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Facile synthesis of doped mayenite electride composite as a non-noble metal, durable electrocatalysts for oxygen reduction reaction (ORR)

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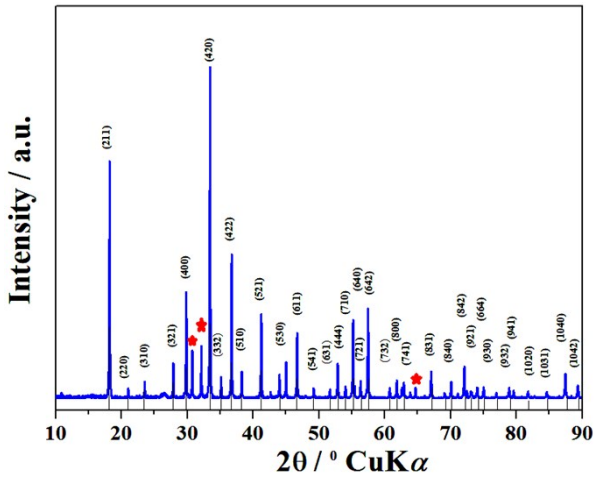

Fig.S1. For all samples mol% of Sn >1 mol % has C12A7 phase along with some Sn-phase.

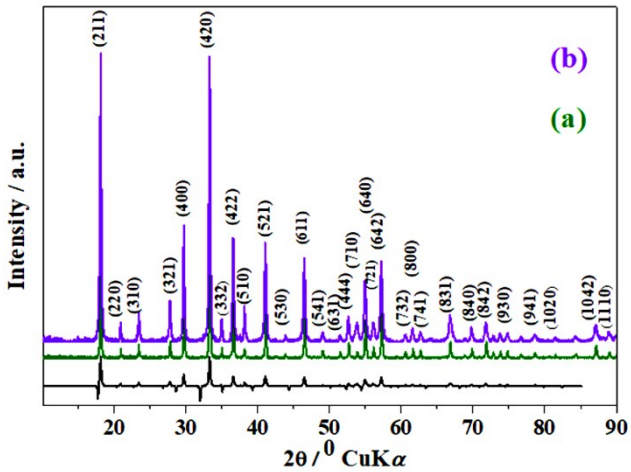

Fig.S2. XRD comparison for $C_{12}A_{7-x}Sn_x:e^-$ samples where x = 1, **(a)** graphene coated, **(b)** no coating, heated at 1550 °C, 1 h.

Table.S1. EDX and XPS data of highly conductive Sn-doped C12A7:e^- composite.

Element Peak	Energy (eV)	Peak Width FWHM (eV)	Peak Area (counts)	Concentration (at. %)
C 1s	284.43	0.886	2657.7	47%
C 1s	285.40	2.193	1911.7	33%
C 1s	288.93	5.179	1181.8	20%
Ca $2p_{3/2}$	348.55	2.227	644.4	59%
Ca $2p_{1/2}$	352.20	2.964	450.9	41%
Al 2p	75.47	3.058	192.9	100%
O 1s	533.43	2.403	1665.7	71%
O 1s	531.95	2.142	685.9	29%
Sn 3d	489.09	7.42	130.6	71.75
Sn $3d_{3/2}$	495.206	4.08	32.4	17.79
Sn $3d_{5/2}$	483.97	3.78	19.0	10.46