Electronic Supplementary Information

Mn oxide/nanodiamond composite: A new water-oxidizing catalyst for water oxidation

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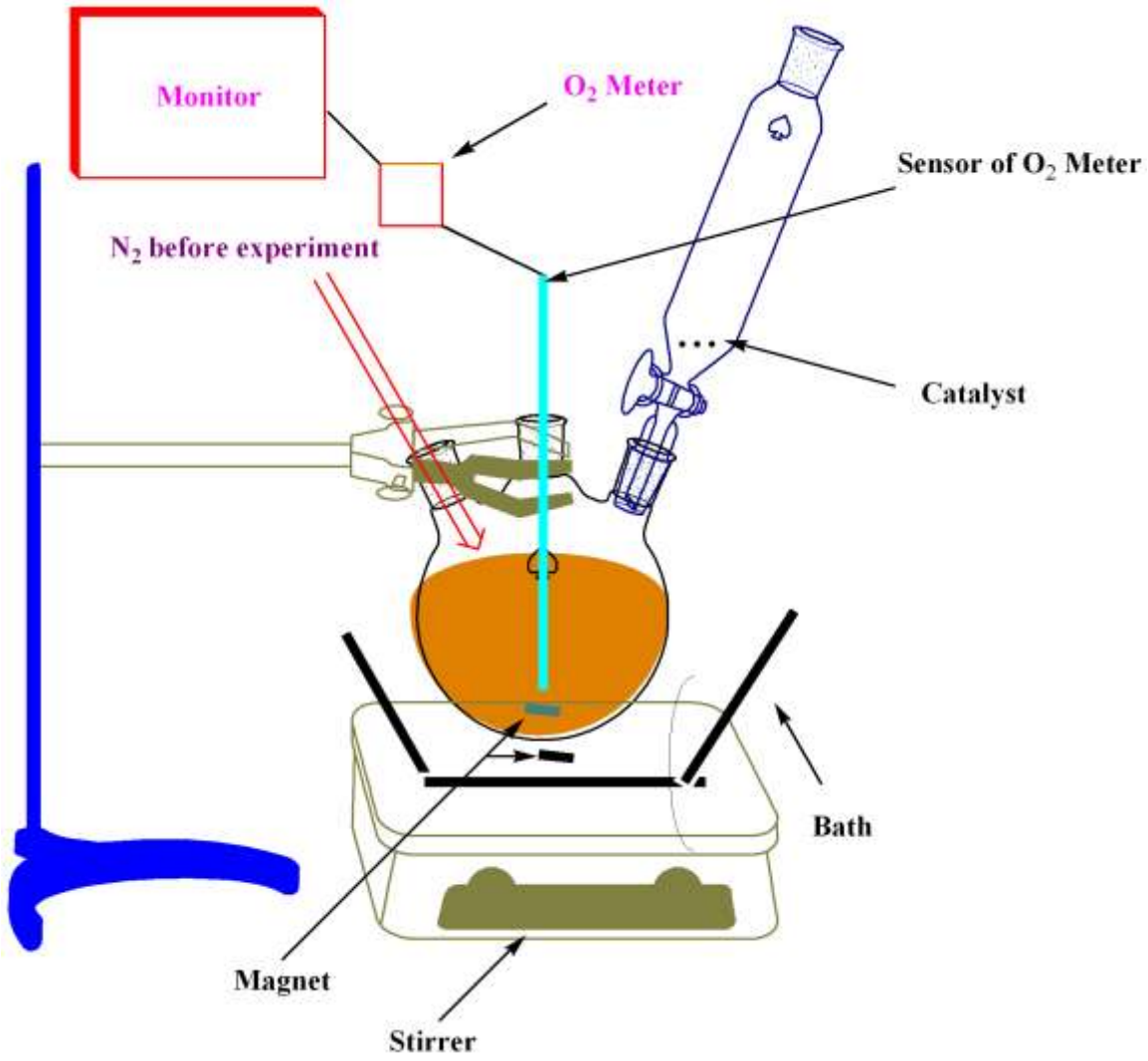
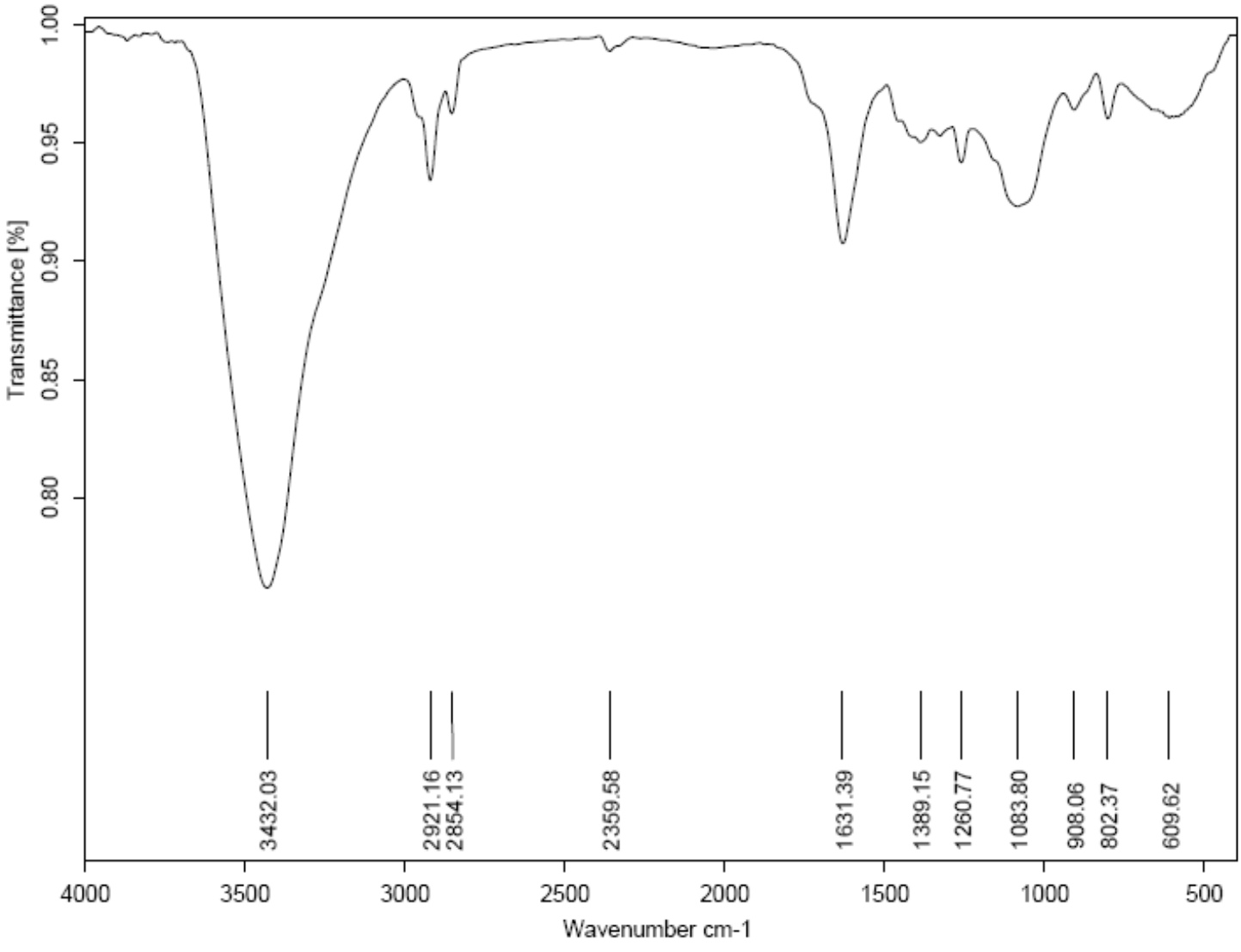


Scheme S1 Set up for water-oxidation experiments.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1389.15
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802.37
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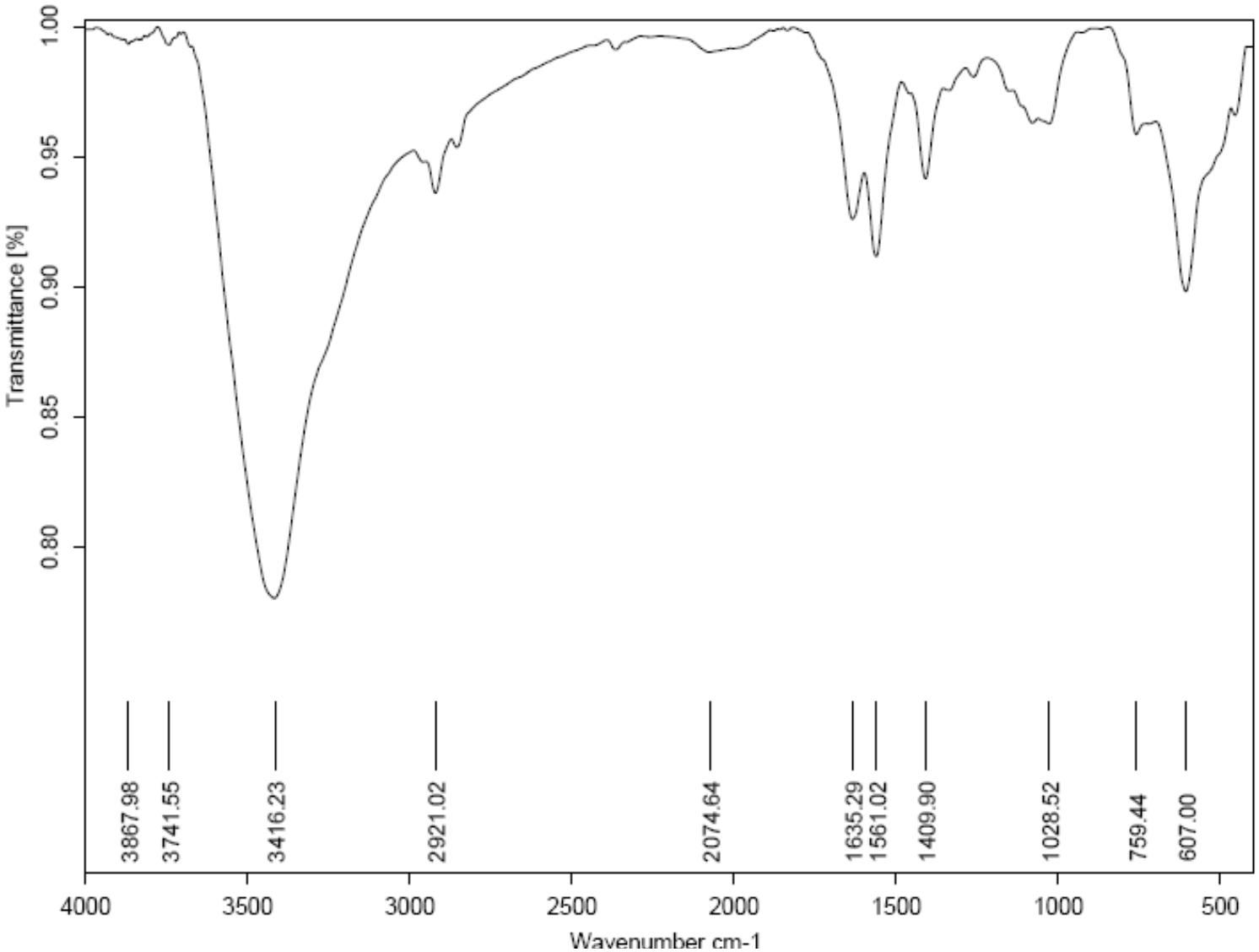
4000
3500
3000
2500
2000
1500
1000
500
Wavenumber cm-1

