# Supplementary information

Influence of pH values on the electrochemical performance of low carbon steel coated by plasma thin SiO*x*C*y* films

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Table S1. Buffer solutions with different pH values used for electrochemical measurements.

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| **pH**  | **Composition of buffer solution** |
| **1** | 295 mL 0.2 M HCl + 205 mL distilled water. |
| **3** | 125 mL 0.2 M potassium hydrogen phthalate + 51 mL 0.2 M HCl + 324 mL distilled water. |
| **5** | 125 mL 0.2 M potassium hydrogen phthalate + 74 mL 0.2 M NaOH +301 mL distilled water. |
| **9** | 100 mL 0.2 M Na2B4O7.10H2O (borax) + 125 mL 0.2 M KCl + 53.5 mL 0.2 M NaOH +221.5 mL distilled water. |
| **12** | 500 mL 1 M NaOH. |

**b**

**a**

Figure S1. SEM image of the plasma deposited carbon steel sample with a gap distance: 2 cm (a), 3 cm

Figure S3. EDX spectra of plasma treated steel samples at different gap distances.