

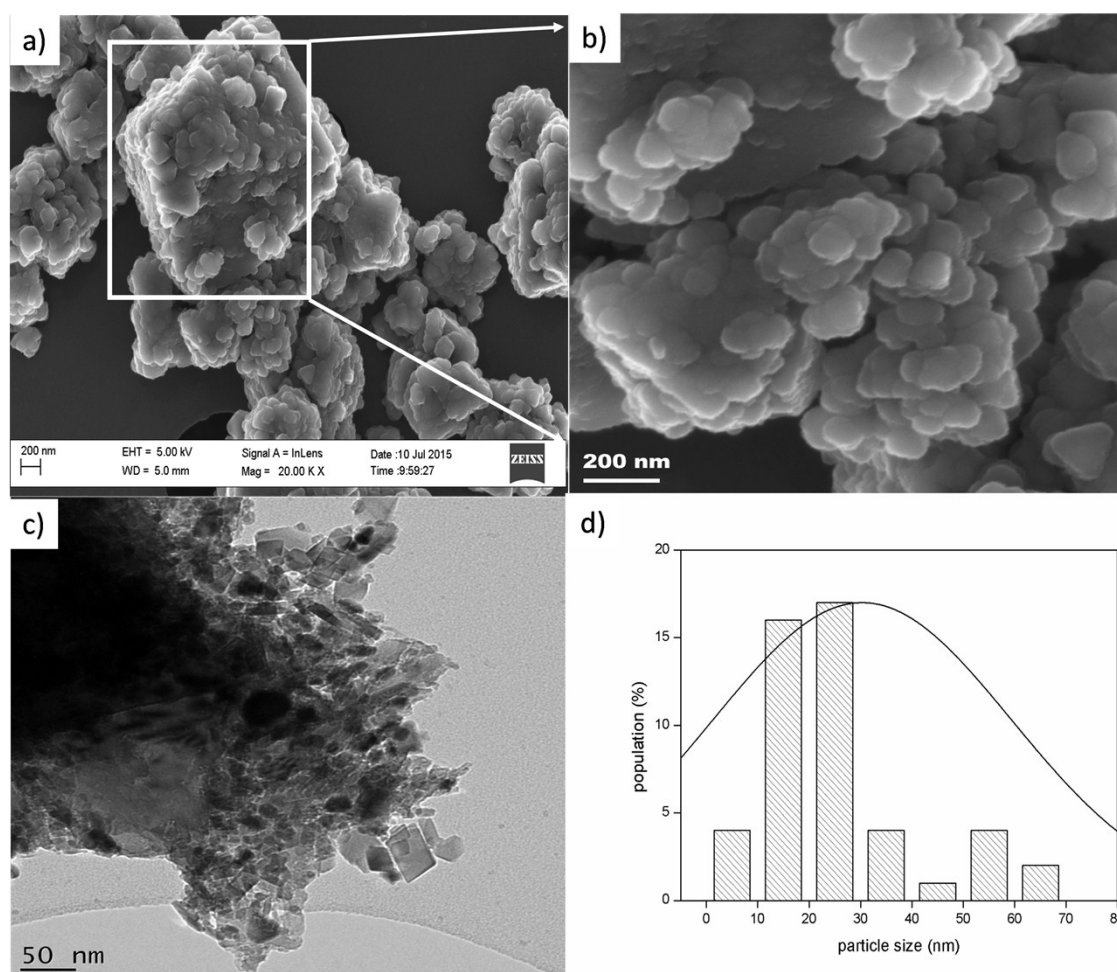
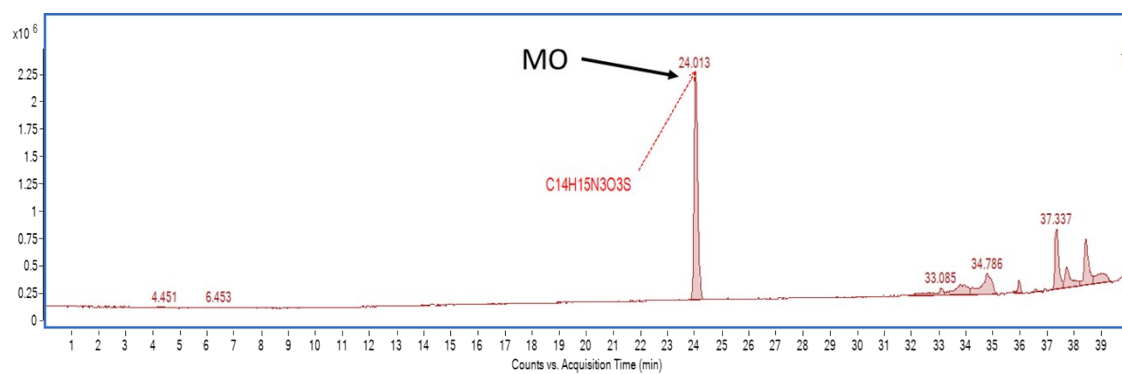