a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607.00
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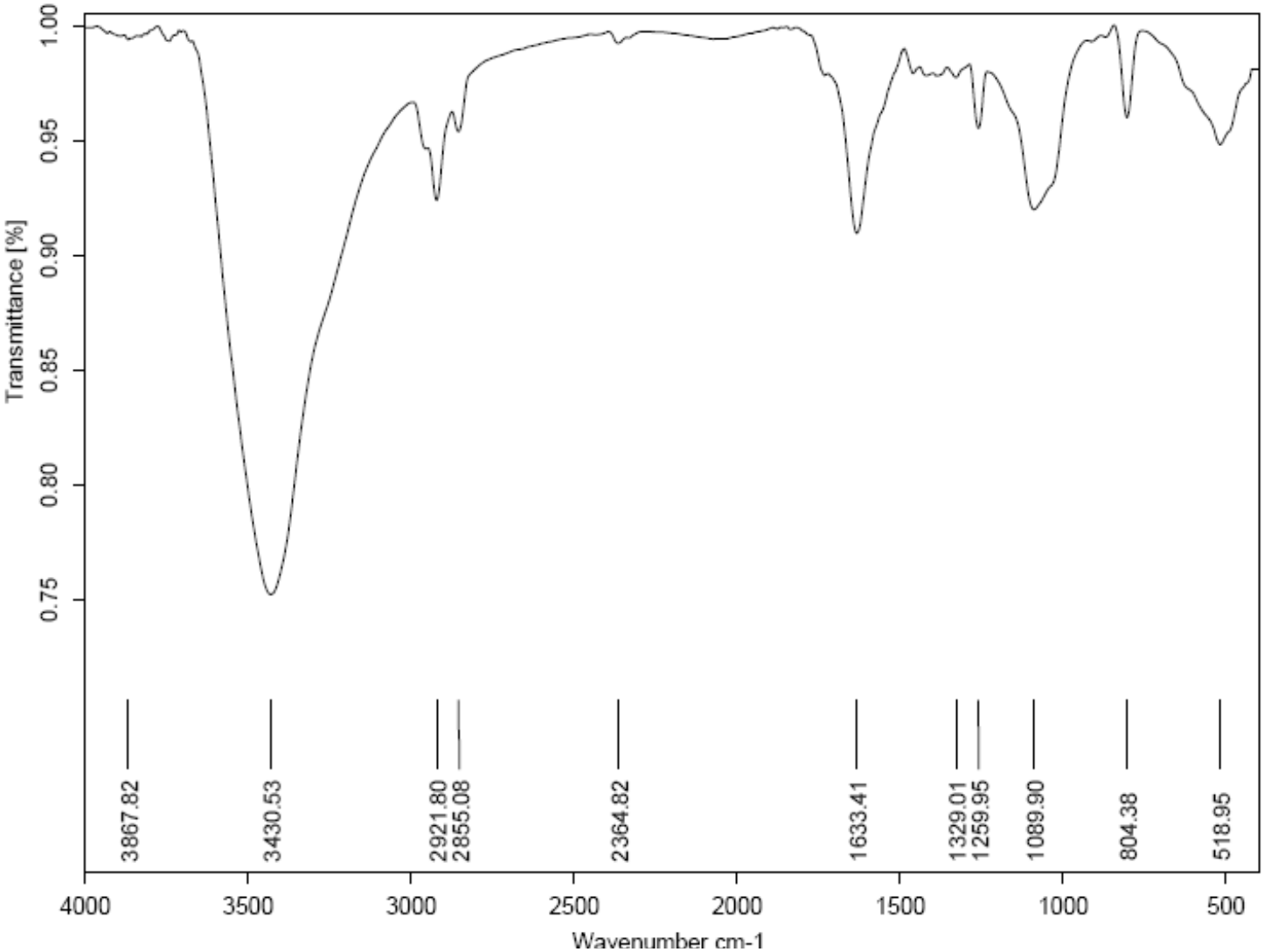
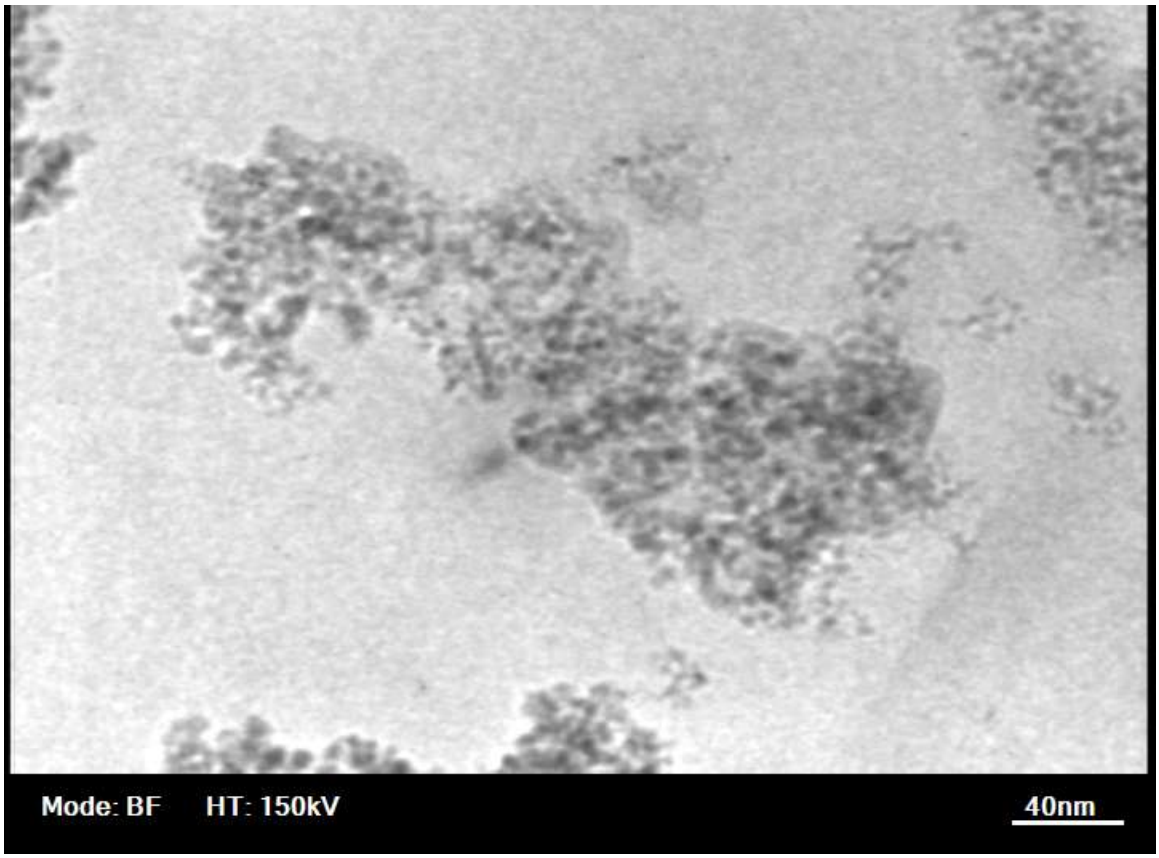
b

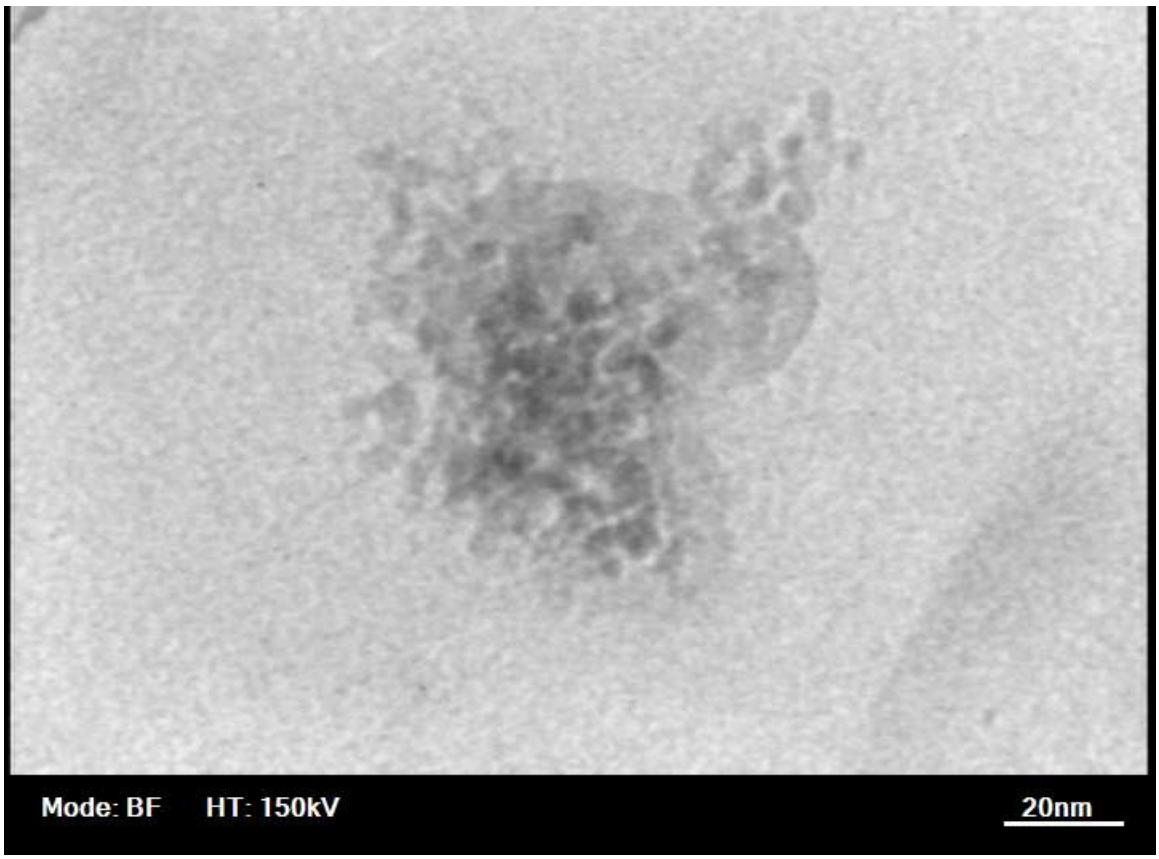


c

Fig. S1 FTIR spectra of nanodiamond (a), **1** (b) and **2** (c).



a



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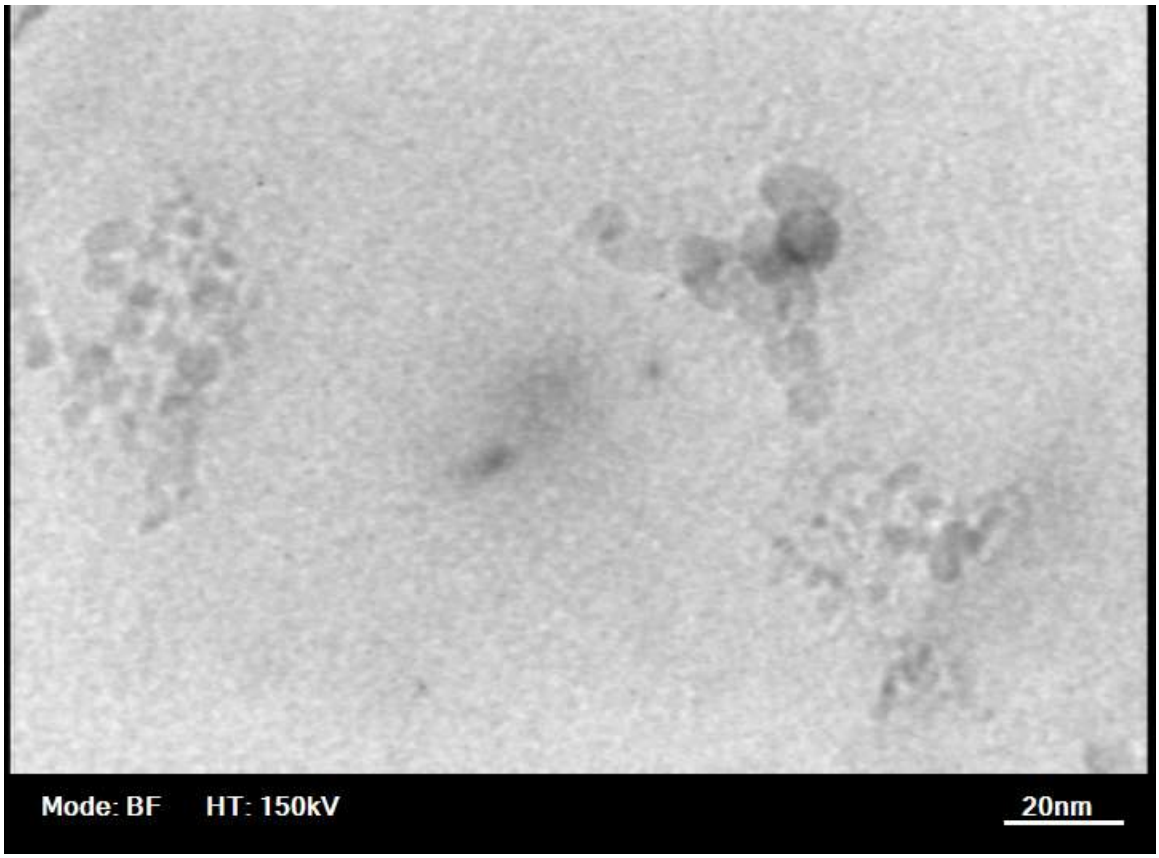

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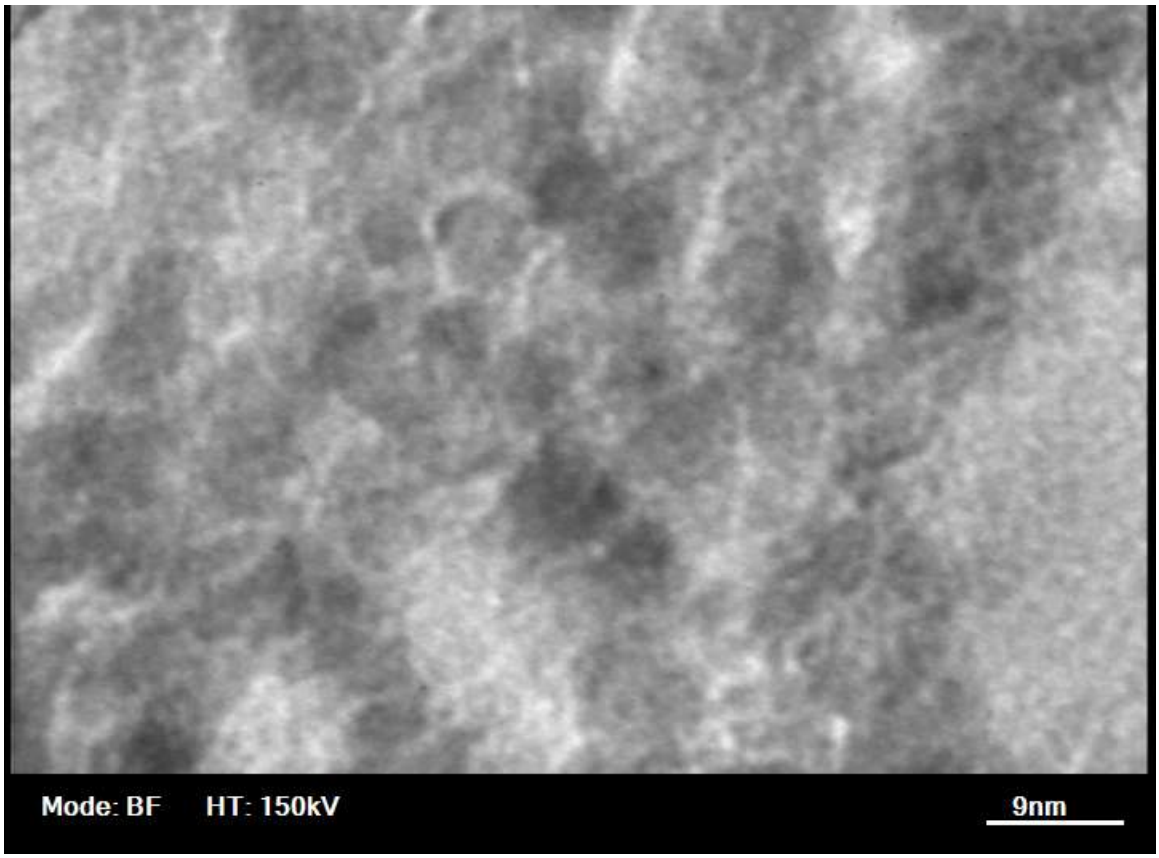

