

Surfactant doped polyaniline coatings for functionalized gas diffusion layers in fuel cells

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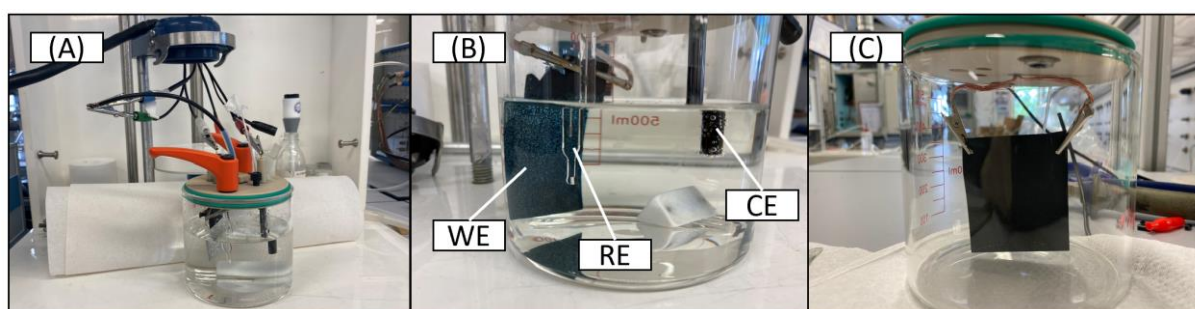


Fig.S1: Setup for the electropolymerization: (A) air-tight cell, (B) PANI-coated carbon paper working electrode (WE), Ag/AgCl (3 M KCl) reference electrode (RE), glassy carbon rod counter electrode (CE), (C) contacting of the carbon paper WE with two crocodile clips.



Fig.S2: Setup of the dip-coating of carbon paper via chemical oxidative polymerization of aniline.

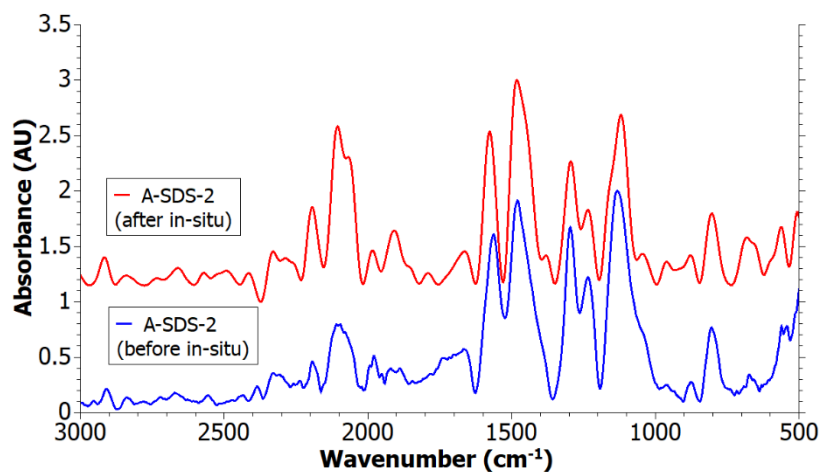


Fig.S3: Recorded infrared spectrum of the PANI-coated GDL before (blue) and after (red) the in-situ testing.

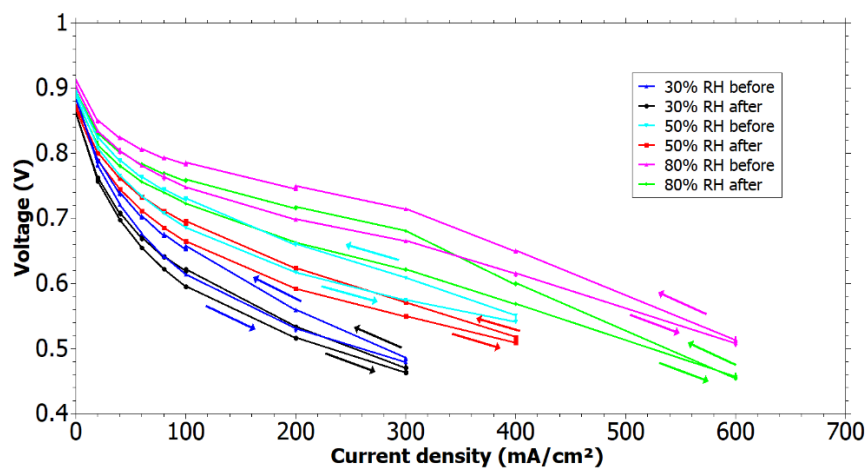


Fig.S4: Recorded polarization curves of E-SDBS-3 at 30%, 50% and 80% RH, before and after a 100 h hold at 350 mA/cm^2 .

