SUPPLEMENTARY INFORMATION

Table 1 – Observed 2θ diffraction peak positions of the prepared α - MoO_3. These peaks confirm the orthorhombic phase formation and crystallinity of the sample and well matched with ICDD data.

Table 1. 2θ values of the sample

hkl	Standard 2θ values	Prepared sample 2θ
(110)	23.33	23.14
(040)	25.69	25.50
(021)	27.29	27.11
(111)	33.73	33.48
(060)	38.97	38.67
(200)	45.76	45.93
(002)	49.19	49.07

Table 2 – The calculated parameters of β cos θ and 4 sin θ which are required to W-H plot based on Williamson-Hall method. These values help separate the contributions of crystallite size broadening and lattice strain in the XRD peaks. By plotting (4 sin θ) versus (β cos θ), the slope gives the micro strain.

Table 2. The calculated values of β cos θ and 4 sin θ for the prepared sample

2θ (degree)	FWHM (deg)	β cos θ	4 sin θ
23.15657	0.44806	0.007661	0.802827
25.47514	0.38931	0.006628	0.881943
27.09909	0.36369	0.006171	0.937144
33.40937	0.57868	0.009674	1.149755
38.66673	0.64265	0.010584	1.324256
45.80725	0.75122	0.012078	1.556729
48.99383	0.44136	0.00701	1.658577