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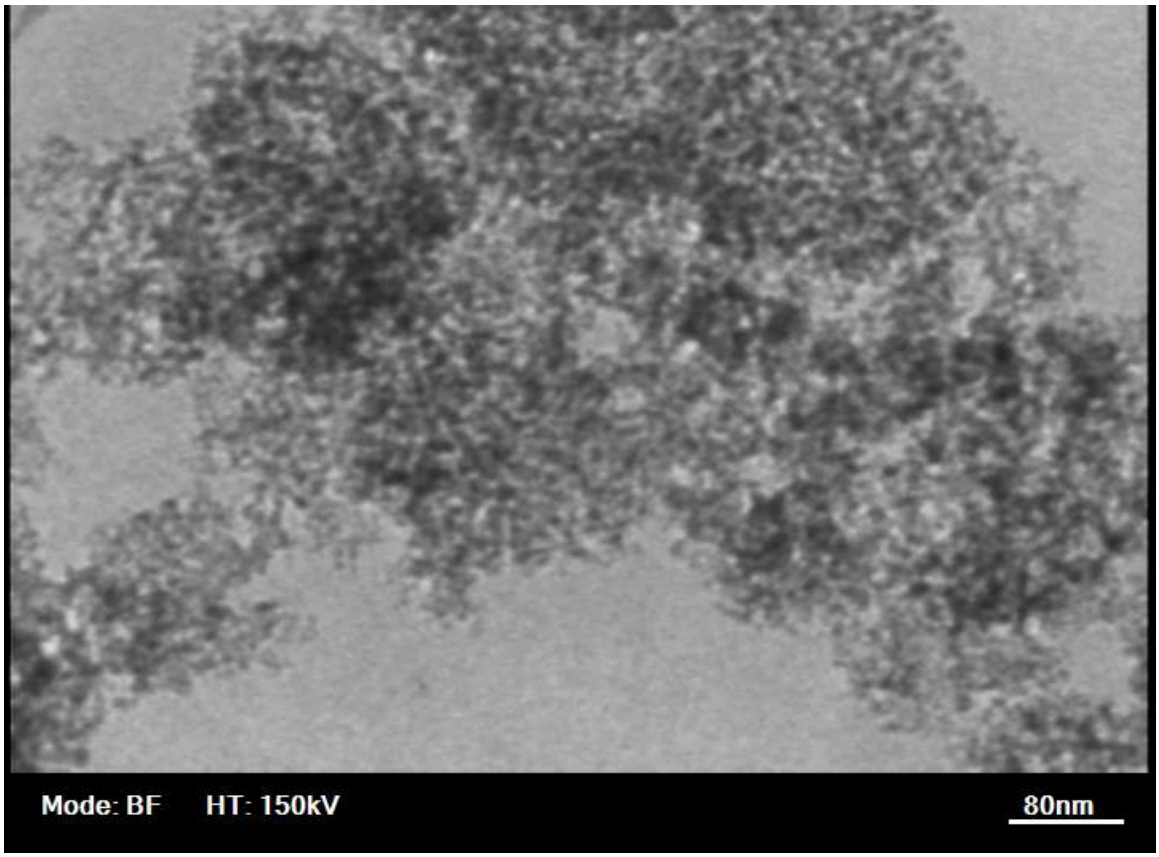

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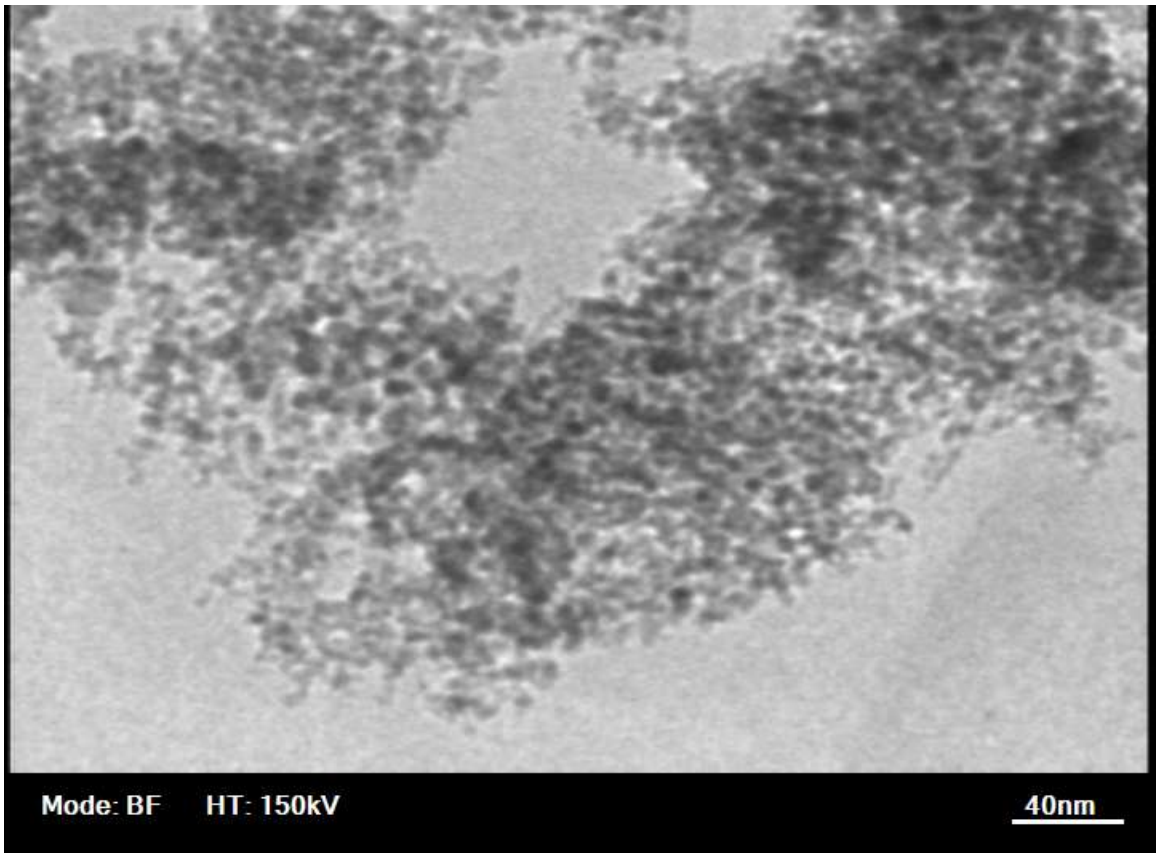

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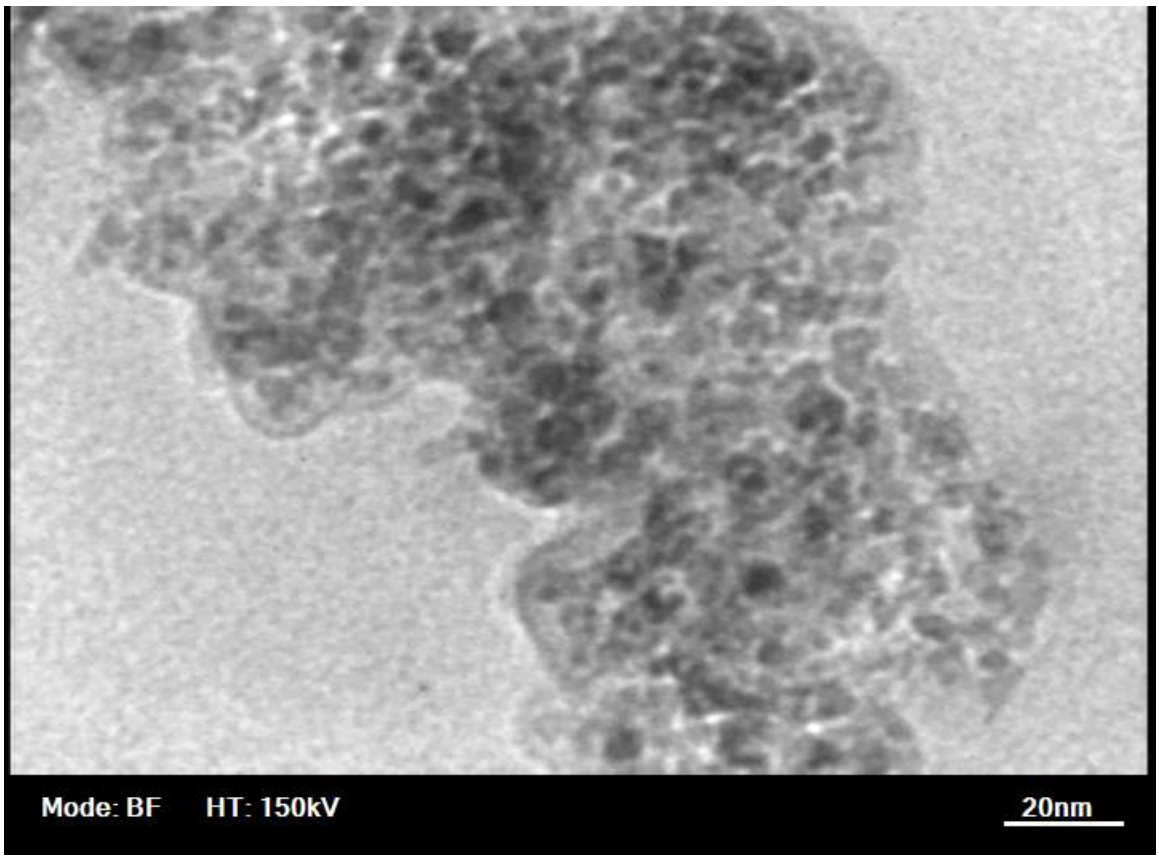

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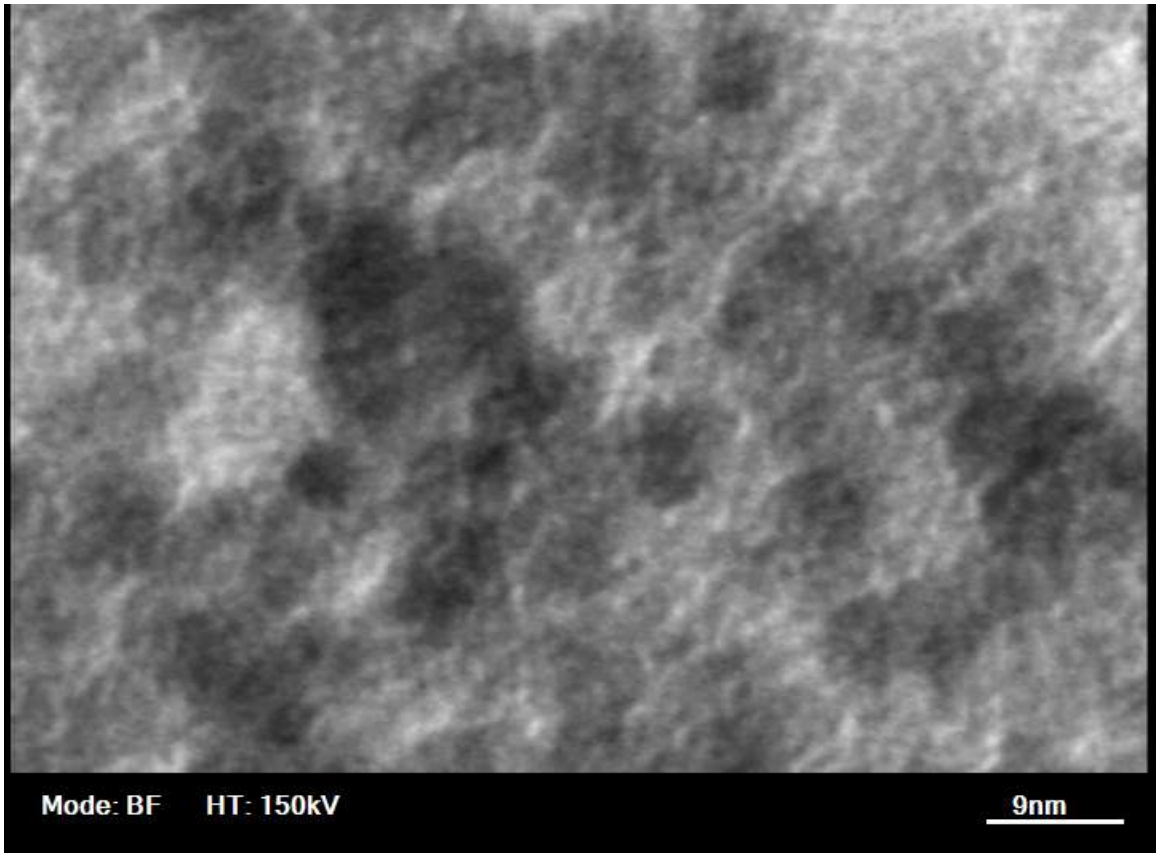

