Electron Donor-Induced Electrochemical Reduction of Vanadate Anions for Enhanced Electrochemical Performance of Plasma Electrolytic Oxidation Layers

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Supplementary materials

Table S1. Outcomes of the EIS examinations on the 0BTA specimen submerged in a 3.5 wt.% NaCl electrolyte for different immersion time.

sample	$R_o(\Omega cm^2)$	CPE-n_o	CPE-Y_o ($S.s^n.cm^{-2}$)	R_i (Ωcm^2)	CPE-n_i	CPE-Y_i ($S.s^n.cm^{-2}$)	W ($S*S^{1/2}$)
24 h	1.04×10^5	0.88	3.79×10^{-10}	1.00×10^6	0.52	1.11×10^{-10}	9.33×10^{-6}
48 h	2.78×10^4	0.81	2.22×10^{-10}	1.09×10^5	0.53	4.88×10^{-9}	7.14×10^{-6}
96 h	3.00×10^3	0.70	4.46×10^{-9}	6.38×10^4	0.50	2.67×10^{-8}	2.01×10^{-5}

Table S2. Outcomes of the EIS examinations on the 3BTA specimen submerged in a 3.5 wt.% NaCl electrolyte for different immersion time.

sample	R_o (Ωcm^2)	CPE-n_o	CPE-Y_o ($S.s^n.cm^{-2}$)	R_i (Ωcm^2)	CPE-n_i	CPE-Y_i ($S.s^n.cm^{-2}$)	W ($S*S^{1/2}$)
24 h	3.89×10^6	092	2.44×10^{-11}	1.89×10^7	0.54	6.71×10^{-11}	1.25×10^{-6}
48 h	9.32×10^5	0.87	1.08×10^{-10}	8.08×10^6	0.56	1.55×10^{-10}	1.01×10^{-6}
96 h	7.77×10^4	0.76	8.61×10^{-9}	1.33×10^6	0.58	9.73×10^{-10}	2.22×10^{-5}

Table S3. Outcomes of the EIS examinations on the 5BTA specimen submerged in a 3.5 wt.% NaCl electrolyte for different immersion time.

sample	R_o (Ωcm^2)	CPE-n_o	CPE-Y_o ($S.s^n.cm^{-2}$)	R_i (Ωcm^2)	CPE-n_i	CPE-Y_i ($S.s^n.cm^{-2}$)	W ($S*S^{1/2}$)
24 h	6.36×10^6	0.96	1.00×10^{-11}	5.84×10^7	0.55	7.54×10^{-10}	1.00×10^{-6}
48 h	2.00×10^6	0.93	1.87×10^{-10}	4.88×10^7	0.51	3.68×10^{-11}	2.08×10^{-6}
96 h	9.89×10^5	0.90	1.11×10^{-10}	1.25×10^7	0.49	4.00×10^{-11}	4.57×10^{-6}