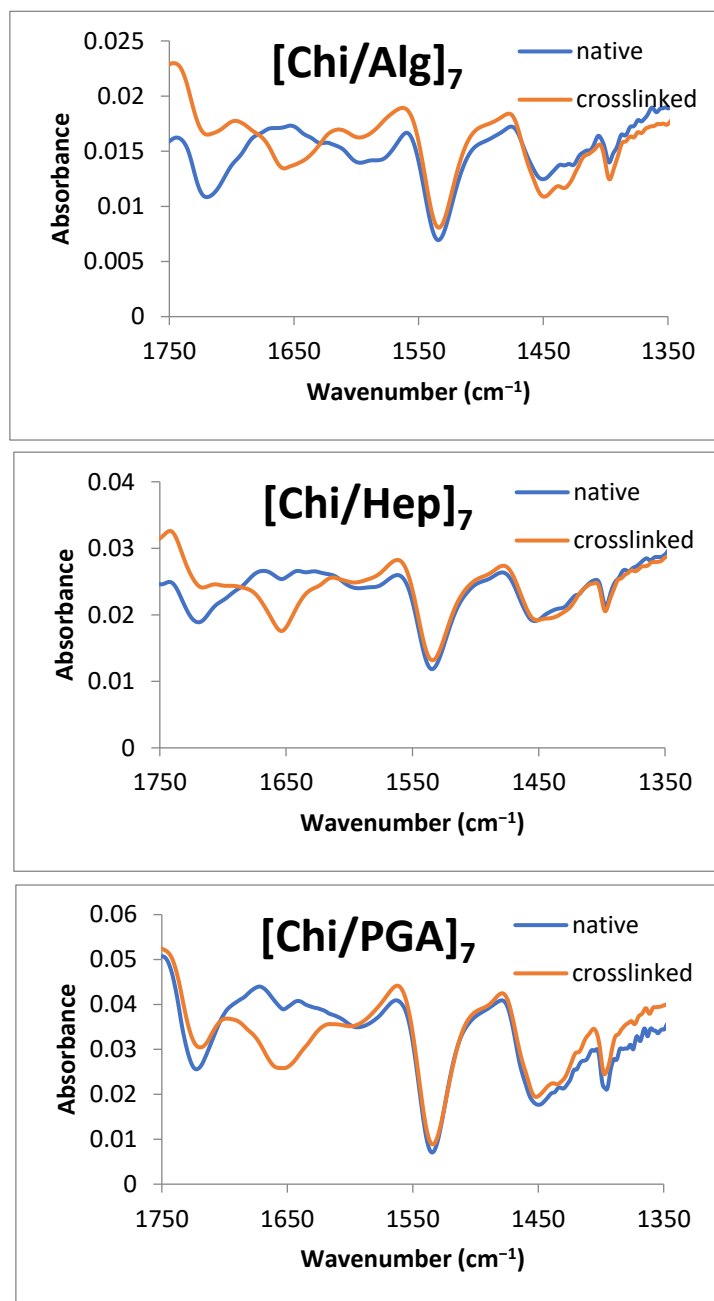


Figure S2. ATR FT-IR spectra of [Chi/Alg]₇, [Chi/Hep]₇, and [Chi/PGA]₇ before and after crosslinking of BPEMs. Chi-based BPEMs exhibited decreased absorbance at the same wavenumber, 1650 cm⁻¹. In general, strong intramolecular hydrogen bonding with aldehydes, ketones, or esters appears at 1630–1670 cm⁻¹.

We interpret our findings as showing that hydrogen bonding in Chi-based materials was displaced after crosslinking of BPEMs.

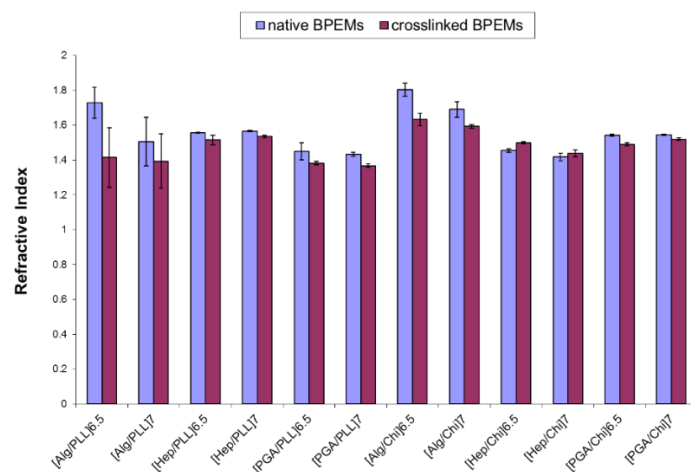


Figure S3. Refractive indices before and after crosslinking of BPEMs measured by ellipsometry. Error bars represent 95% confidence intervals (n = 15).

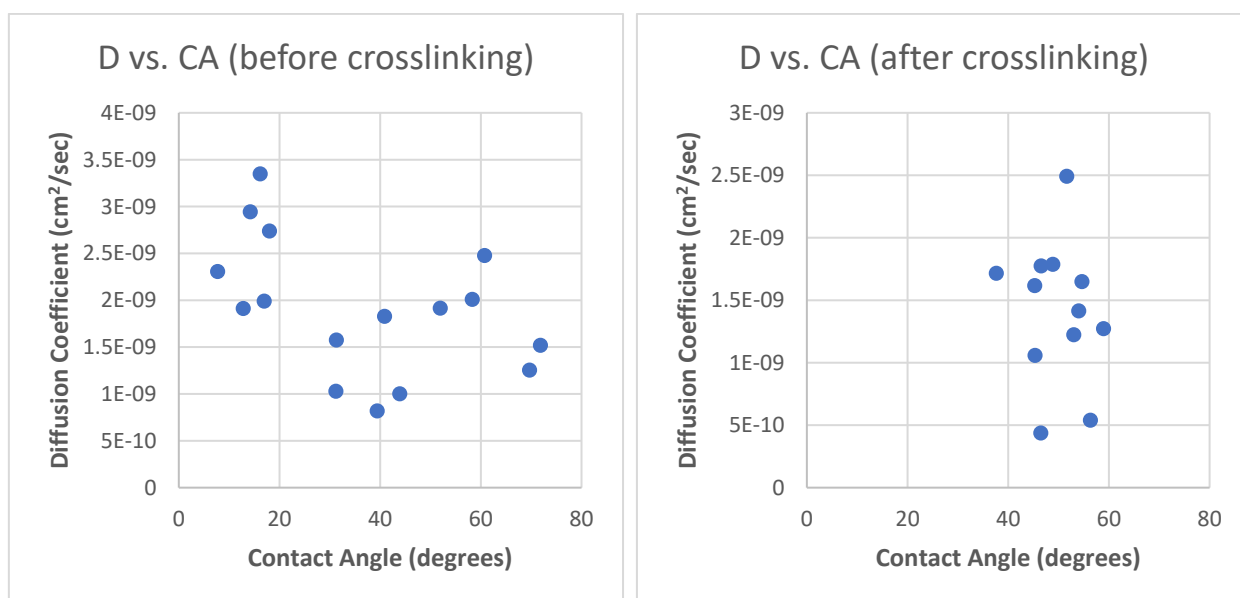


Figure S4. Scatter plots of diffusion coefficient versus contact angle, before and after crosslinking. From this, no obvious correlation between the two properties is observed.