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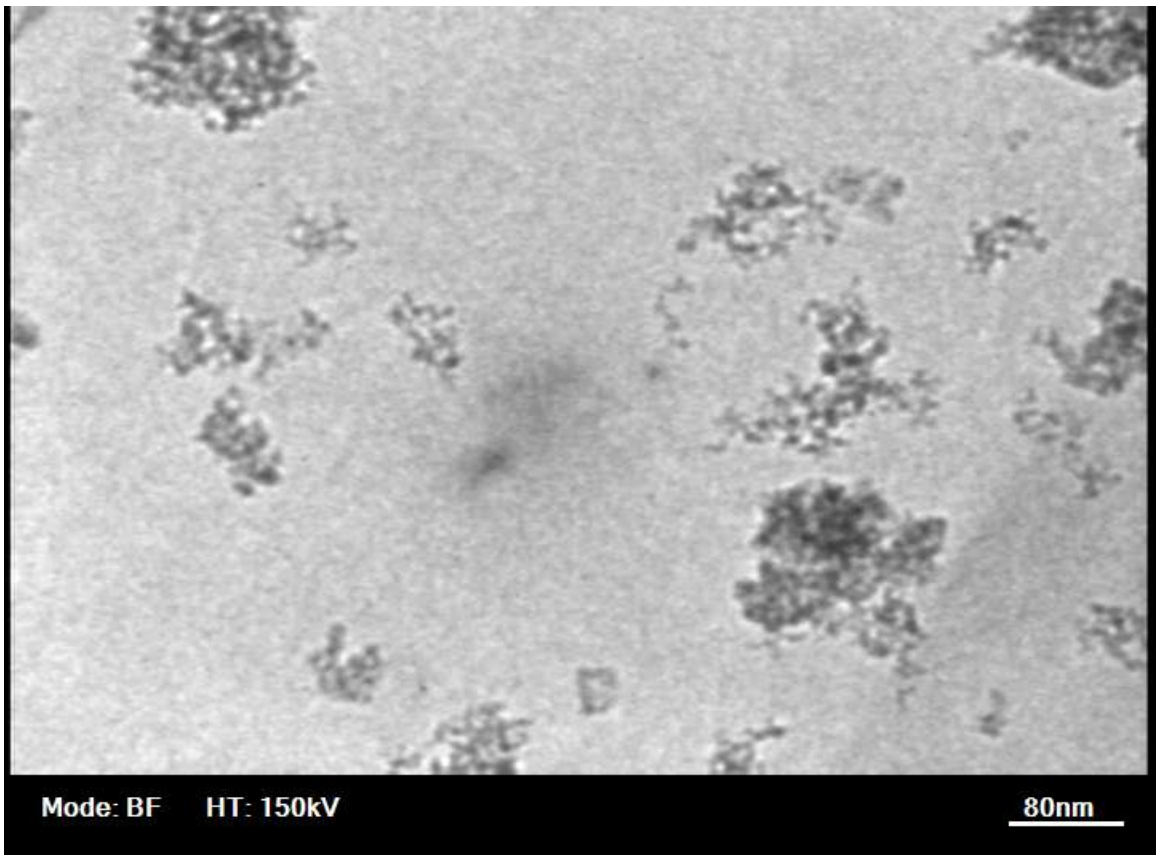

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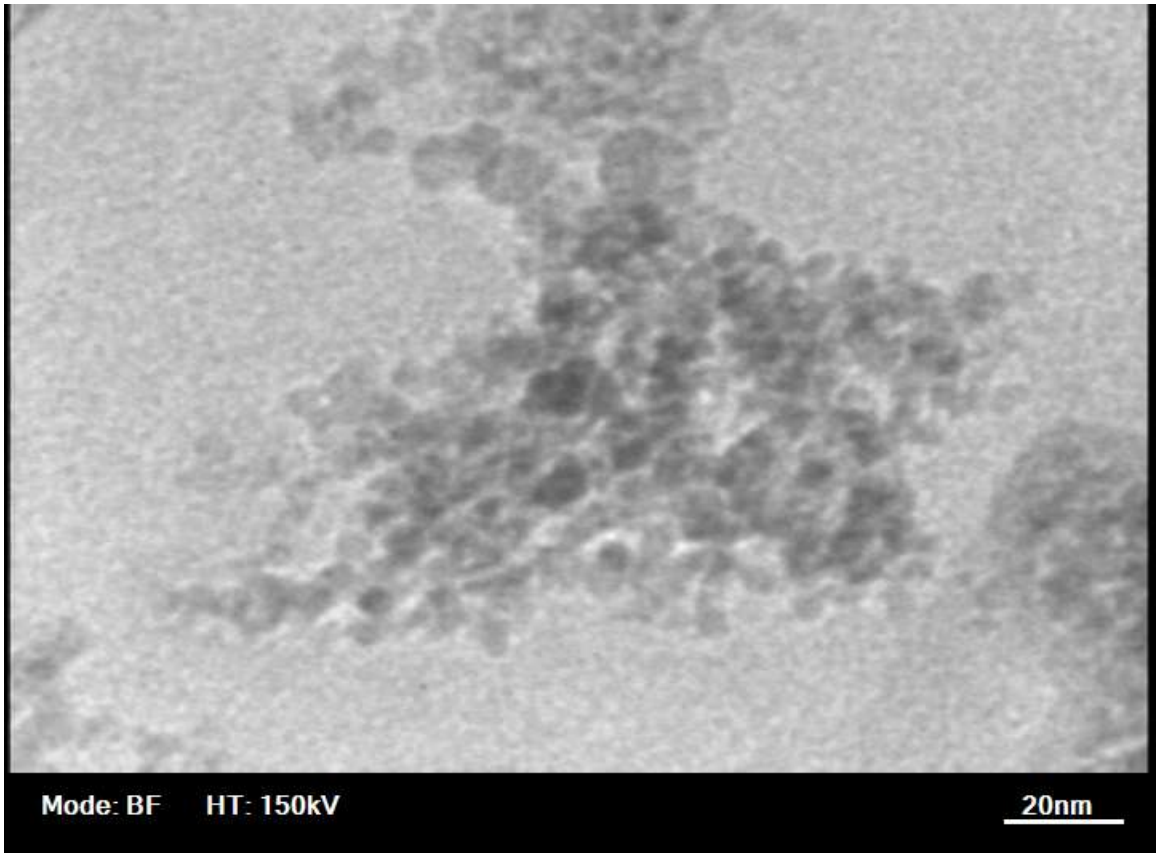

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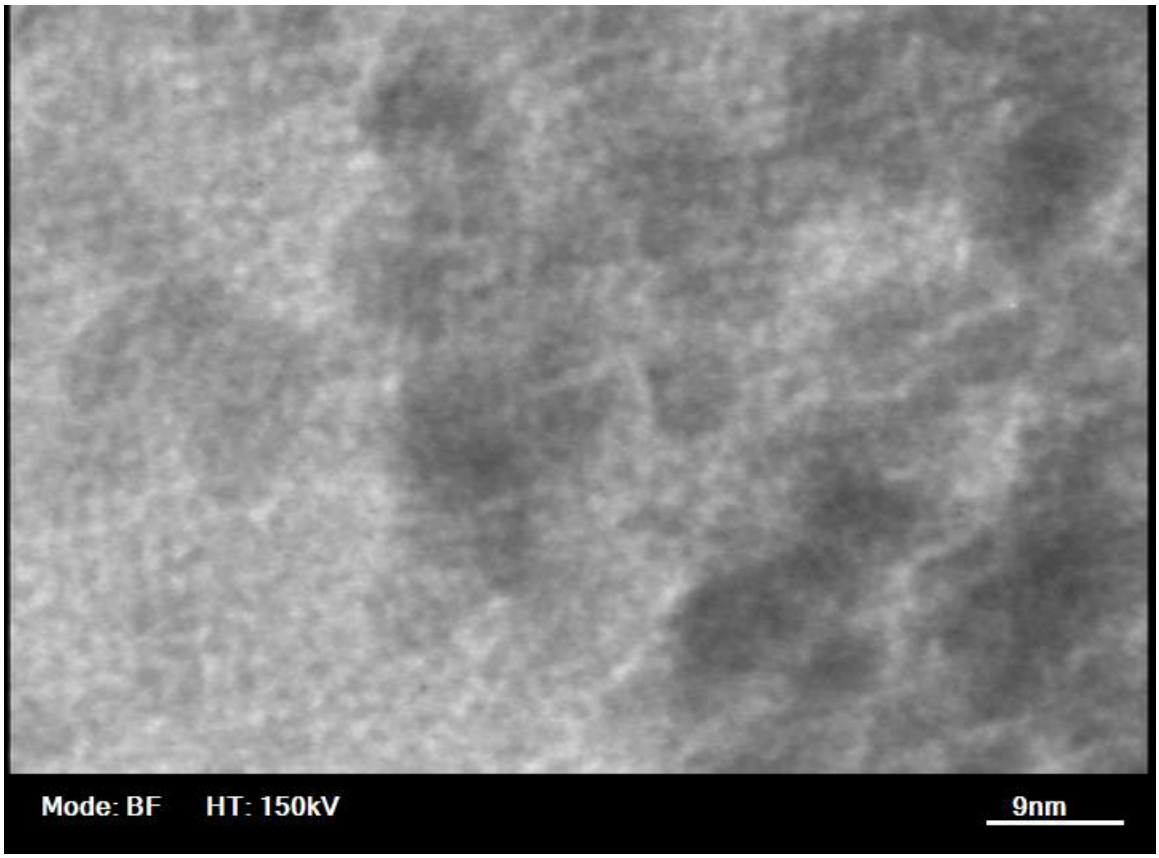

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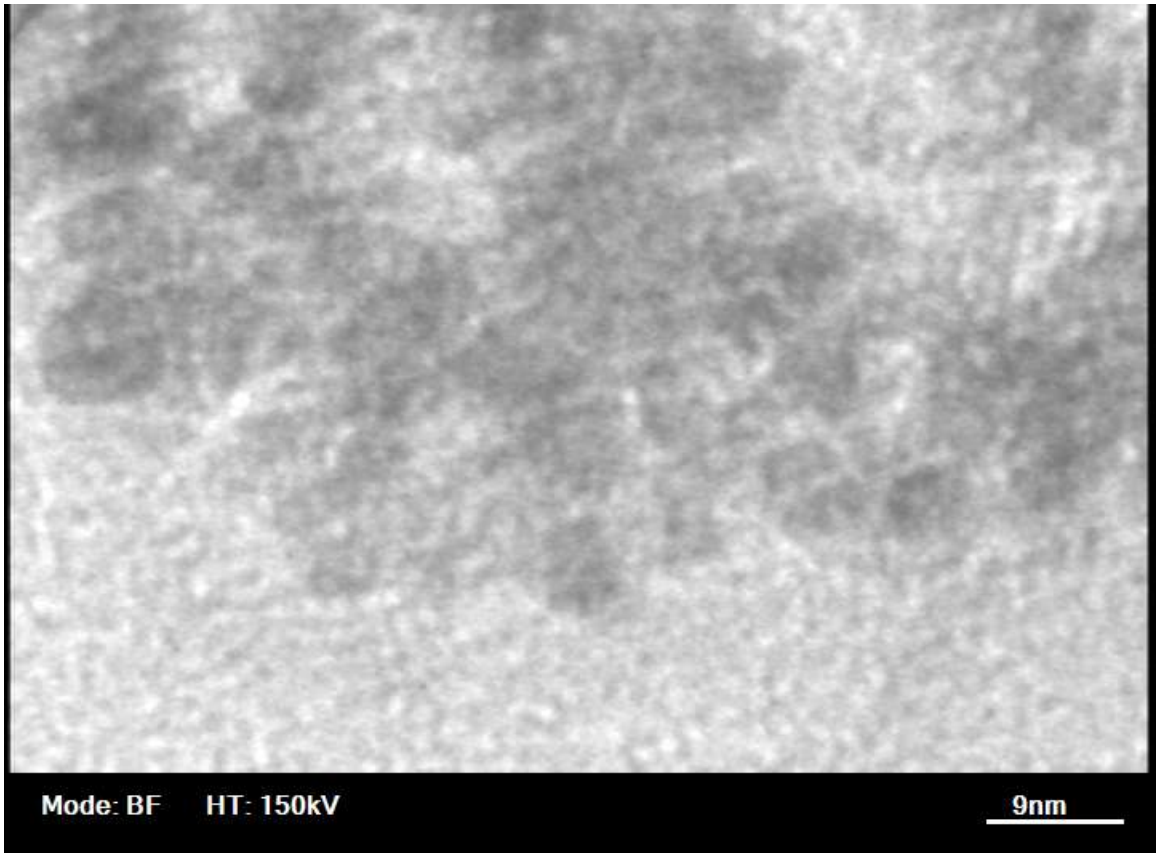

