

Enhanced Oxygen Reduction Activity of Bimetallic Pd-Ag Alloy Supported Mesoporous Cerium Oxide Electrocatalysts in alkaline Media

M. Sridharan, T. Maiyalagan*,

Electrochemical Energy Laboratory, Department of Chemistry,

SRM Institute of Science and Technology, Kattankulathur-603203, Tamil Nadu, India.

Supporting information

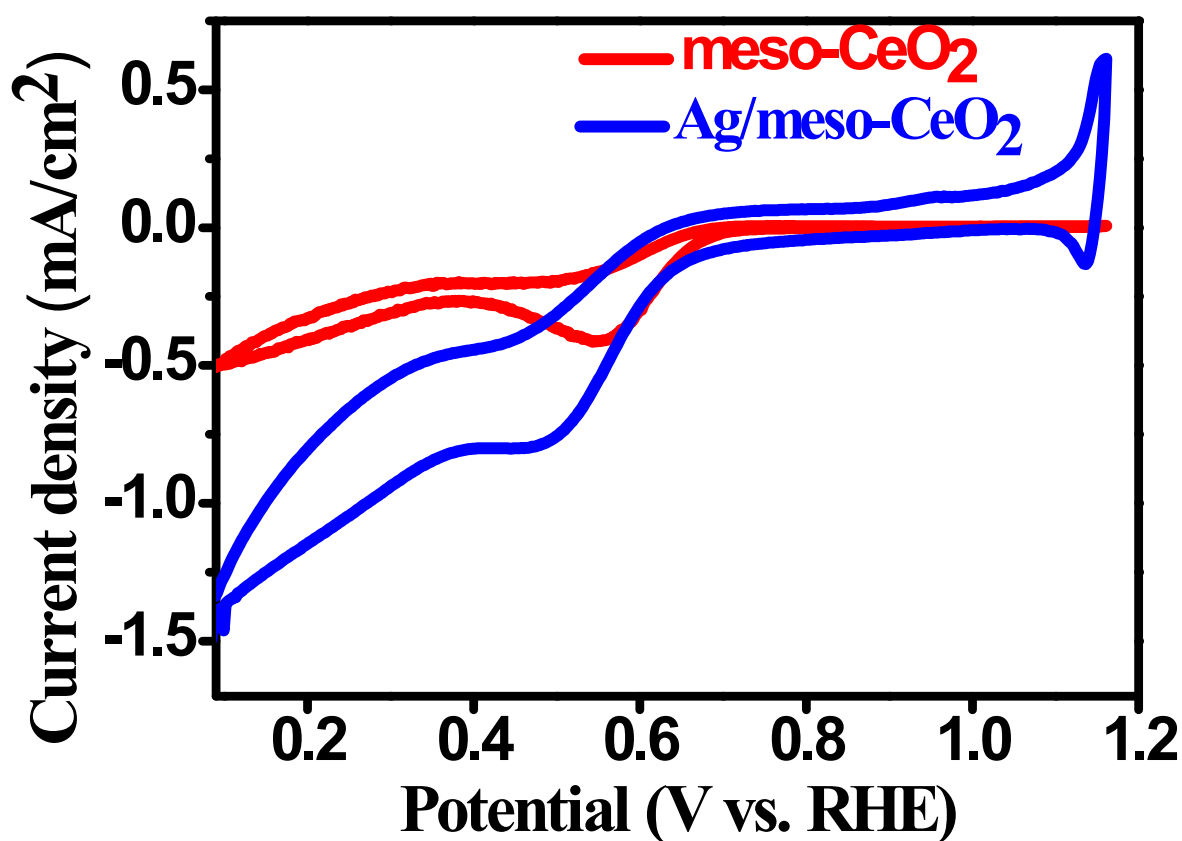


Fig. S1. CV curves of meso-CeO₂ and Ag/meso-CeO₂ in O₂ saturated 0.1 M KOH solution at 1600 rpm

