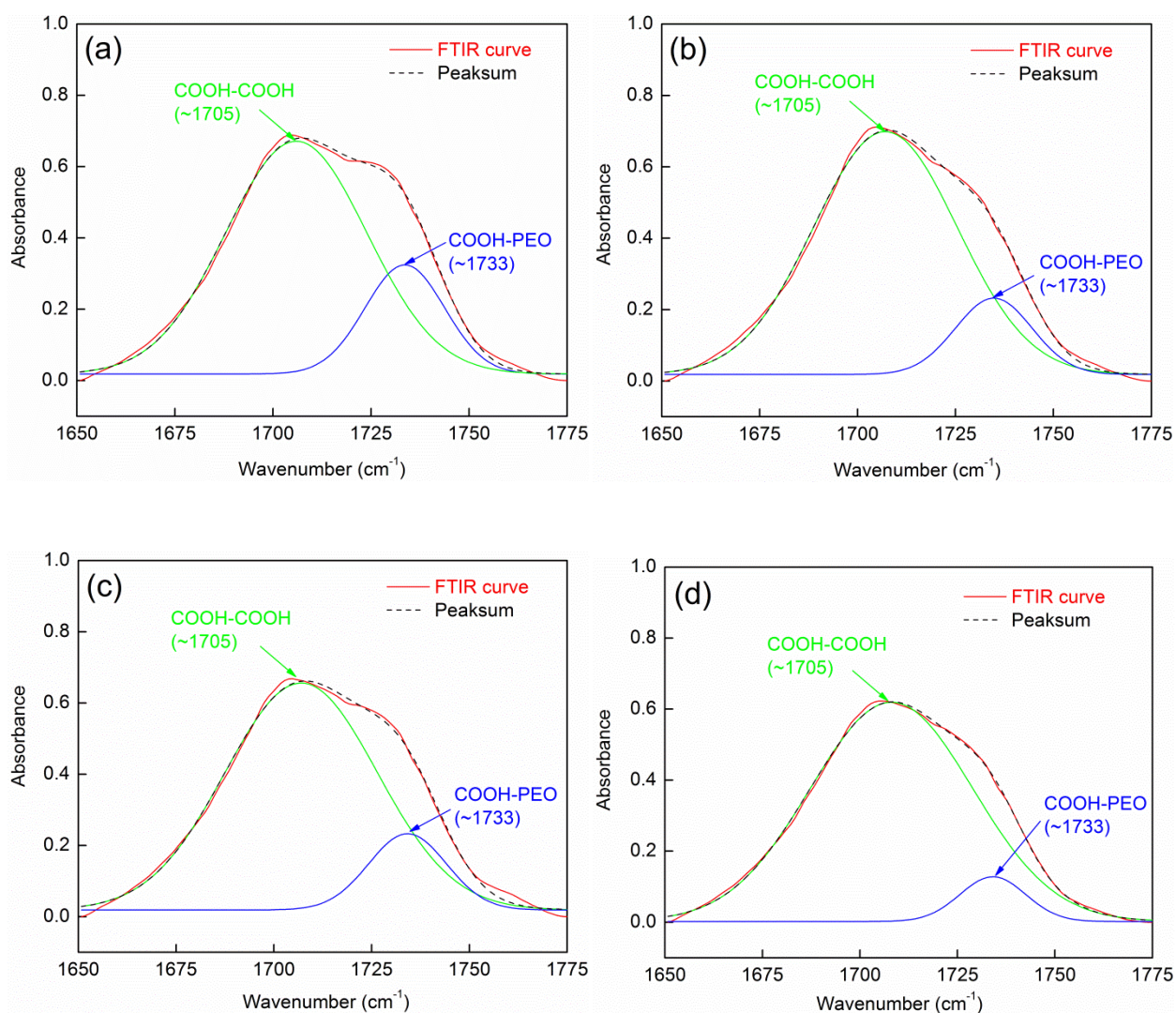


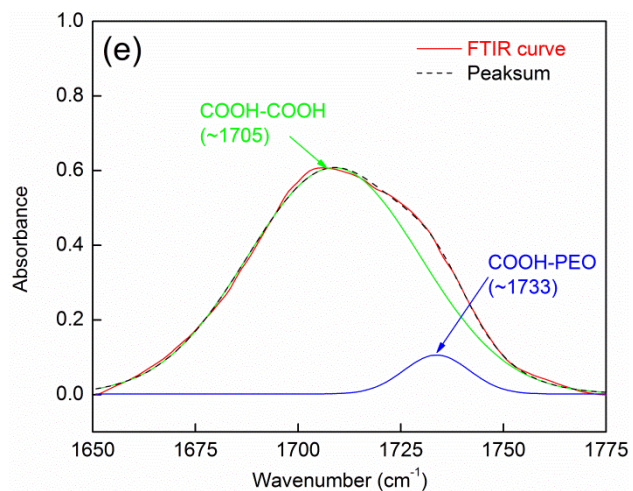
### Supporting Information:

## Structural tailoring of hydrogen-bonded poly(acrylic acid)/poly(ethylene oxide) multilayer thin films for reduced gas permeability

By Fangming Xiang<sup>a</sup>, Sarah M. Ward<sup>b</sup>, Tara M. Givens<sup>a</sup>, and Jaime C. Grunlan<sup>ab\*</sup>

Department of Mechanical Engineering<sup>a</sup> and Department of Chemistry<sup>b</sup>, Texas A&M University, College Station, TX 77843, United States





**Figure S1.** FTIR spectra (red solid curve) of the carboxylic acid region of (PAA/PEO) multilayers assembled at pH 3 (a), 2.75 (b), 2.5 (c), 2.25 (d), 2(e). The contributions from intramolecular hydrogen bonding (green curve,  $\sim 1705$   $\text{cm}^{-1}$ ) and intermolecular hydrogen bonding (blue curve,  $\sim 1733$   $\text{cm}^{-1}$ ) were calculated assuming the summation of two Gaussian peaks. The peak summation was presented as black dashed curve.