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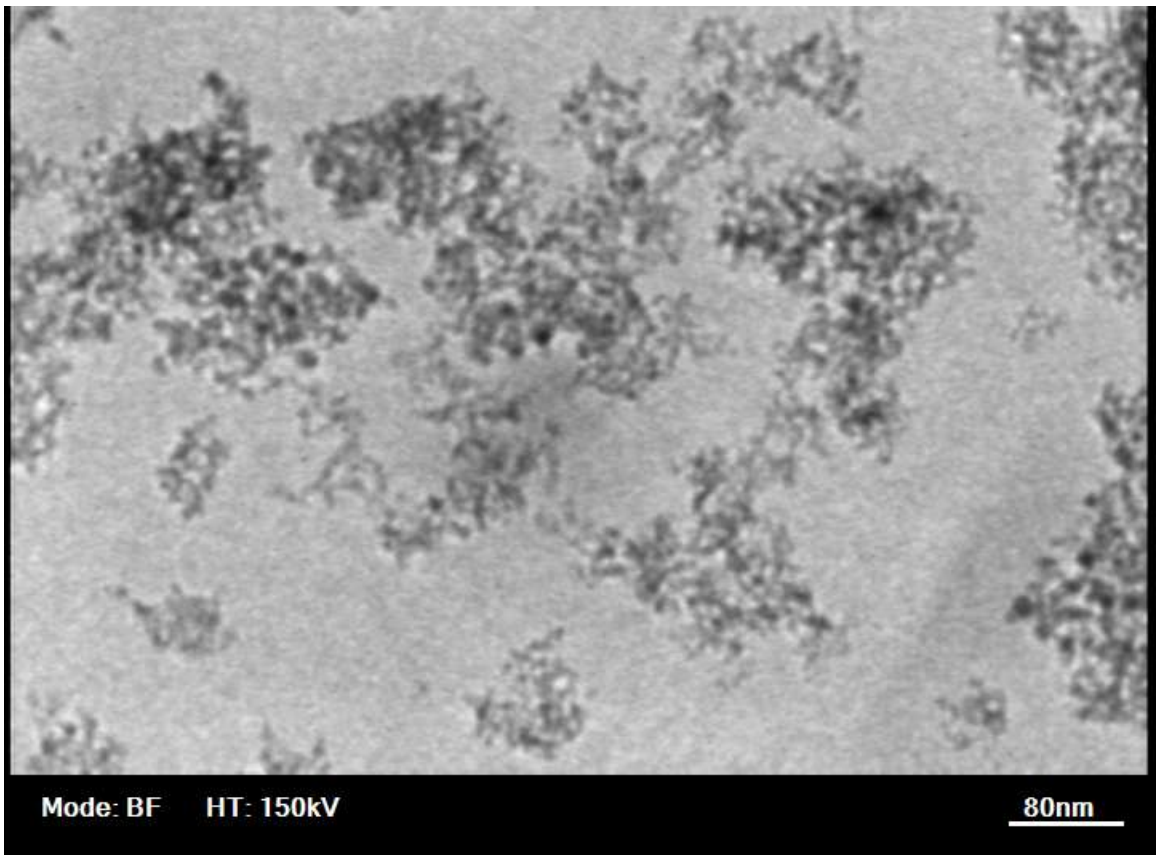

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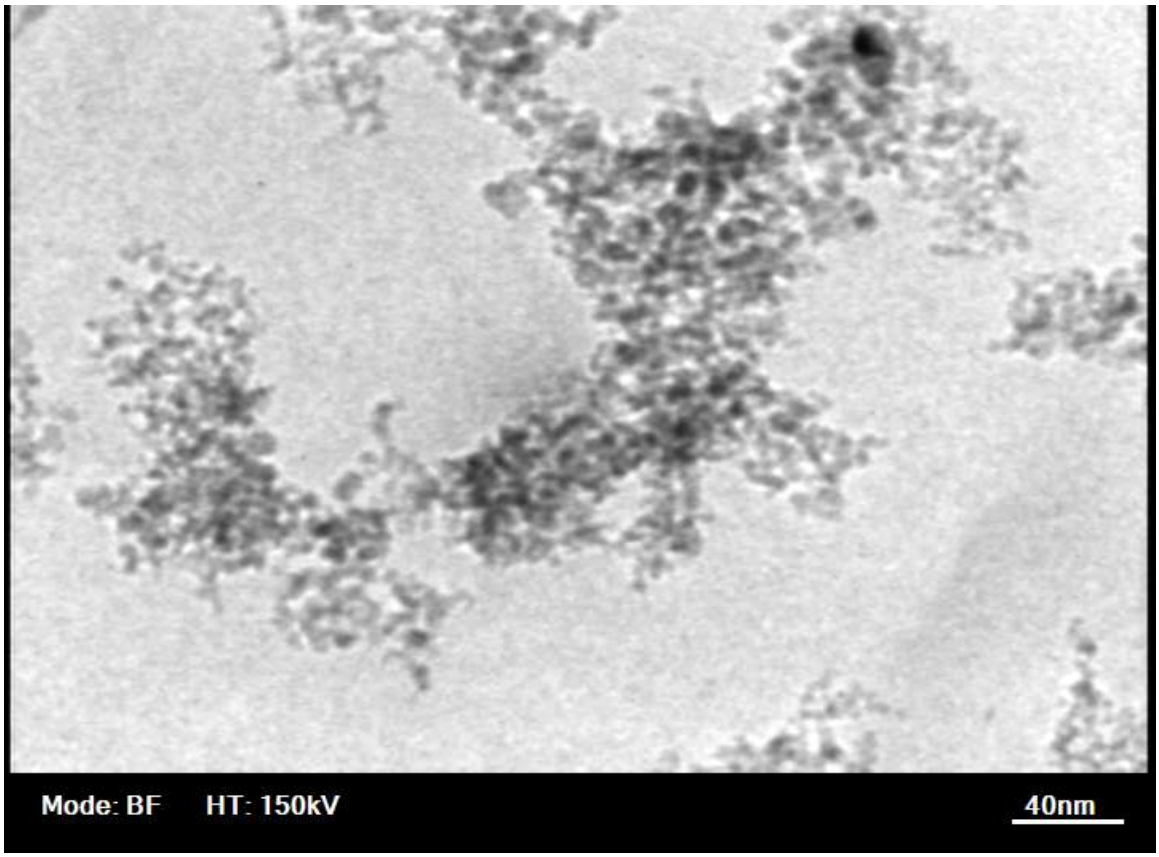

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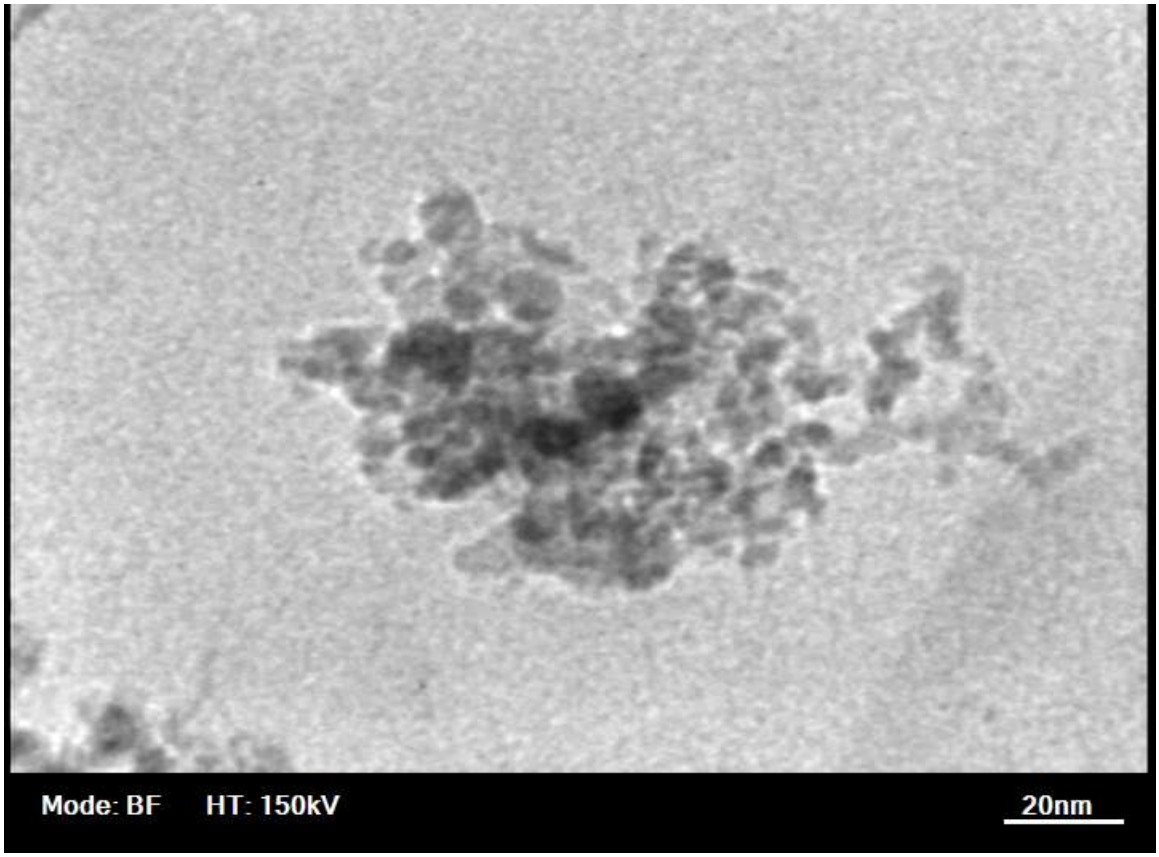

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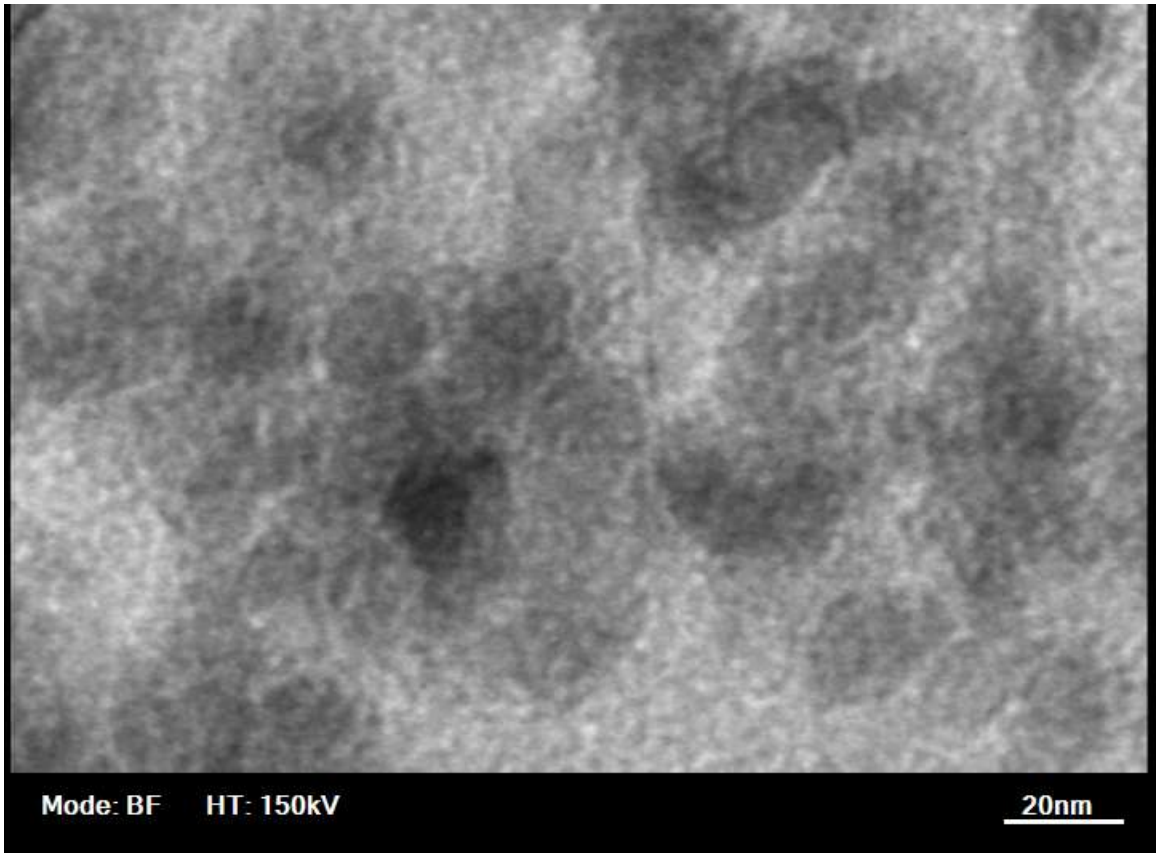
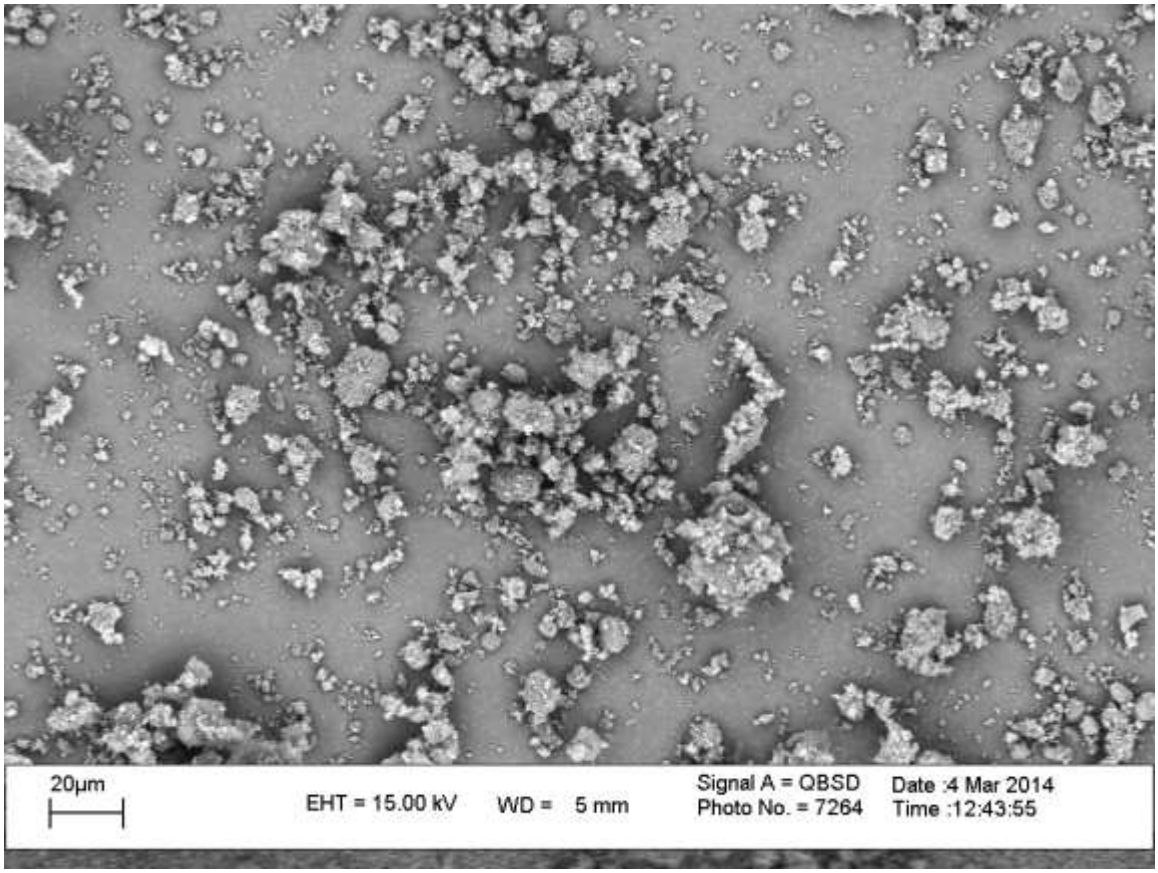