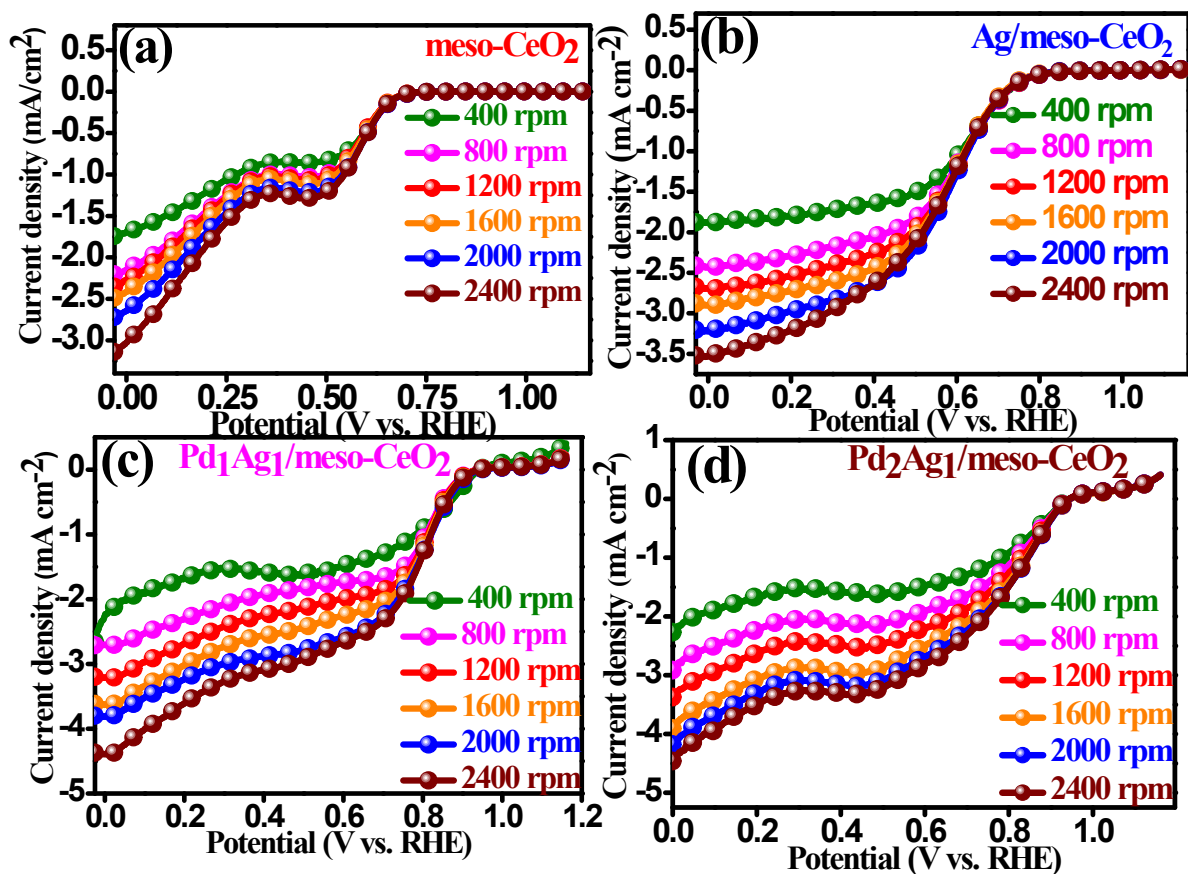


Fig. S2. LSV curves of the (a) meso-CeO₂, (b) Ag/meso-CeO₂, (c) Pd₁Ag₁/meso-CeO₂, (d) Pd₂Ag₁/meso-CeO₂ in 0.1 M KOH saturated with O₂ at various rotating rates