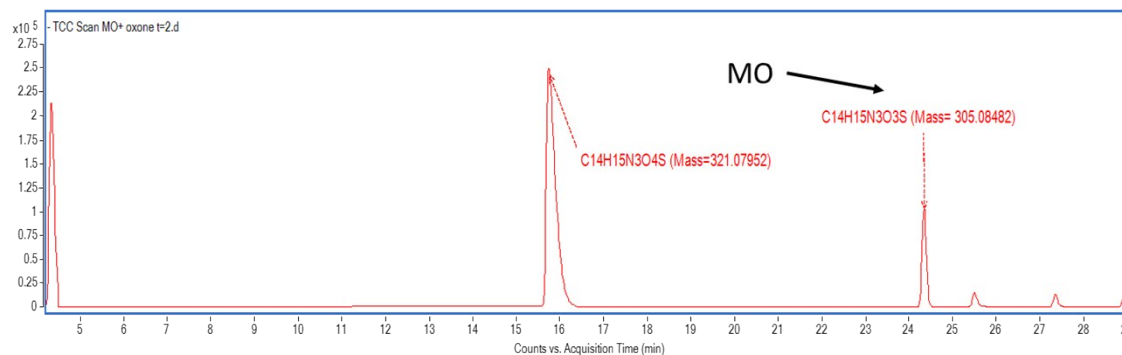
Figure S1: a) SEM image of Co₃O₄ octahedron particle, b) HRSEM image of the surface of a Co₃O₄ octahedron particles, c) TEM images of Co₃O₄ octahedron particles & d) particle size distribution of the rectangular particles from TEM

Table S1: Intermediates identified in PMS and Co3O4/PMS reactions with MO

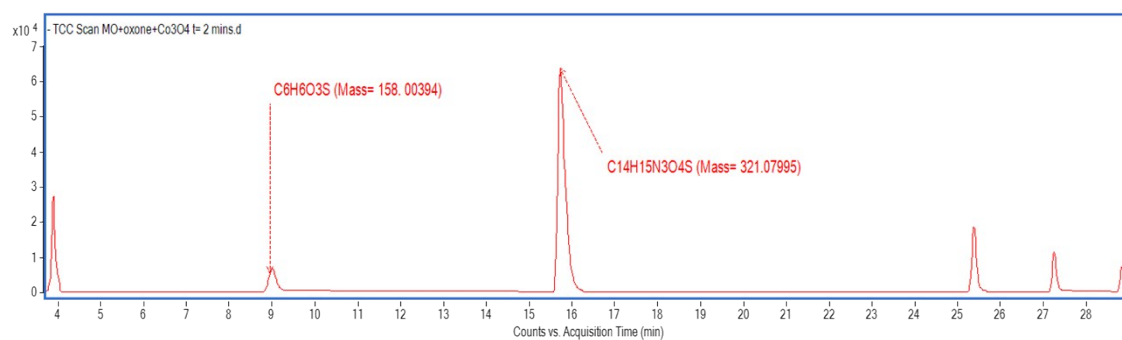
Sampling time	Reaction intermediates mass (amu)		
	Rt	PMS	Co ₃ O ₄ /PMS
30 seconds		96,96	96,96
		321,07	321,07
		306,05	306,05
		305,08	305,08
		281,99	281,99
		331,98	331,98
2 minutes		96,96	96,96
		ND	158,00
		321,07	321,07
		306,05	306,05
		305,08	305,08
		ND	291,03
		281,99	281,99
		331,99	331,99
5 minutes		96,96	96,96
		321,07	321,07
		306,05	306,05
		305,08	305,08
		281,99	281,99
		331,99	331,99
		381,98	381,98