p

Fig. S2 TEM images from **1** (a-d), **2** (e-h), **3** (i-l) amd **4** (m-p).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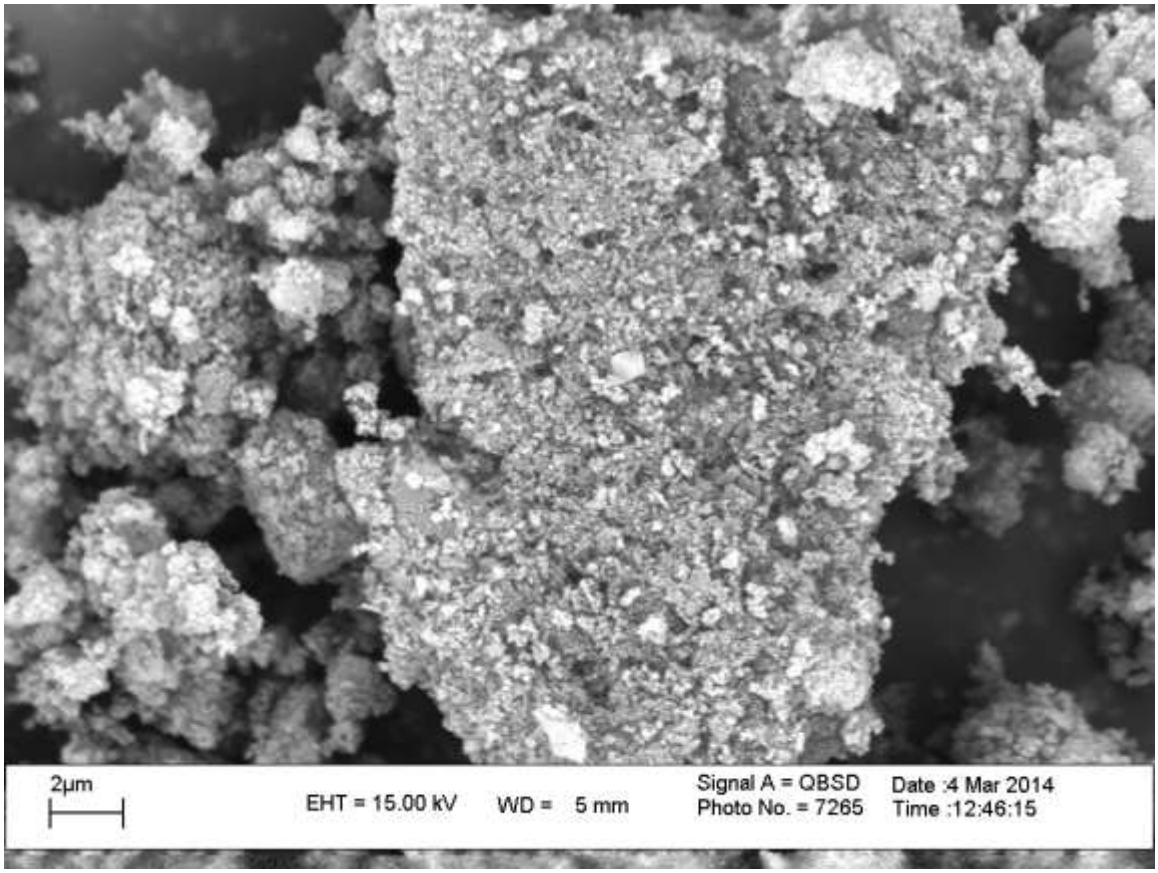
Time :12:43:55

a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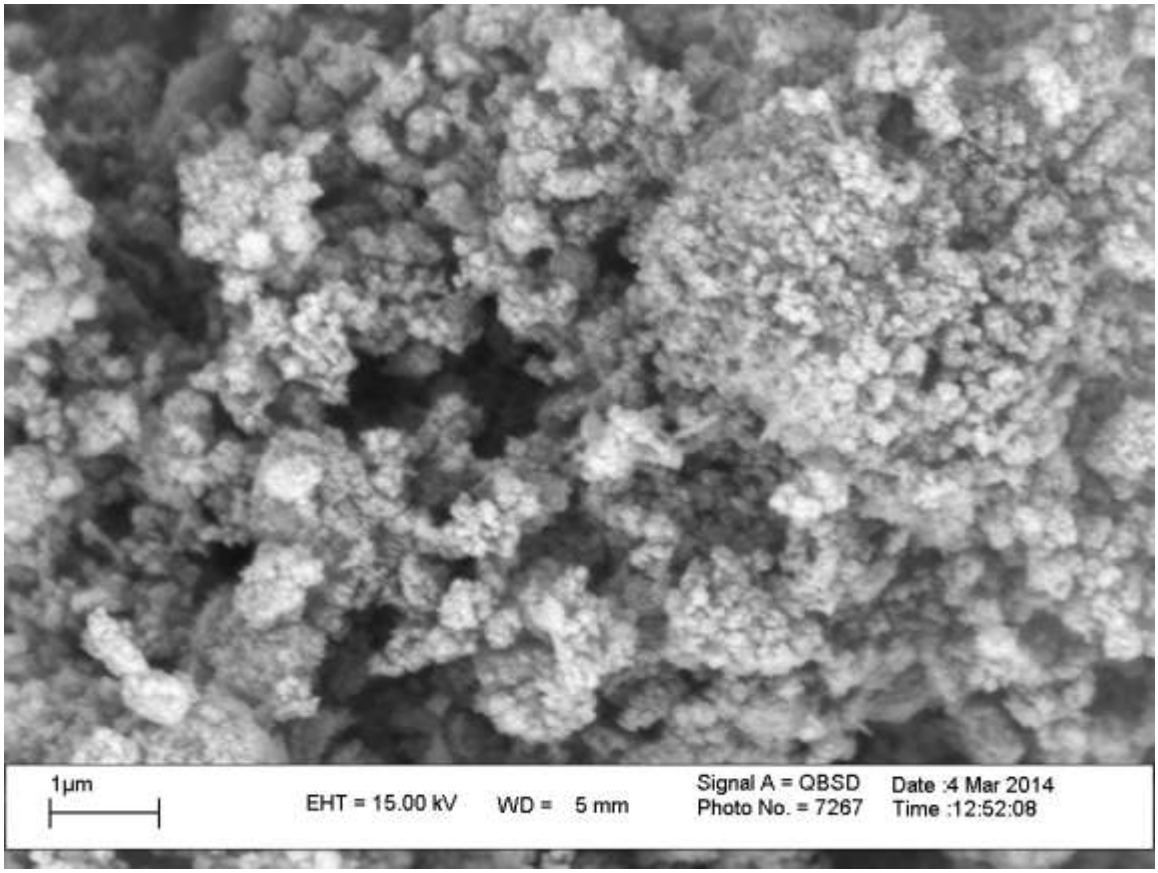
Time :12:46:15

b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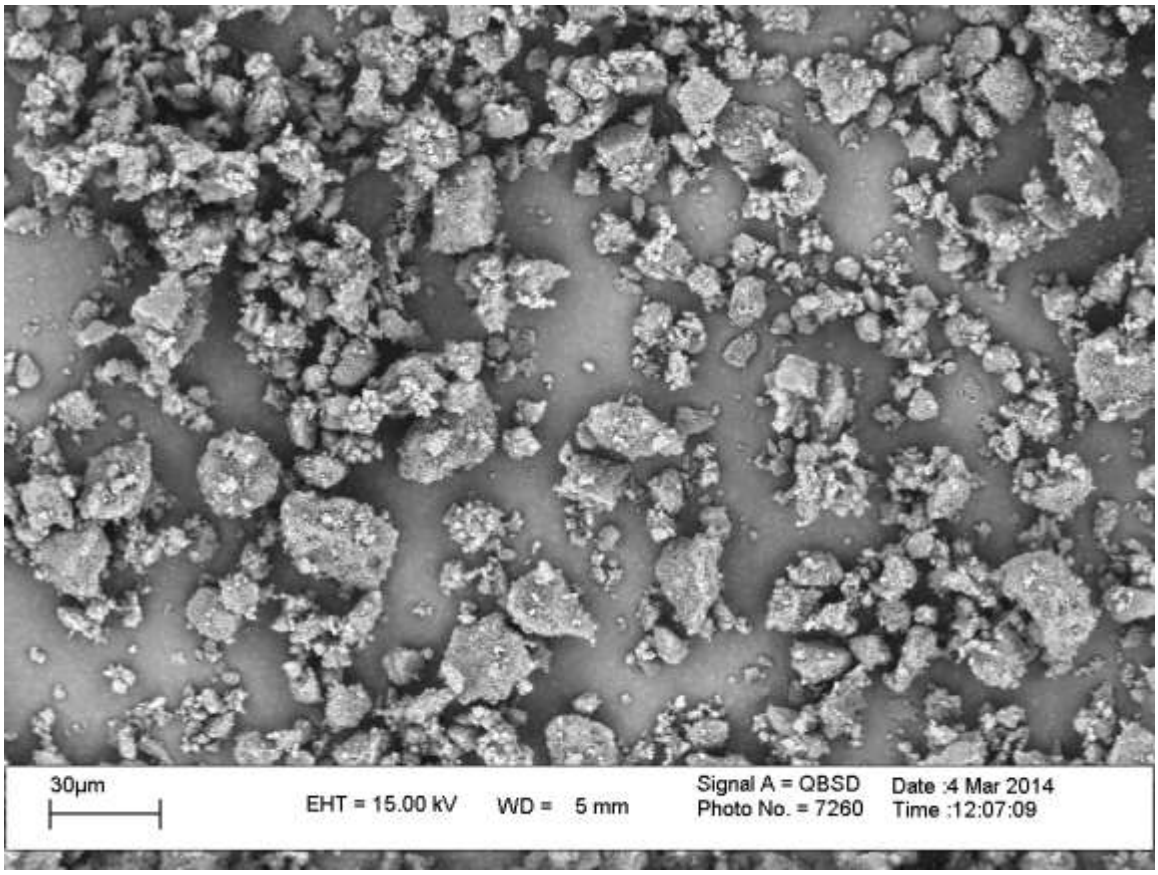
Time :12:52:08