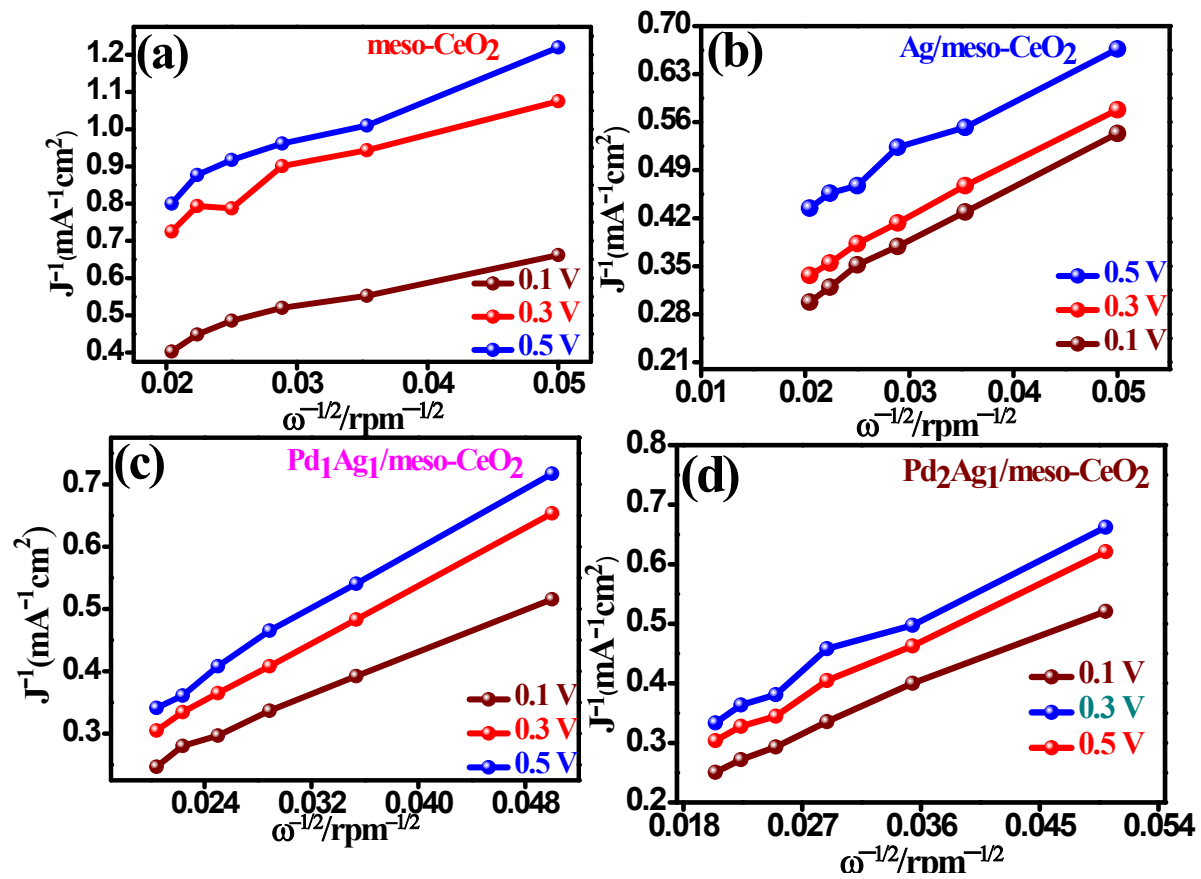


Fig. S3 KL-plots of (a) meso-CeO₂, (b) Ag/meso-CeO₂, (c) Pd₁Ag₁/meso-CeO₂, (d) Pd₂Ag₁/meso-CeO₂

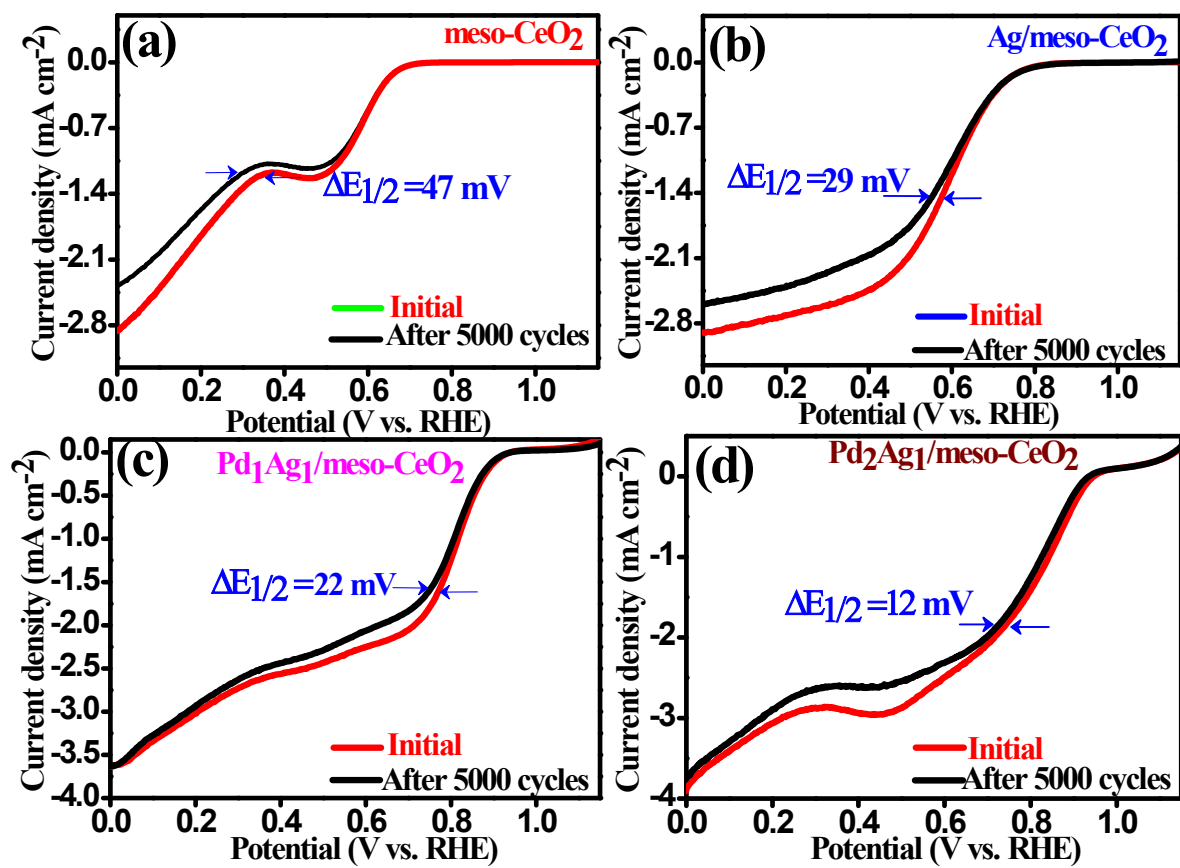


Fig. S4 LSV curves of (a) meso-CeO₂, (b) Ag/meso-CeO₂, (c) Pd₁Ag₁/meso-CeO₂, (d) Pd₂Ag₁/meso-CeO₂ before and after 5000 cycles at 1600rpm.

