Comparison of the Electrochemical Response of Carbon Fiber Reinforced Plastic (CFRP), Glassy Carbon, and Highly Ordered Pyrolytic Graphite (HOPG) in Near Neutral Aqueous Chloride Media

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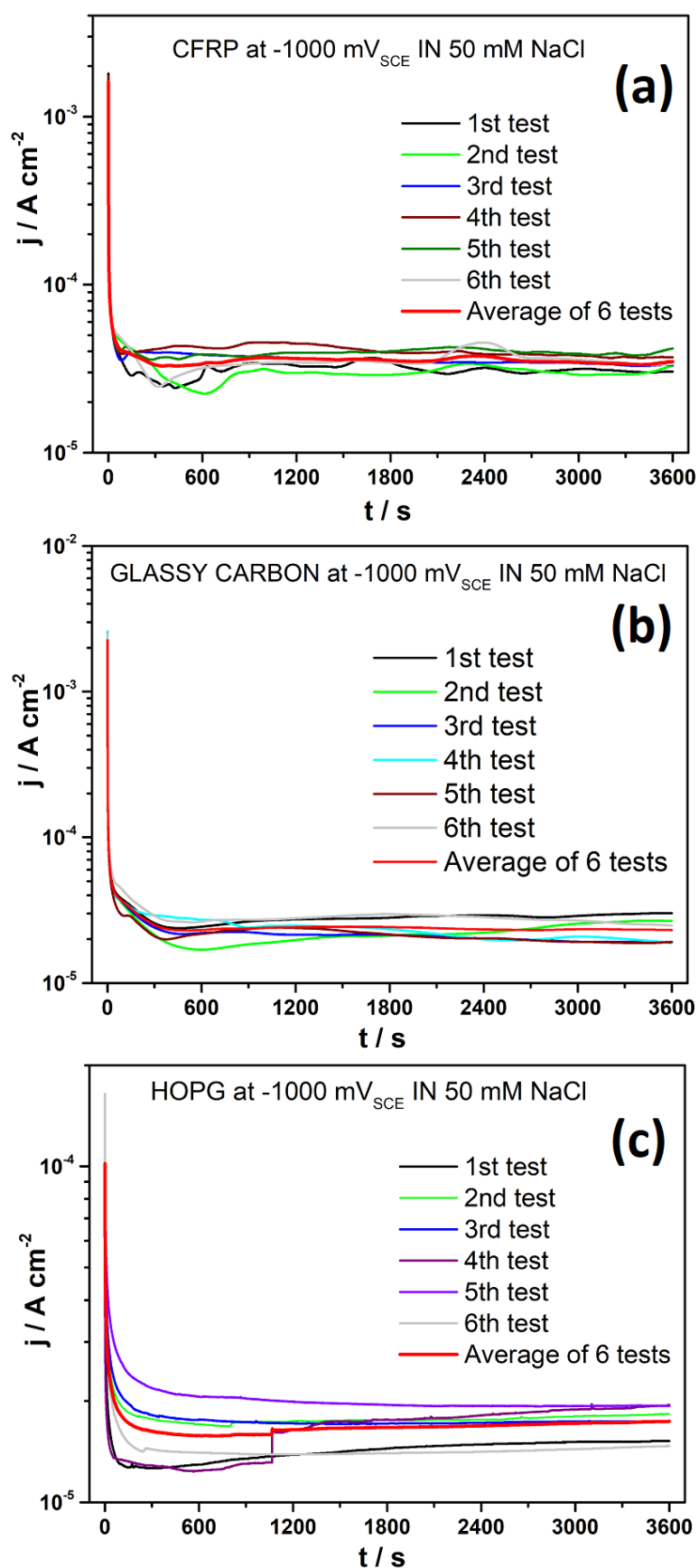
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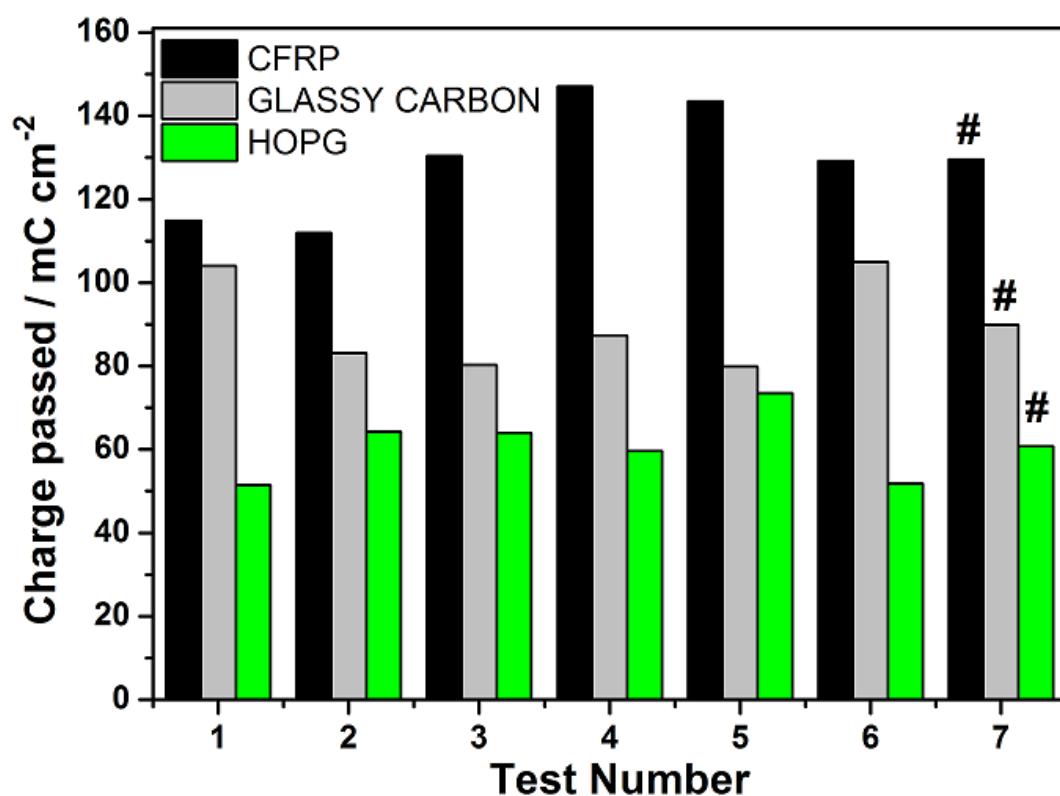
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Supplementary Material