c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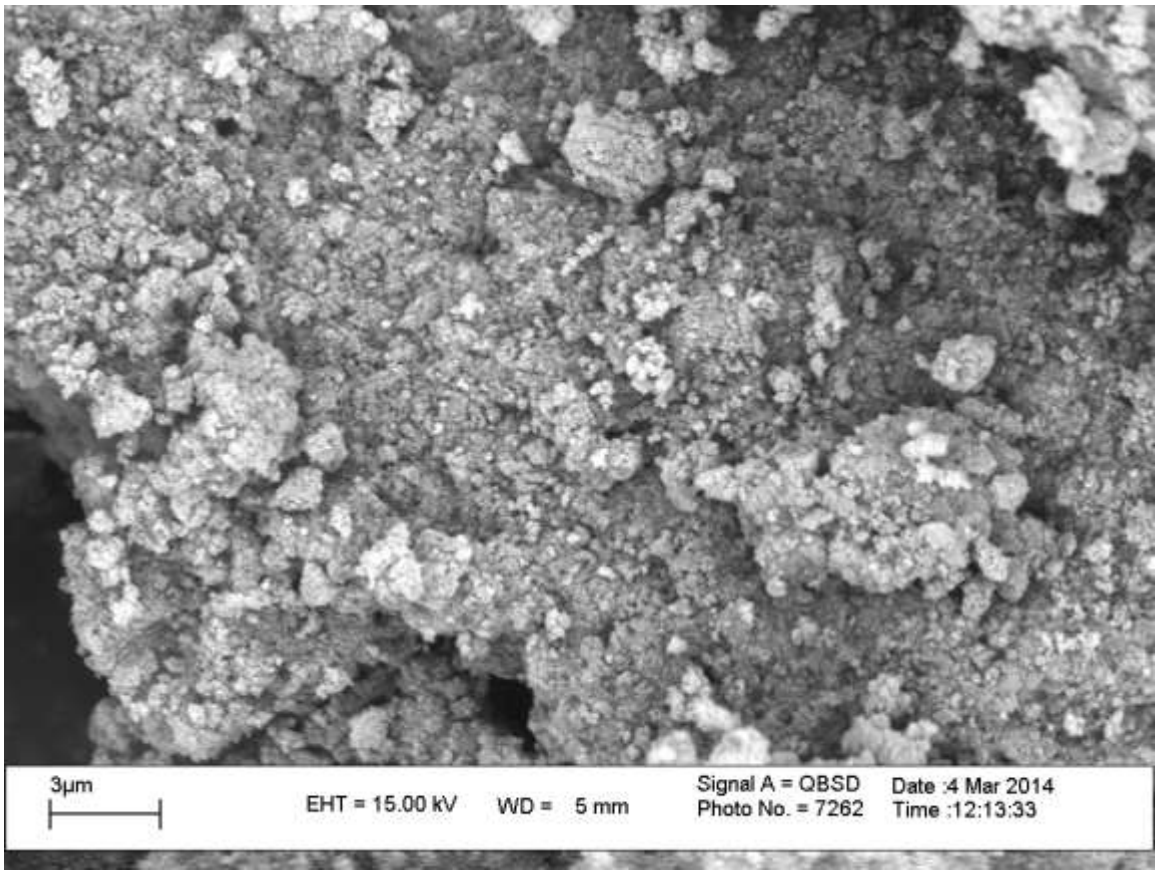
d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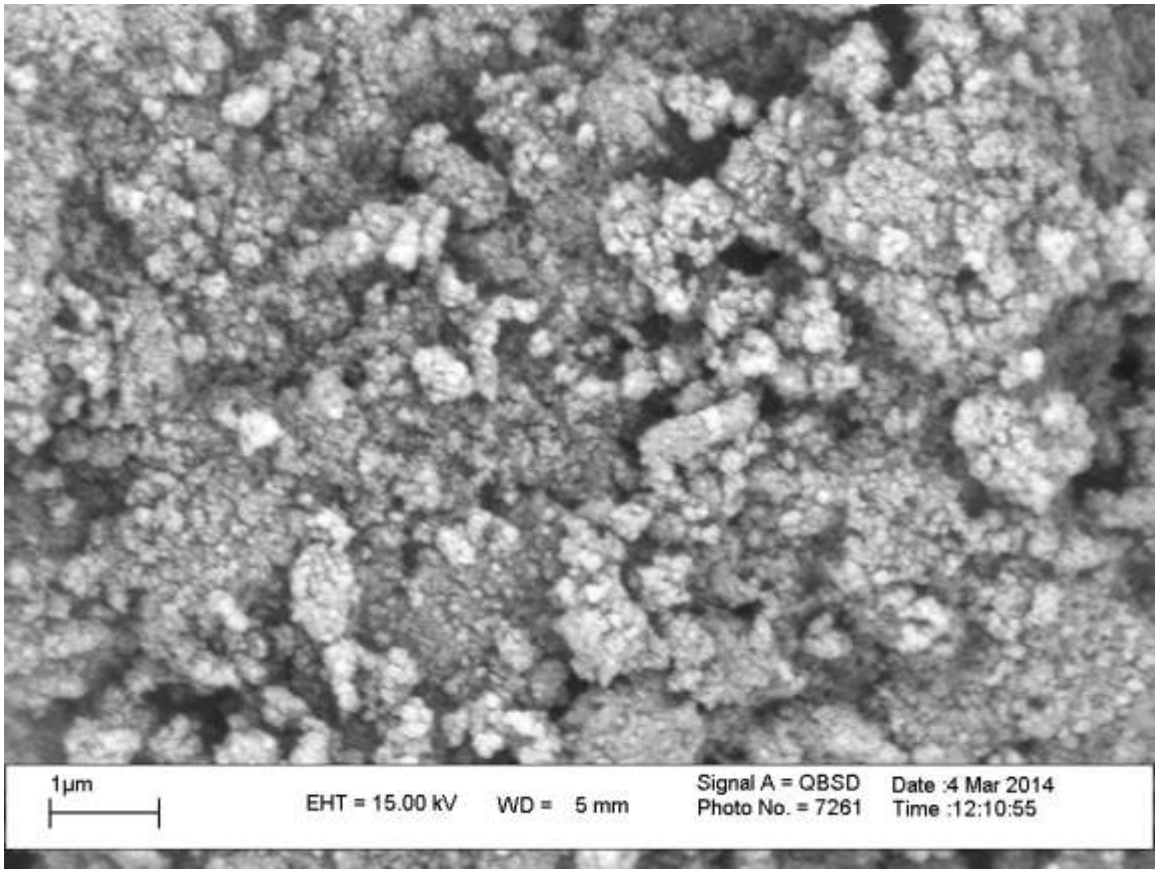
e


