## Supporting information for

## pH sensing using boron doped diamond electrodes

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Figure S1: Raman spectra of (A) boron doped diamond electrode with 0.1% w/w boron content and (B) 5% w/w boron content.

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Figure S2: (a) Linear sweep voltammetry performed on BDD electrode (0.1% B/C) at 20 mV s<sup>-1</sup> from 0 to -1.1 V vs AgCl in FIXANAL® buffers ((A) pH 5, (B) pH 4, (C) pH 3, (D) pH 2 and (E) pH 1). (b) Current density recorded at -0.8 V vs AgCl as a function of pH. T=23°C.



Figure S3: Chronopotentiometry performed on a glassy carbon electrode in FIXANAL® buffer pH 2 at -18  $\mu$ A cm<sup>-2</sup>. T=23°C.



Figure S4: Chronopotentiometry performed on a 5% B/C BDD electrode in FIXANAL® buffer pH 2 at -18  $\mu$ A cm<sup>-2</sup>. T=23°C.



Figure S5: pH calibration curves constructed from chronopotentiometry measurements recorded on a 0.1% B/C BDD electrode at -18  $\mu$ A cm<sup>-2</sup> in FIXANAL® buffer solutions (pH 2 to pH 12) in (A) the presence and (B) the absence of 0.1M K<sub>3</sub>Fe(CN)<sub>6</sub>. The potential value was taken after 20 seconds of current density application. T=23°C. Linear regressions: (A) slope: -0.01±0.002; y-intercept: 0.39±0.01; r<sup>2</sup>: 0.805; (B) slope: -0.053±0.002; y-intercept: -0.53±0.02; r<sup>2</sup>: 0.985.