SUPPLEMENTARY INFORMATION

XPS spectra for the Si-Acid 100 monolayer: a) C1s core level ($\alpha = 0^\circ$) showing C-C and COOH peaks; a very small contribution attributed to C-O bonds appears in the spectral decomposition (Shirley background, Voigt peak profiles); b) Si2p core level ($\alpha = 45^\circ$) showing that the silicon surface is oxide-free (no peak near 103.5 eV).