RSC Advances

ARTICLE

Supporting Information

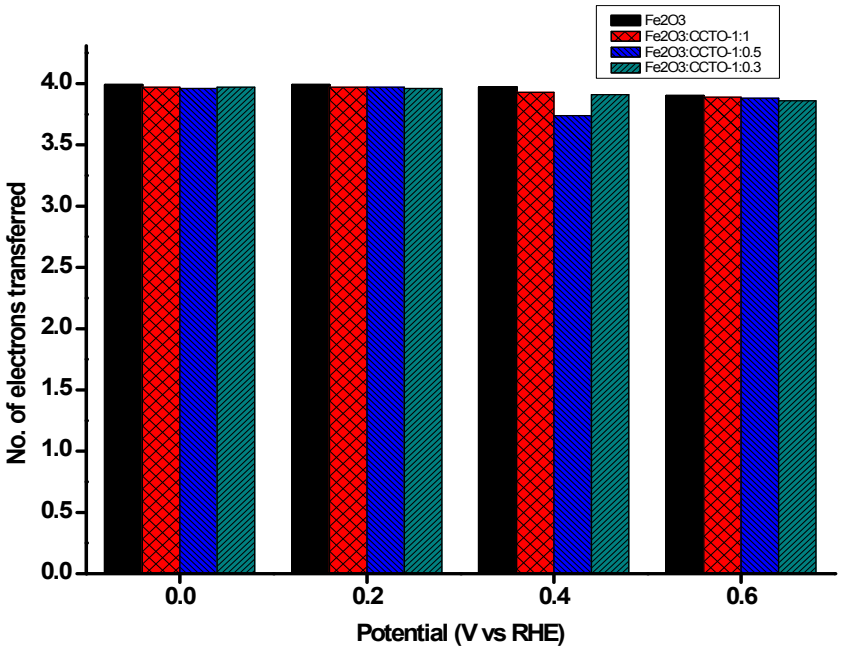
S1 Table 1. Performance of different perovskite electrocatalysts for ORR

S.No.	Perovskite material	Onset potential (V vs RHE)	$\%H_2O_2$	References
1	$LaNiO_3$	0.67V	<2%	[1]
2	$LaCoO_3$	0.72V	<2%	[1]
3	$LaFeO_3$	0.67V	<2%	[1]
4	$LaMnO_3$	0.68V	<2%	[1]
5	$LaCrO_3$	0.67V	<2%	[1]
6	$La_{0.6}Ca_{0.4}CoO_3$-C	1.30V (vs Hg/HgO)	3-14%	[6]
7	$La_{0.6}Ca_{0.4}CoO_3$	-0.70V (vs Hg/HgO)	3-14%	[6]
8	$BaTiO_{3-x}$	0.85V	15%	[10]
9	$La_x(Ba_{0.5}Sr_{0.5})_{1-x}Co_{0.8}Fe_{0.2}O_{3-\delta}$ (BSCF)	0.70V	15%	[12]
10	$BaMnO_3$	0.77V	--	[15]
11	$BaMnO_3$ @5%C	0.84V	--	[15]
12	$La_{0.8}Sr_{0.2}MnO_3$	---	0%	[18]
13	Sr_2FeMoO_6	-0.15V (vs Hg/ HgO)	---	[20]
14	Sr_2CoMoO_6	-0.15V (vs Hg/ HgO)	---	[20]
15	**$CaCu_3Ti_4O_{12}$- Fe_2O_3**	**0.77 V**	**2.33%**	**in this article**

S2. Table 2 Performance of synthesized catalyst for ORR

S.No.	Name of Material	Onset Potential (V vs RHE)	% H_2O_2 (V vs RHE)			
			0V	0.2V	0.4V	0.6V
1	Fe_2O_3	0.73	0.263	0.468	1.28	4.80
2	Fe_2O_3 - CCTO- 1:0.3	0.75	1.52	1.509	3.58	5.72
3	Fe_2O_3 - CCTO- 1:0.5	0.76	1.84	1.38	4.58	5.56
4	Fe_2O_3 - CCTO- 1:1	0.77	1.37	1.76	4.31	7.08

S3.Plot showing number of electrons transferred by Fe_2O_3, Fe_2O_3 – CCTO 1:1, Fe_2O_3 – CCTO 1:0.5 and Fe_2O_3 – CCTO 1:0.3 at potentials 0V, 0.2V, 0.4V and 0.6V (vs RHE).



S4. Elemental analysis confirming presence of components from both CCTO and Fe_2O_3 in the composites