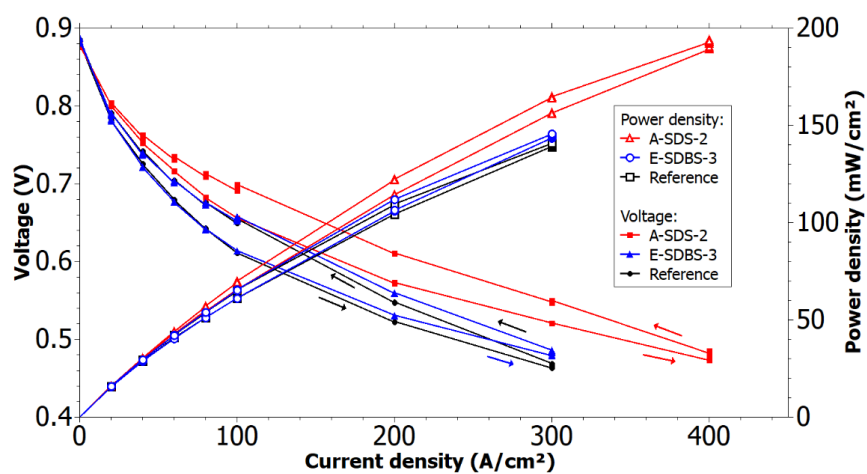


Fig.S5: Recorded polarization curves and calculated power densities of the samples at 30% RH.

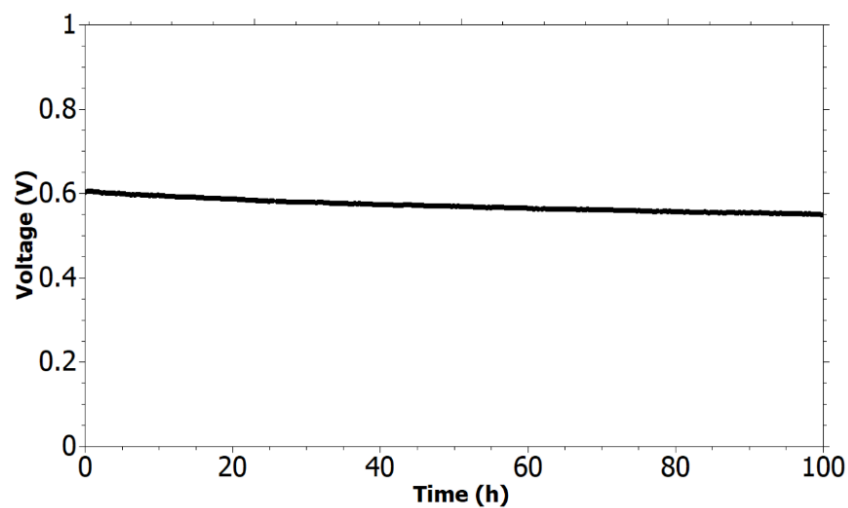


Fig.S6: Recorded voltage of sample E-SDBS-3 during the 100 h hold at 350 mA/cm² with 50% RH and an anode and cathode stoichiometry of 1.3 and 1.5, respectively.

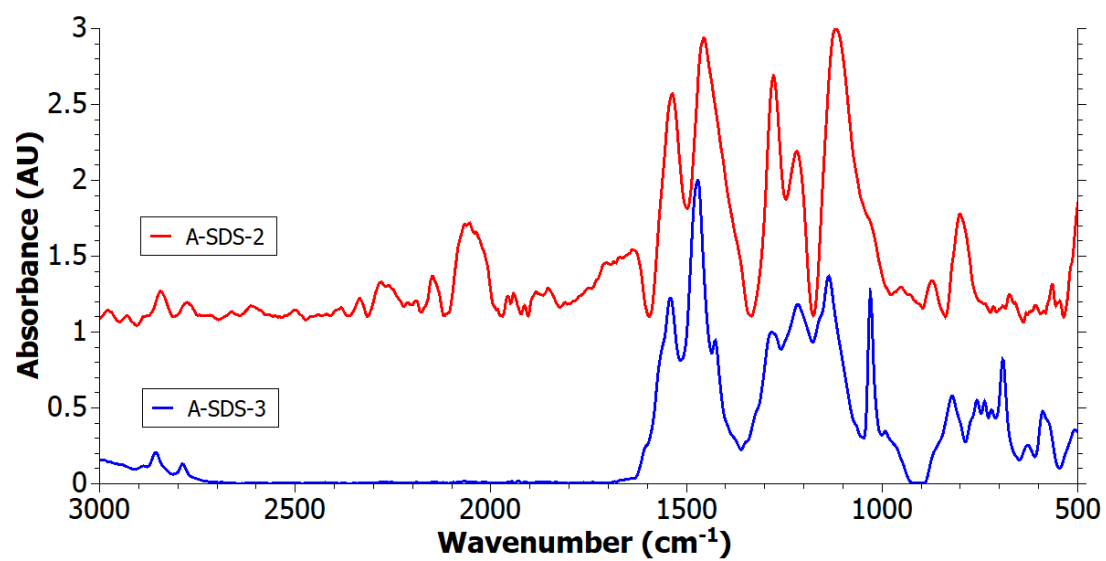


Fig.S7: Recorded infrared spectrum of the A-SDS-2 and A-SDS-3.