Figure S1: Hextuple chronoamperometic profiles of the 3 carbon surfaces during 1-hour polarization at -1000 mV$_{SCE}$ in 50 mM NaCl.

Figure S2 : Comparison of charges passed during 1-hour polarization of CFRP, HOPG, and glassy carbon in 50 mM NaCl at -1000 mV$_{SCE}$ in hextuple chronoamperometric tests (Test number 7 and # denotes the mean values from 6 tests on each carbon surface).

Table S1: Table of Integrated charges passed in hextuple chronoamperomteric measurements

	CFRP	Glassy Carbon	HOPG
Test number	Charge passed (mC cm^{-2})	Charge passed (mC cm^{-2})	Charge passed (mC cm^{-2})
1	114.91	104	51.43
2	111.93	83.1	64.29
3	130.42	80.3	63.93
4	147.12	87.4	59.64
5	143.54	79.9	73.57
6	129.22	105	51.79
Average	129.52	89.95	60.77
Standard deviation	14.35	11.59	8.43

Table S2: Table of Outputs from ANOVA tests for significance

Parameter
Table Analyzed   Data 1

One-way analysis of variance
 P value < 0.0001
 P value summary   ***
 Are means signif. different? (P < 0.05)   Yes
 Number of groups   3
 F   52.10
 R square   0.8742

Bartlett's test for equal variances
 Bartlett's statistic (corrected)   1.244
 P value 0.5369
 P value summary   ns
 Do the variances differ signif. (P < 0.05)   No

ANOVA Table	SS	df	MS
Treatment (between columns)	14287	2	7144
Residual (within columns)	2057	15	137.1
Total	16344	17	

Bonferroni's Multiple Comparison Test	Mean Diff.	t	Significant? P < 0.05?	Summary	95% CI of diff.
CFRP vs GC	39.57	5.853	Yes	***	21.36 to 57.78
CFRP vs HOPG	68.75	10.17	Yes	***	50.54 to 86.96
GC vs HOPG	29.18	4.315	Yes	**	10.96 to 47.39