Supporting information

Candle-soot derived Photoactive and Superamphiphobic Fractal Titania Electrode

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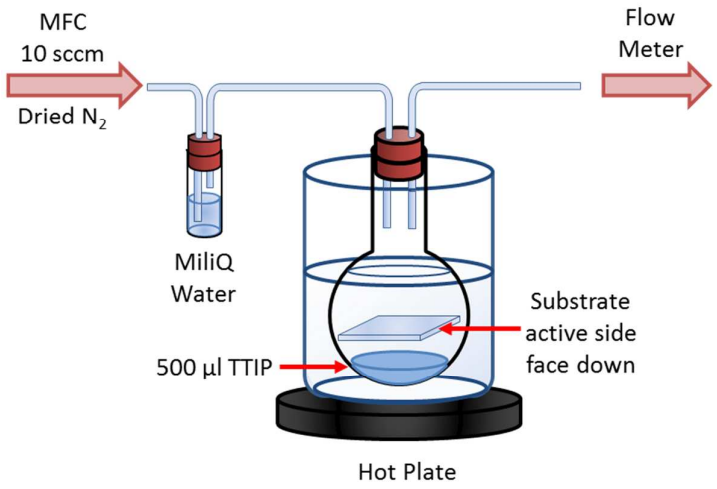

Figure S1. In-house built CVD set-up for TiO_2 shell formation on candle soot layer deposited on the substrate as the template. The water bath was kept at 65°C.

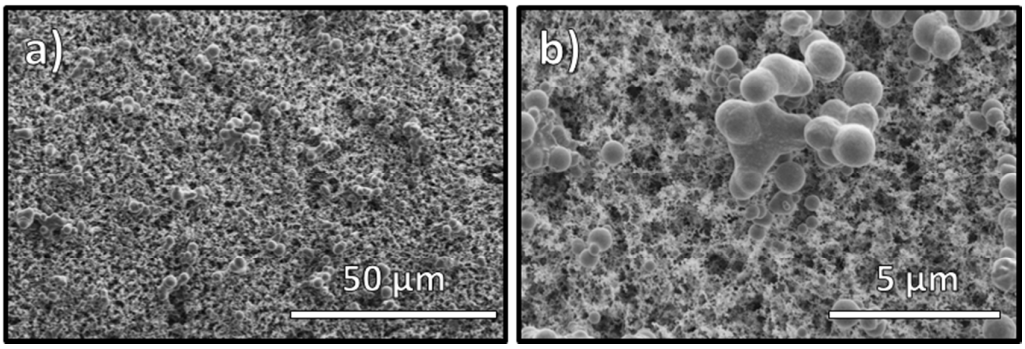

Figure S2. ST20 with soot layer facing up in a) low and b) high magnification, where big particles are formed on the soot/titania core/shell fractal structures.