$t = 0$ min



$t = 2$ min



$t = 2$ min

Figure S2: MO Chromatogram at different time interval

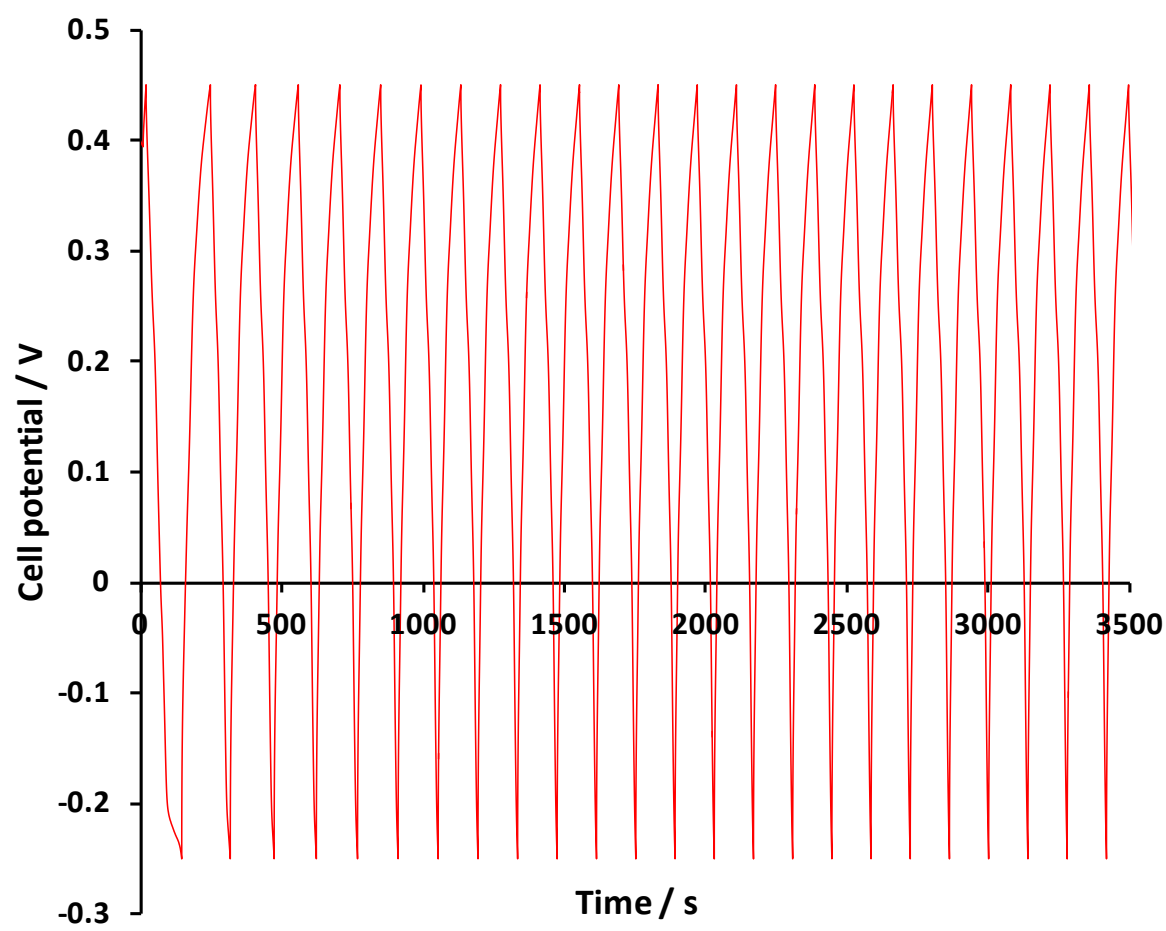


Figure S3: Galvanostatic charge/discharge curves of Co₃O₄ nanoparticles.