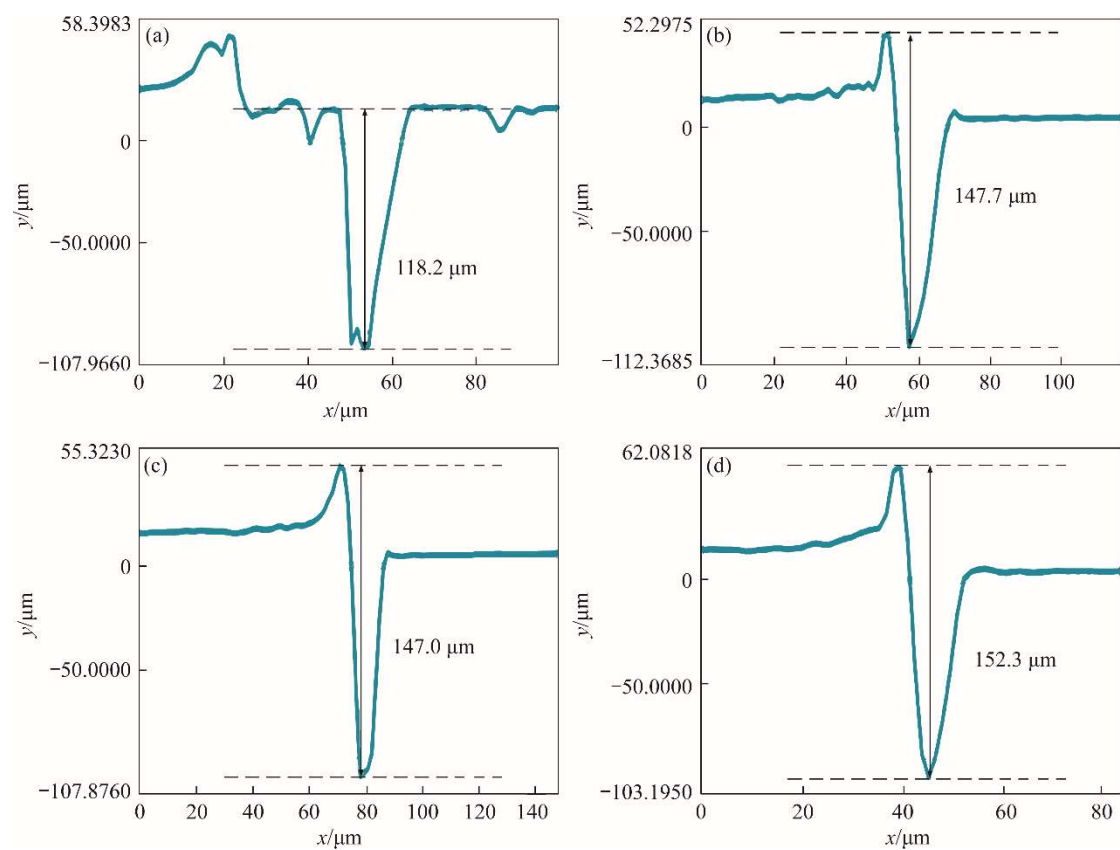