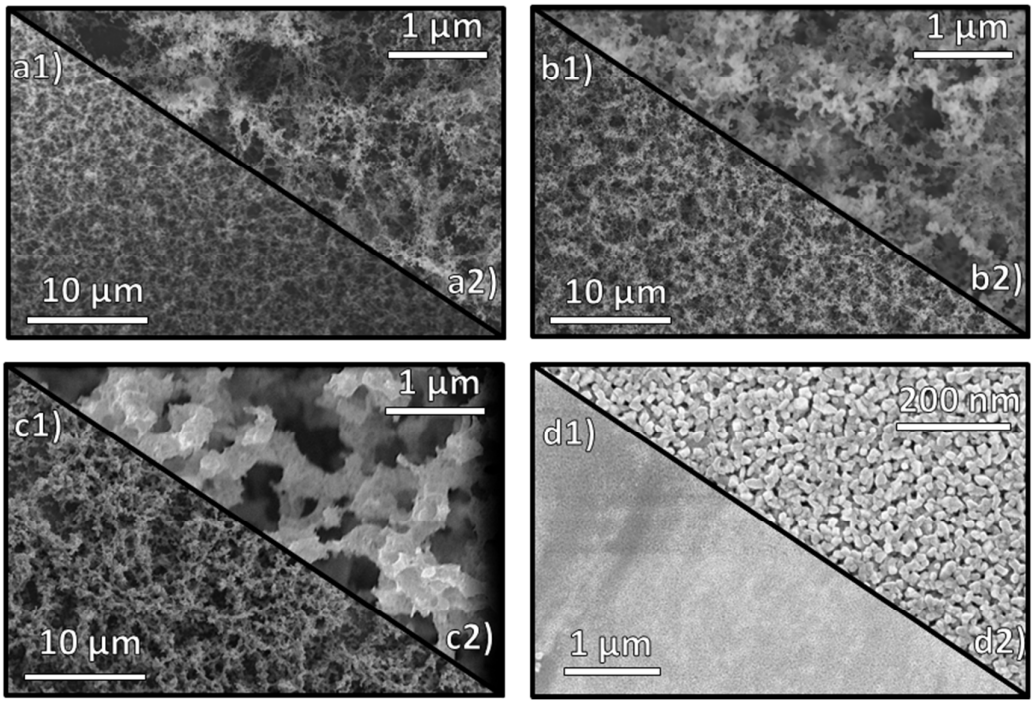

Figure S3. SEM images of **a)** ST5; **b)** ST10; **c)** ST30; **d)** TT20 with **1)** low and **2)** high magnifications. ST and TT indicate substrates with and without soot layer, respectively.

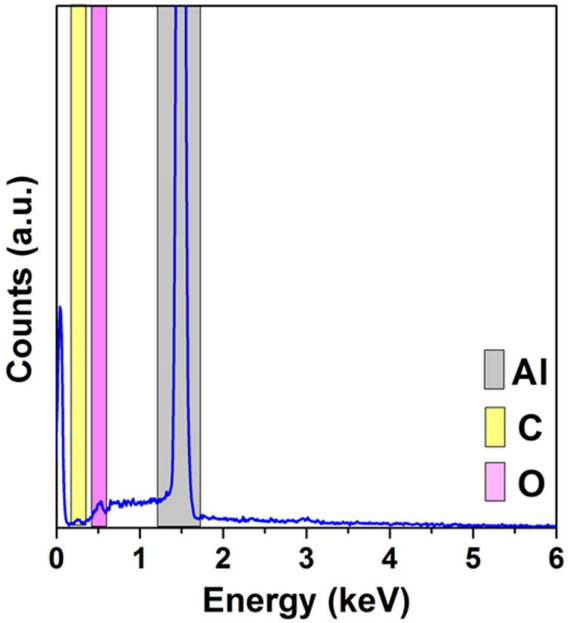

Figure S4. EDS spectrum of aluminium foil.

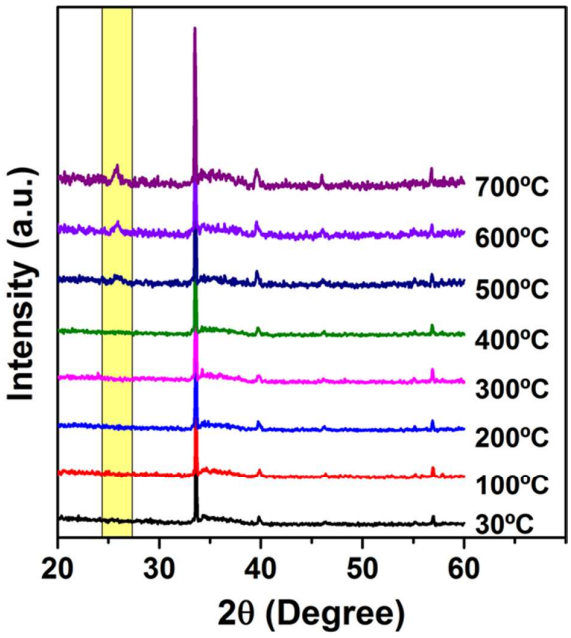

Figure S5. HT-XRD patterns of soot/titania sample (ST20) on a silica substrate at different temperatures. The shaded area shows the formation of (101) peak for anatase phase of Titania. Other peaks are related to Si substrate peaks (JCPDS card 27-1402).

