## Supporting information

## Effect of Nanoclay Orientation on Oxygen Barrier Properties of LbL Nanocomposite Coated Films

Fatma Ben Dhieb<sup>1</sup>, Ebrahim Jalali Dil<sup>1</sup>, Seyyed H. Tabatabaei<sup>2</sup>, Frej Mighri<sup>3</sup> and Abdellah Ajji<sup>1\*</sup>

 <sup>1</sup> 3SPack NSERC-Industry Chair, CREPEC, Chemical Engineering Department, Polytechnique Montreal, C.P. 6079, Succ. Centre ville, Montreal, QC, Canada H3C 3A7
<sup>2</sup> ProAmpac, Terrebonne, QC, Canada J6Y 1V2
<sup>3</sup> CREPEC, Chemical Engineering Department, Laval University, Quebec, QC, Canada
(\*) All correspondence should be addressed to: <u>abdellah.ajji@polymtl.ca</u>





b)





Figure S2: Typical peak deconvolution of the  $S_0$  spectrum for a PVA quadlayers



Figure S3: Peak subtraction for a PVP quadlayers



FigureS4: thickness variation with the number of layers for the three assemblies



Figure S5: XRD patterns of three of the studied assemblies