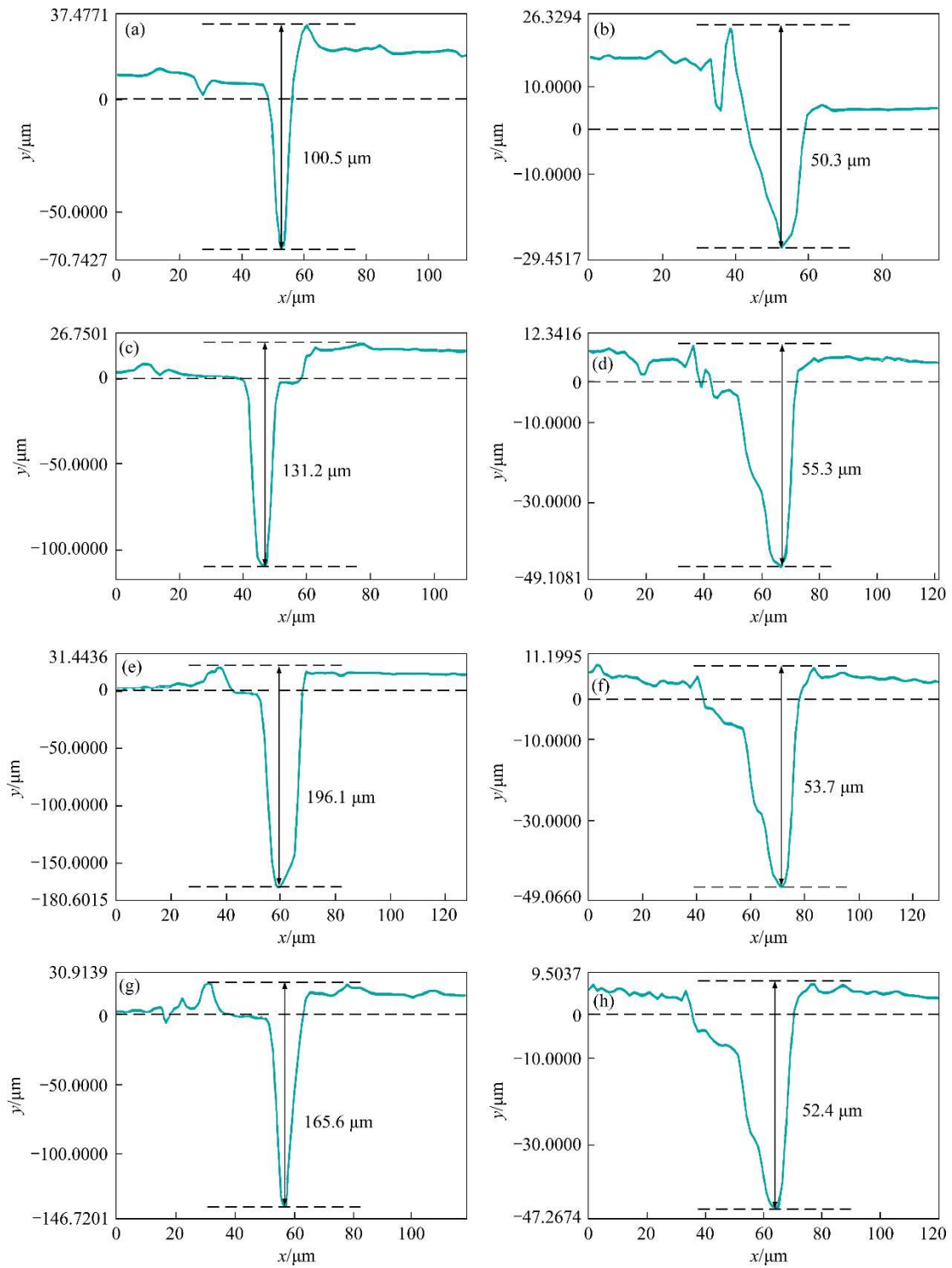


