Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Microstructural impact of anodic coatings on the electrochemical chlorine evolution reaction

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Supplementary Information

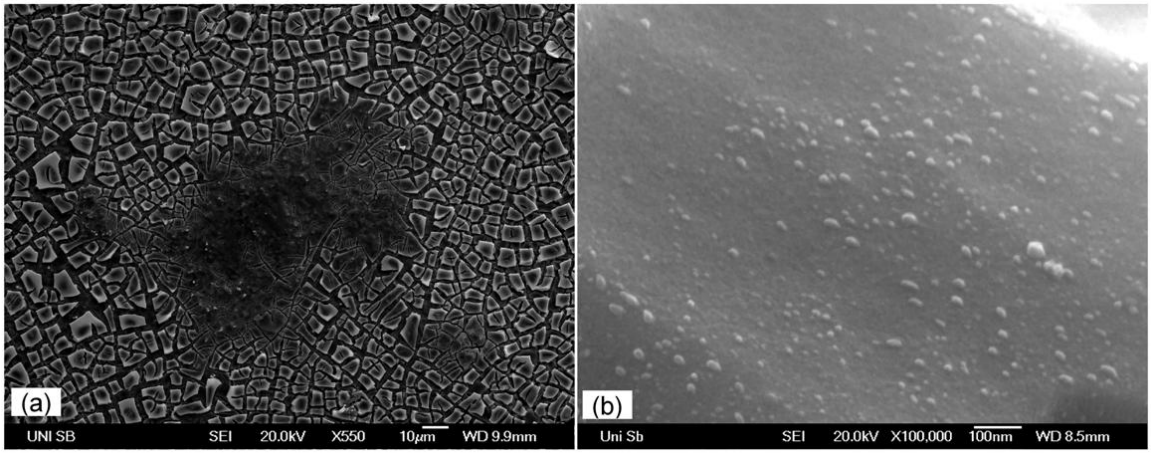

Fig. S1 SEM images of (a) a commercial $Ru_{0.3}Ti_{0.7}O_2$ coating, (b) a crack-free sol-gel $Ru_{0.25}Ti_{0.75}O_2$ coating.[1]

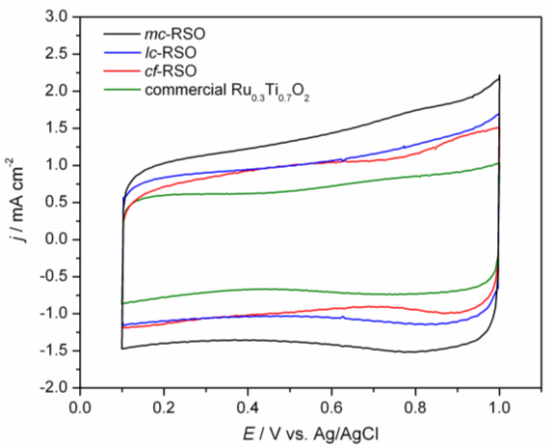

Fig. S2 Cyclic voltammograms recorded with a potential scan rate of 50 mV s^{-1} in 3.5 M NaCl, pH 3, at room temperature.

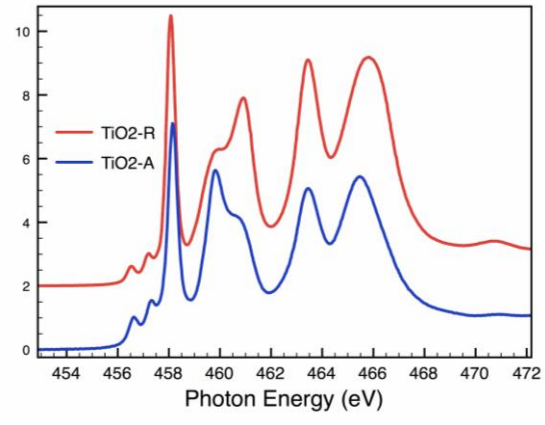

Fig. S3 Ti *L*-edge X-ray absorption spectra of the rutile and anatase TiO_2 reference materials.

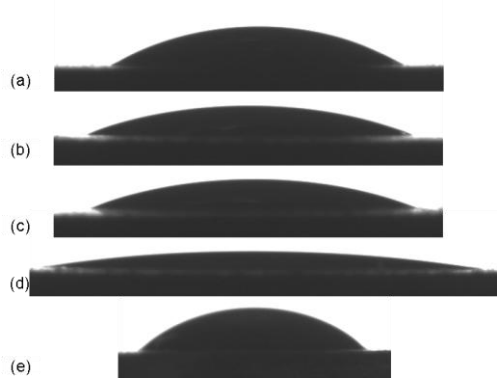

Fig. S4 Contact angle measurements in air using a 20 µL water droplet showing the wettability of the coating surface. (a) *mc*-RSO, (b) *rc*-RSO, (c) *lc*-RSO, (d) *cf*-RSO, (e) commercial $Ru_{0.3}Ti_{0.7}O_2$ coating. For clarity, the water spreading on the surface is shown without rescaling the images.

Table S1 XPS surface chemical analysis for the mud-crack $Ru_{0.3}Sn_{0.7}O_2$ coating as-received and after electrochemical using.

Kinetic energy / eV	Cl/(Ru + Sn)	
	fresh	used
200	0.030	0.165
450	0.041	0.120
700	0.028	0.066

Reference:

1 R. Chen, V. Trieu, H. Natter, R. Hempelmann, A. Bulan, J. Kintrup and R. Weber, DE102010043085.4, 2010.