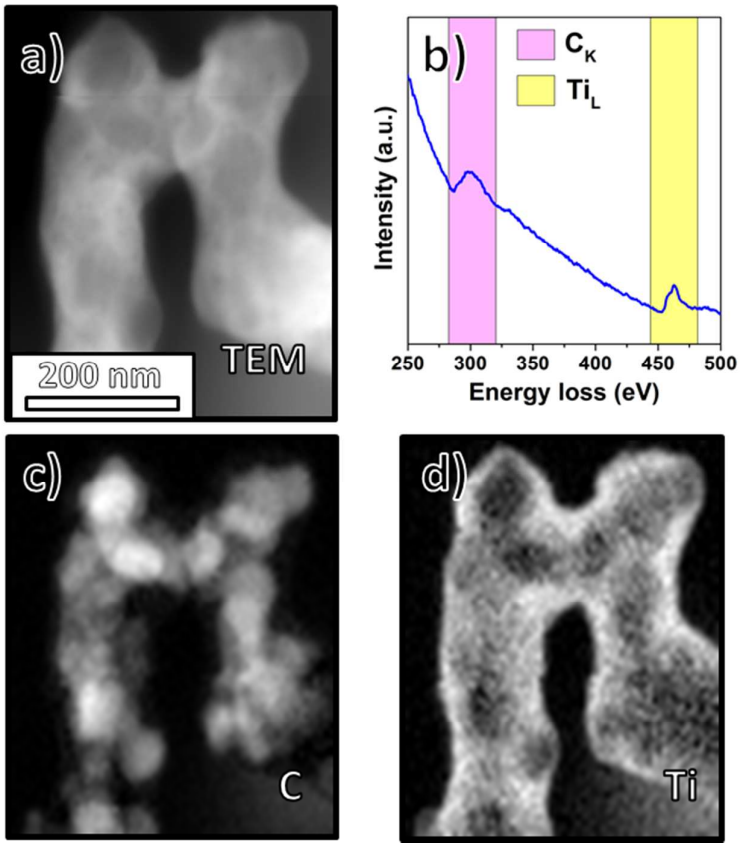

Figure S6. a) STEM-HAADF image of ST20 before calcination; **b)** EELS spectra; **c)** C_k and **d)** Ti_L EELS maps of TEM image shown in (a).

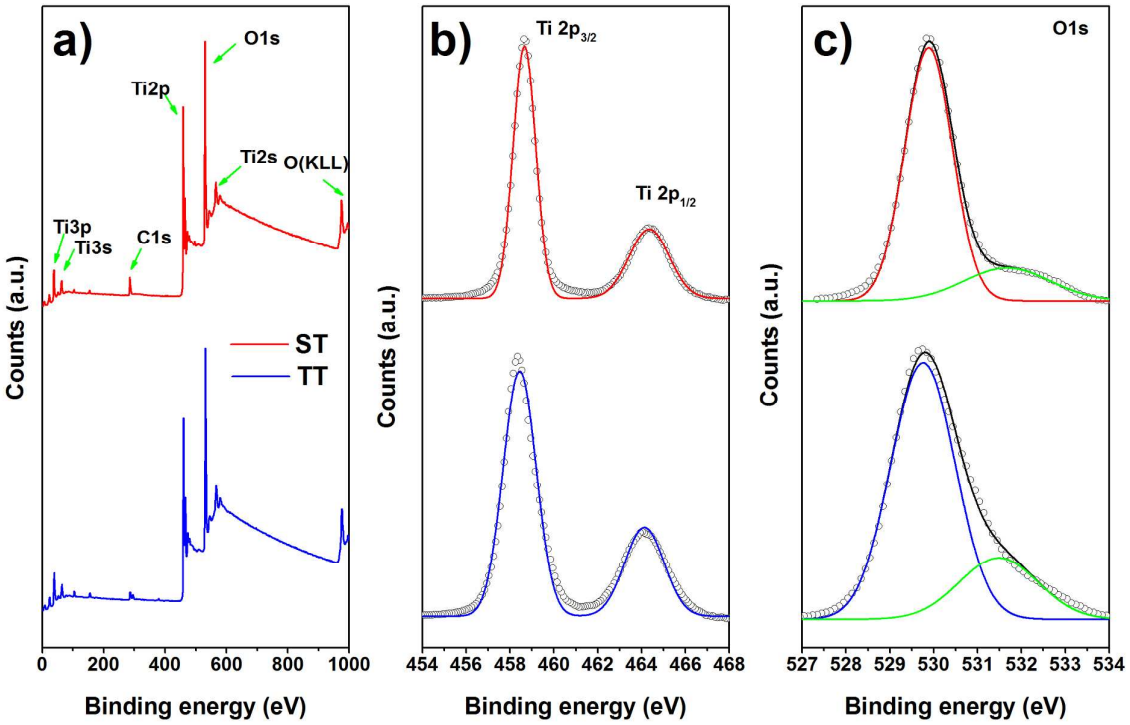

Figure S7. XPS spectra of ST20 and TT20 **a)** Survey; **b)** high-resolution Ti 2p and **c)** high-resolution O 1s spectra.