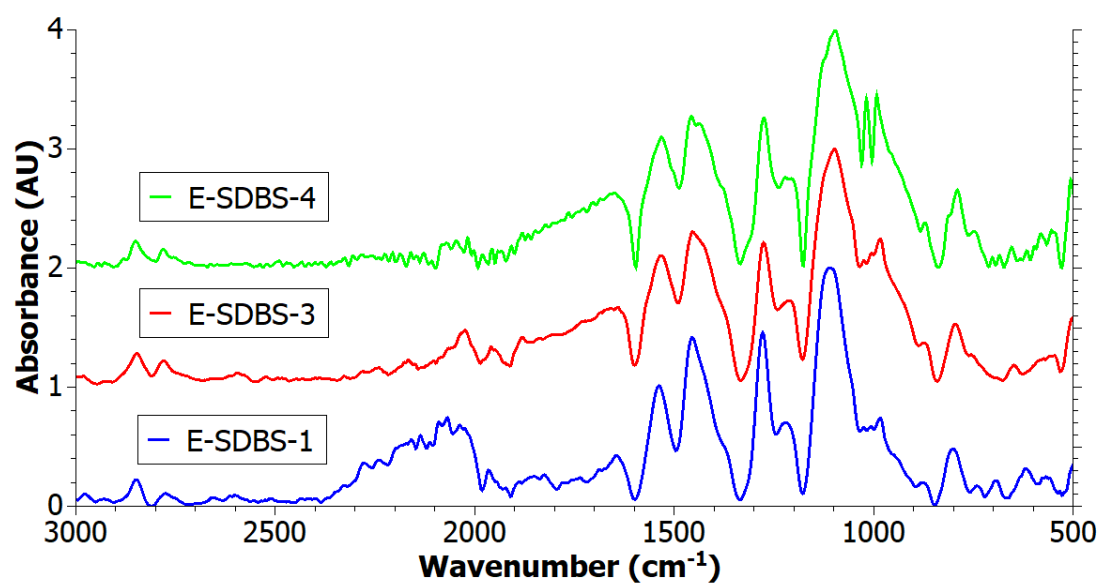


Fig.S8: Recorded infrared spectrum of the E-SDBS-1, E-SDBS-3 and E-SDBS-4.

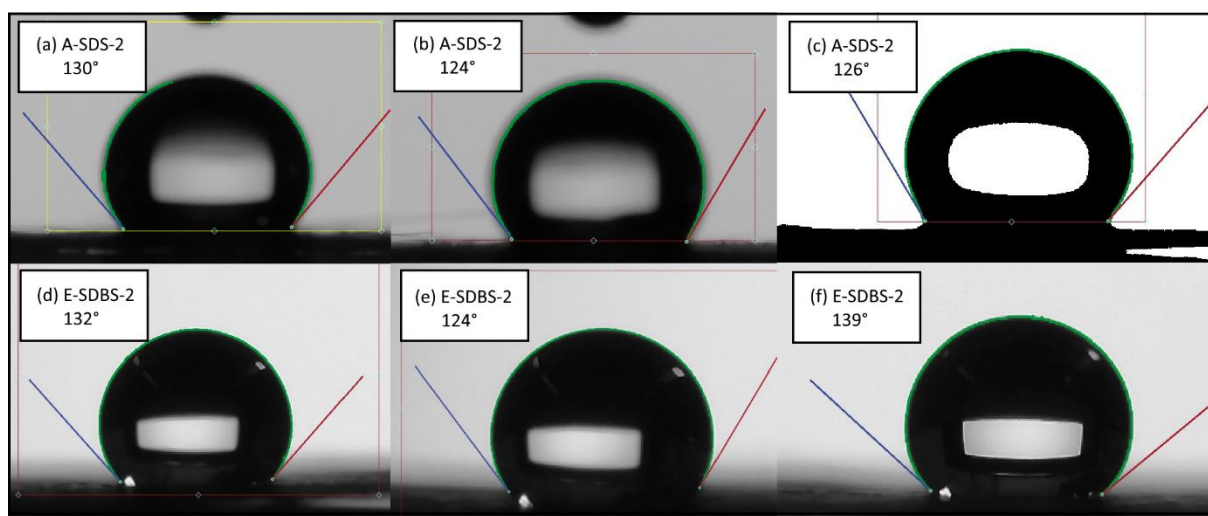


Fig.S9: Three reported contact angles (CA) for samples A-SDS-2 (a-c) and E-SDBS-2 (d-f) at different positions. Depicted CA is the average of the angle on the right and the left side of the drop.