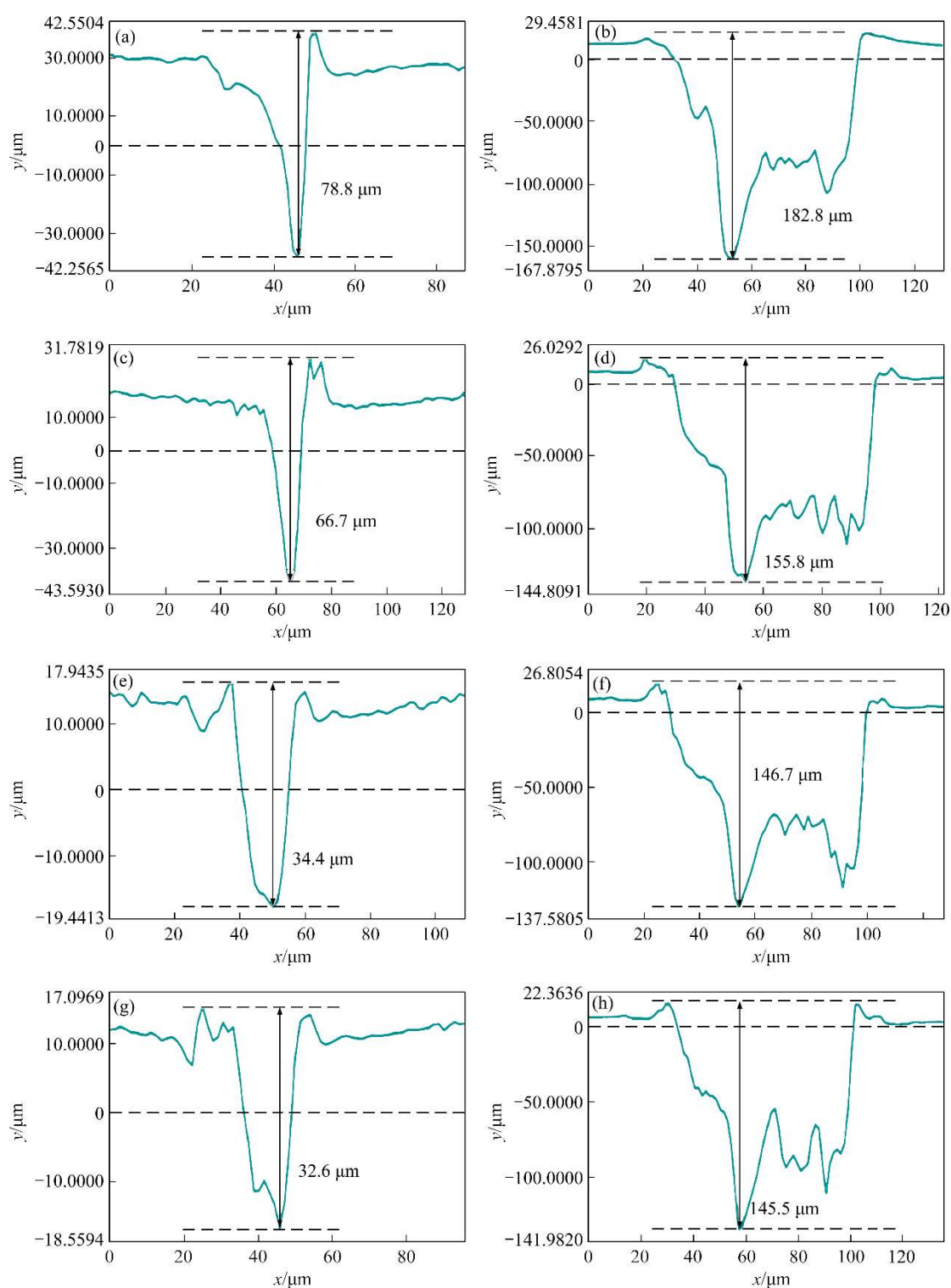
## Supplementary materials



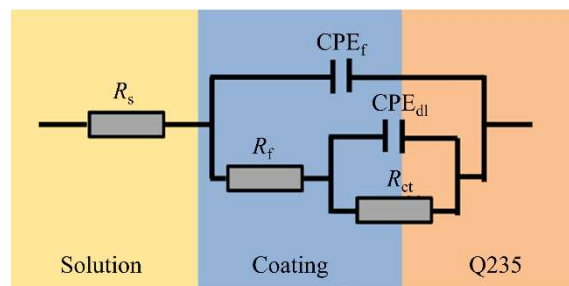
**Figure S1** Corrosion profile image at Zone y of the sample coated with varnish on (a) day 0, (b) day 3, (c) day 5, and (d) day 7



**Figure S2** Corrosion profile image of PAN varnish composite coatings on: (a, b) day 0, (c, d) day 3, (e, f) day 5, (g, h) day 7; (a, c, e, g) Corrosion profile image at Zone x; (b, d, f, h) Corrosion profile image at Zone y



**Figure S3** Corrosion profile images at Zones x and y of PAN/[BMIM]BF<sub>4</sub> varnish composite coating samples on (a) day 0, (b) day 3, (c) day 5 and (d) day 7; (a, c, e, g) Corrosion profile image at Zone x; (b, d, f, h) Corrosion profile image at Zone y



**Figure S4** Equivalent circuit model for the samples in 3.5 wt.% NaCl solution