Electronic Supplementary Information for

## Sprayable, Paintable Layer-by-Layer Polyaniline Nanofiber/Graphene Electrodes

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 <sup>10</sup>s of rinsing
 No rinsing
 No rinsing
 No rinsing

 No blow-drying
 No blow-drying
 1 min blow-drying
 2 min blow-drying

**Figure S1.** Digital images of PANI NF/GO LbL-coated silicon wafer pieces for which various spraying parameters were varied: (a) 10 seconds of rinsing and no blow-drying, (b) no rinsing and no blow-drying, (c) no rinsing and 1 min of blow-drying, and (d) no rinsing and 2 min of blow-drying. In cases (a) and (b), little to no film growth was observed. In case (d) the film was patchy and uneven. Case (c) yielded a uniform film and was selected for further study. The scratch in the film from case (c) was intentional as it was later used for profilometry.



**Figure S2**. *b* values obtained from (a) anodic scans and (b) cathodic scans versus voltage for PANI NF/ERGO spray-assisted LbL electrodes of two different thicknesses. The *b* value was estimated from cyclic voltammograms shown in Figure 4, over a scan range of 10-100 mV/s. At a given potential the current *i* measured for each scan rate *v* was fit with adjustable parameters *a* and *b* using the function:  $i=av^b$ .



**Figure S3**. The diffusion-controlled contribution separated from cyclic voltammograms of (a) 969 nm and (b) 3349 nm thick (PANI NF/ERGO)<sub>100</sub> spray-assisted LbL electrodes at a scan rate of 1 mV/s. The diffusion-controlled contribution is taken as the second term in the following function:  $i=a_1v+a_2v^{0.5}$ . This function is fit to the cyclic voltammograms shown in Figure 4, over a scan range of 10-100mV/s.