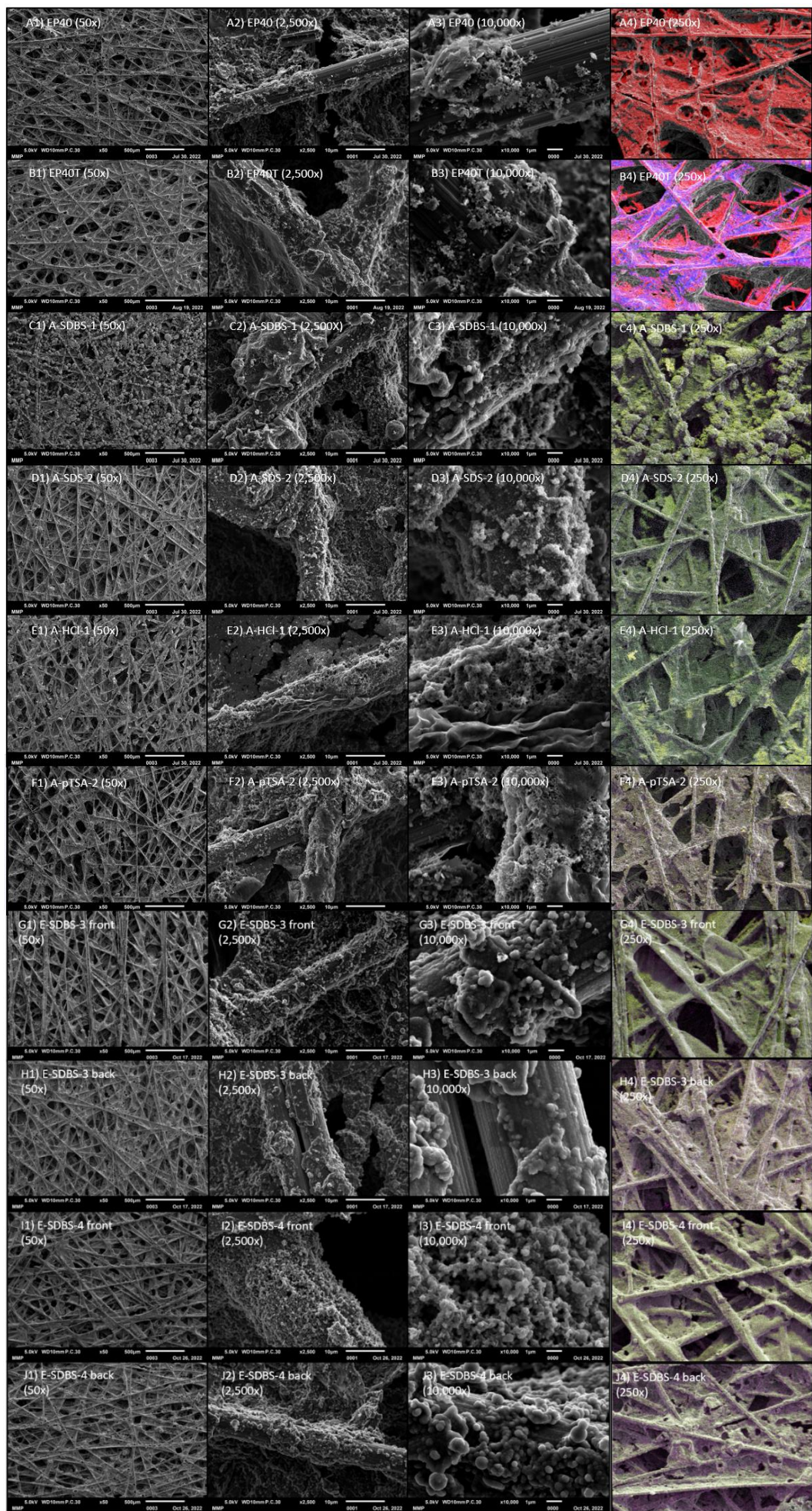


Fig.S10: Scanning electron microscopy images of the samples at a magnification of 50x, 2,500x and 10,000x and EDX mapping with a magnification of 250x. Color code: red = carbon (only depicted for A&B), blue = fluorine, green = nitrogen, magenta = sulfur, yellow = oxygen.