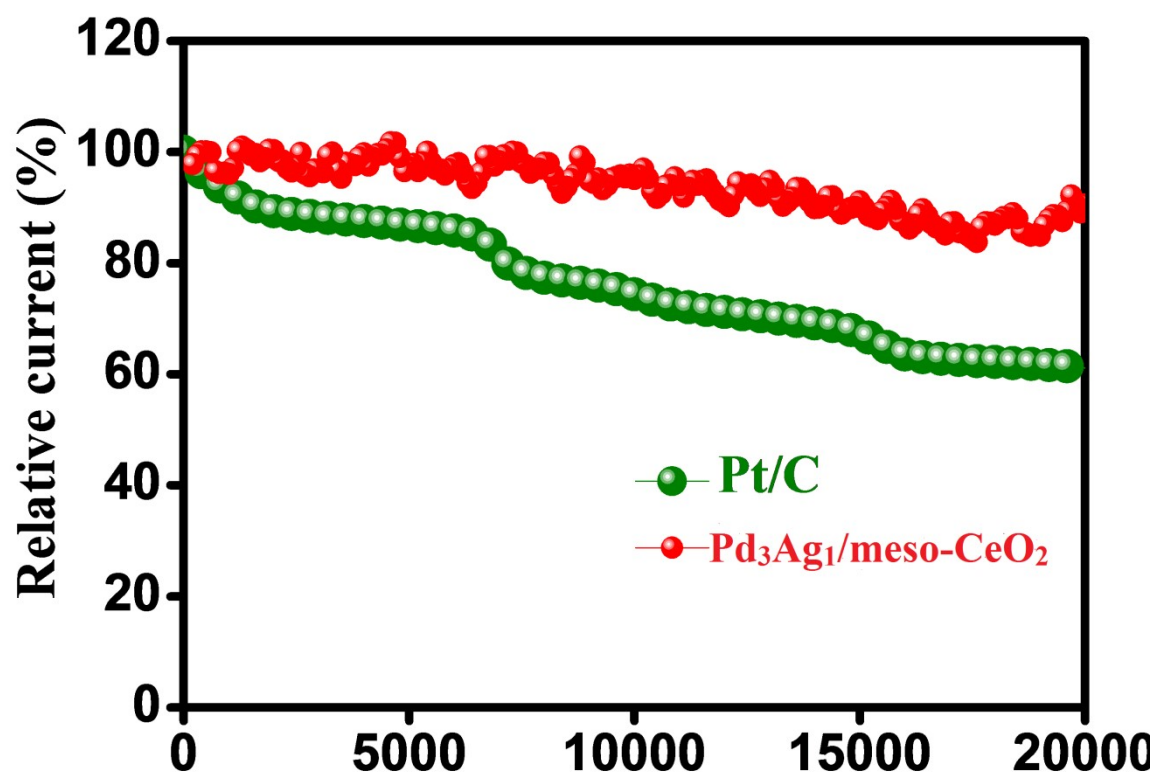


Fig. S5 Chronoamperometric study of the Pd₃Ag₁/meso-CeO₂ at 0.85 (V vs RHE)

S.No	Electrocatalyst	ECSA (m ² g ⁻¹)	E _o (V versus RHE)	E _{1/2} (V versus RHE)	MA (mA/mg)	References
1	PdZn-disordered	48	0.93	0.74	8.30	S1
2	PdZn-ordered	55	0.97	0.81	24.4	S1
3	PdZn-Core-Shell	90	0.98	0.82	44.0	S1
4	CuPd nanocube	41.8	-	0.81	130	S2
5	Pd ₄ Co/C (Core-Shell)	35	-	-	173	S3
6	Pt/CeO ₂ /CNT	39.3	-	0.85	-	S4
7	Ag-CeO ₂ /VXC-72	-	0.707	0.90	-	S5
8	Pd-CeO ₂ -NR/C	25.5	0.97		-	S6
9	Pd/C	103.7	0.95	0.76	39	S1
10	Pd₃Ag₁/meso-CeO₂	76	0.97	0.86	157	Present work

Table S1. Comparison of ORR activity of Pd₃Ag₁/meso-CeO₂ with Pd and CeO₂ based catalyst.

References

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