1µm
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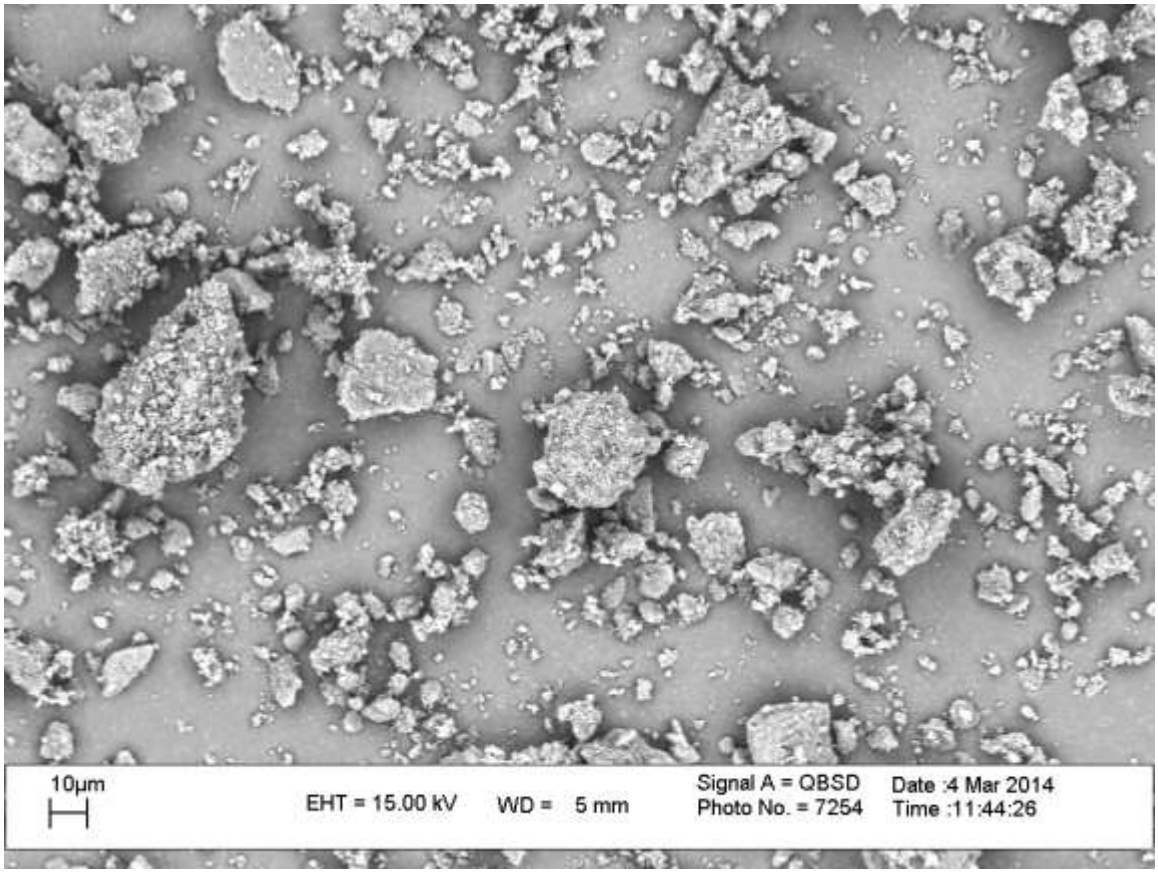
f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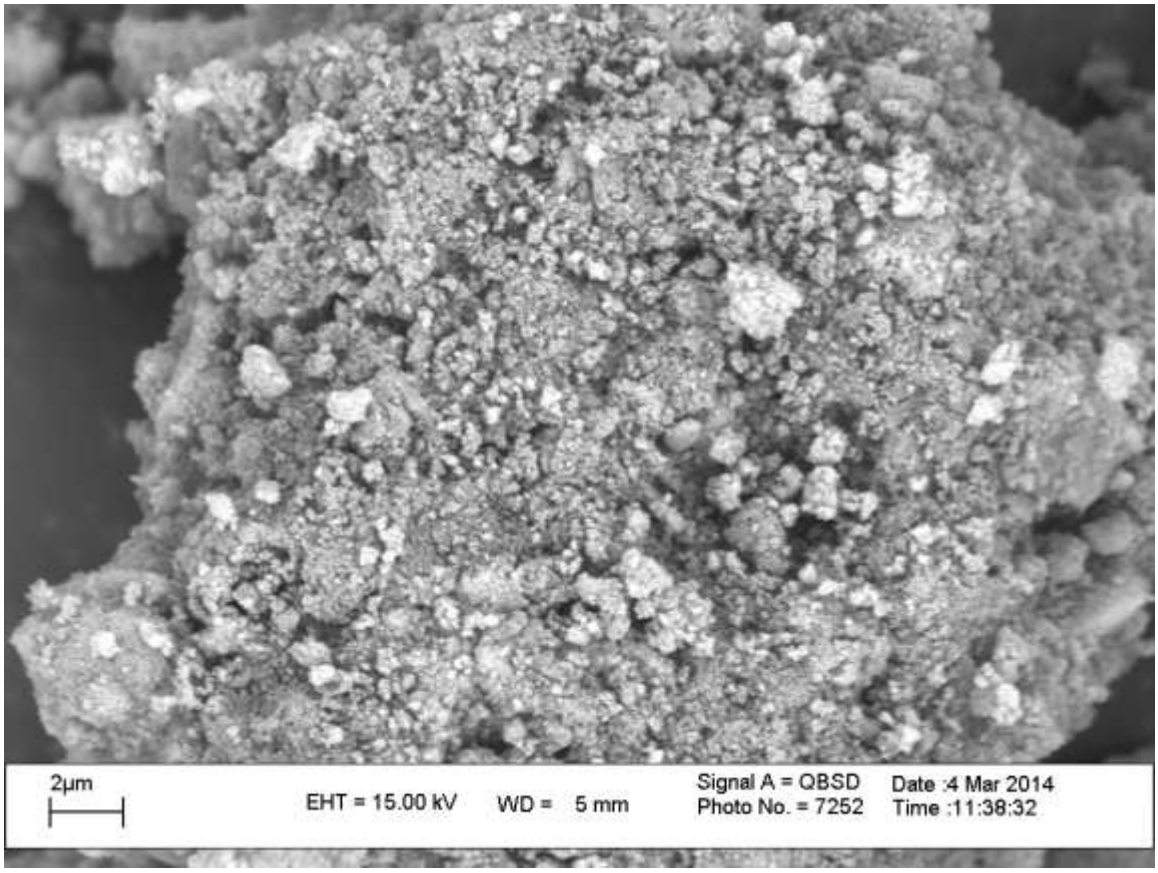
g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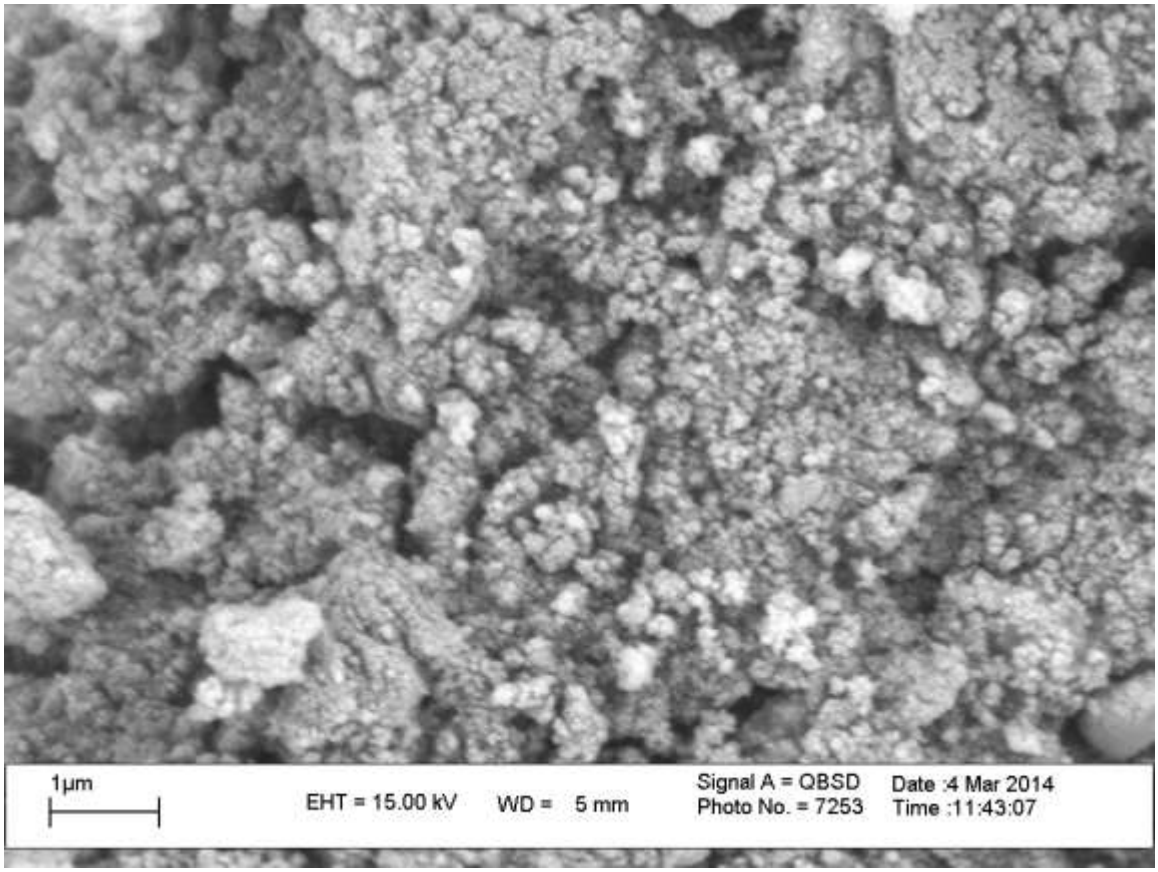
h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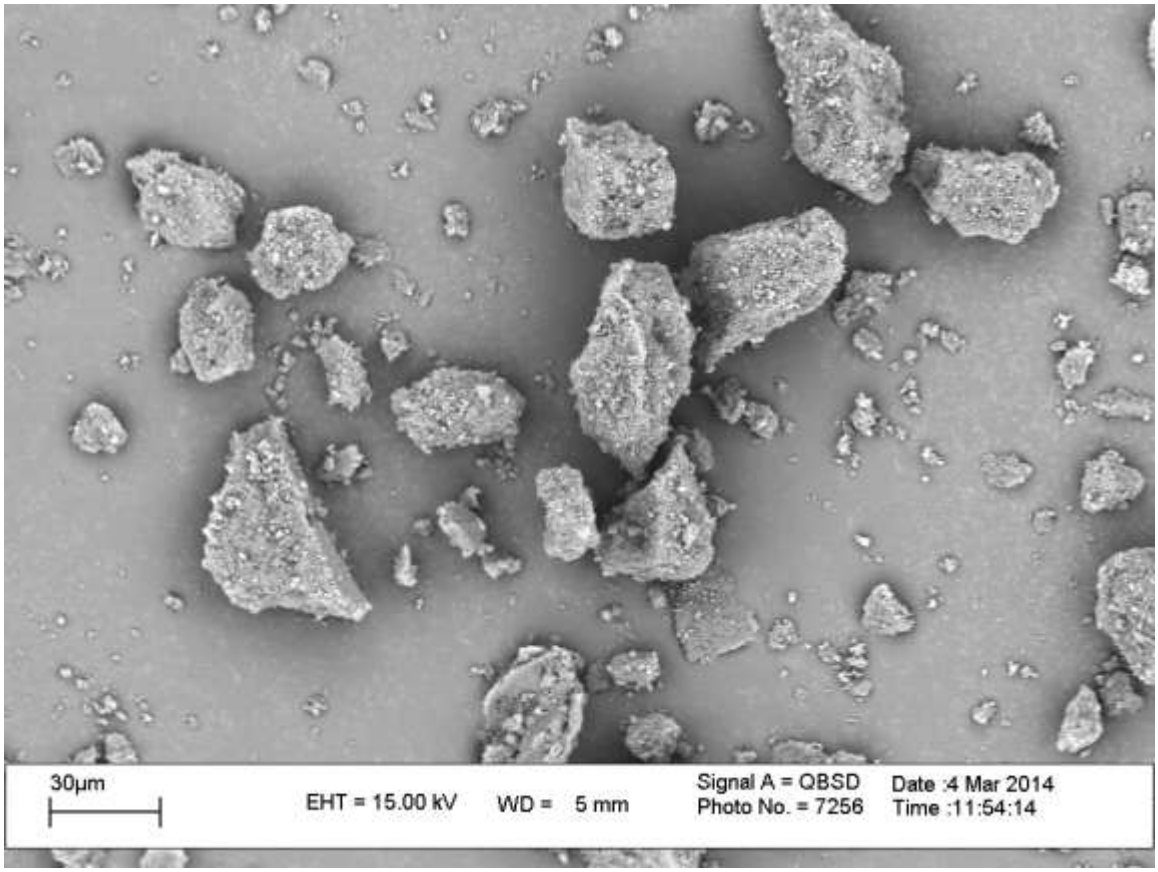
i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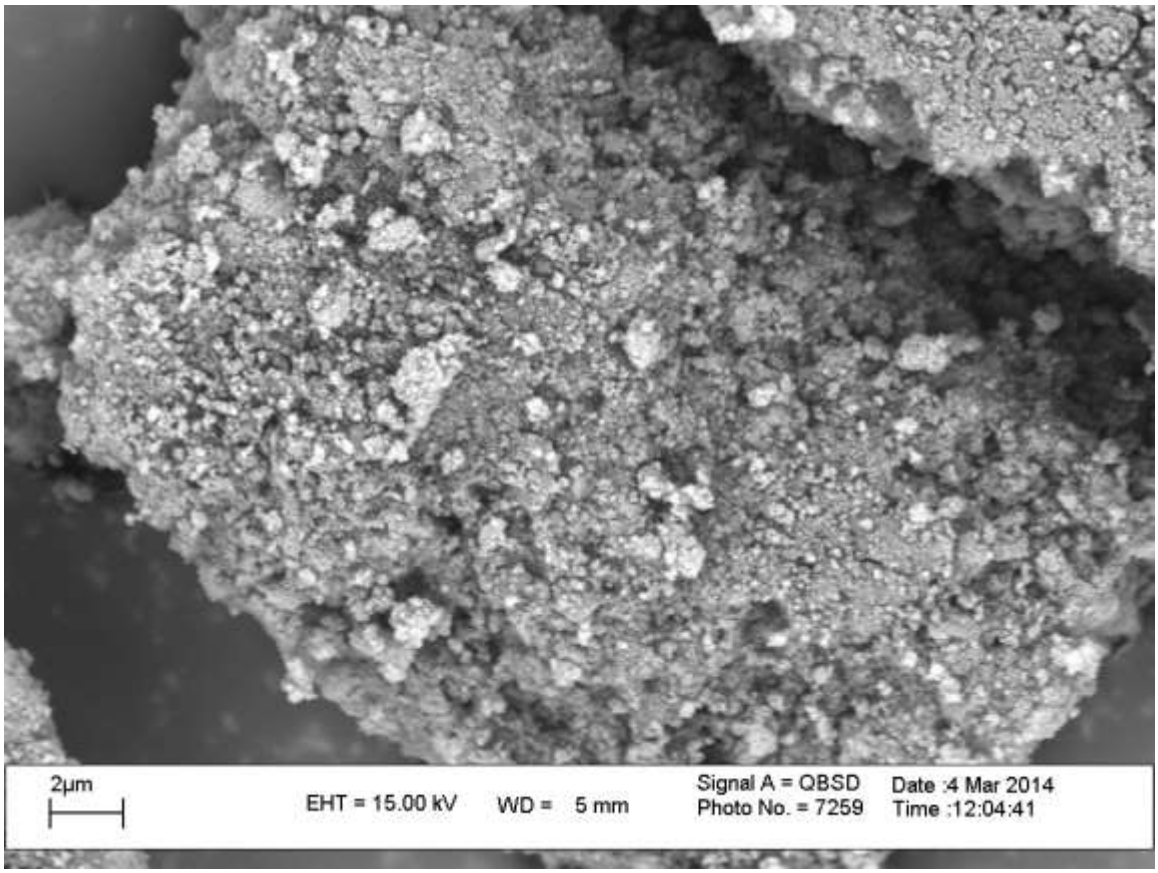
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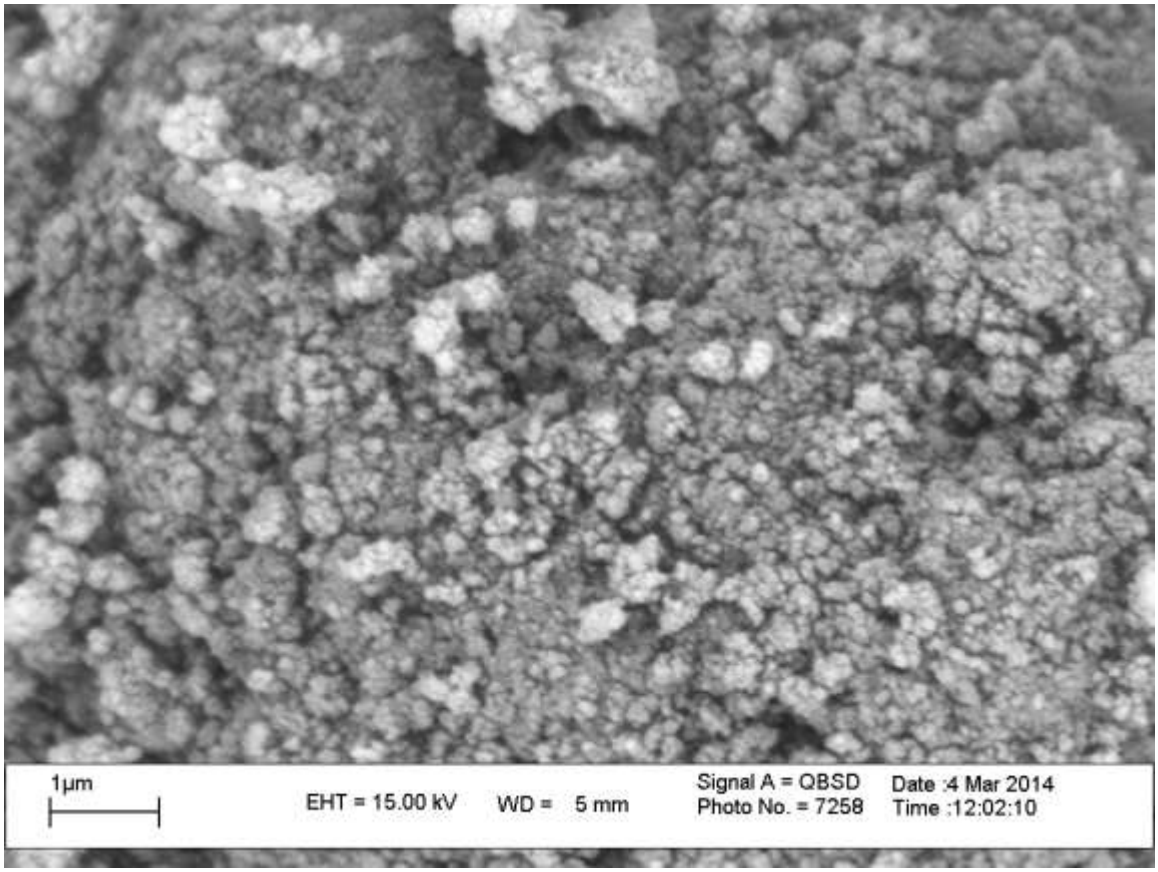

l

Fig. S3 SEM images of **1** (a-c), **2** (d-f), **3** (g-i) and **4** (j-l).

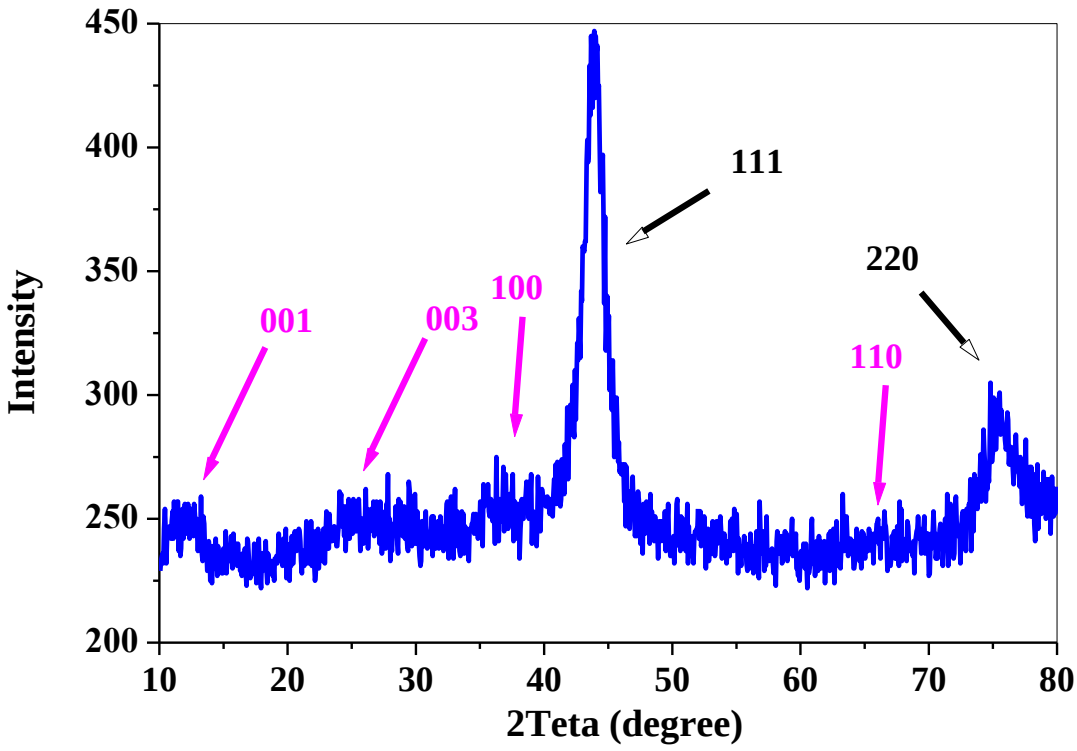

Fig. S4 XRD patterns from **2**. Black and magenta arrows show ND and layered Mn oxides phases.

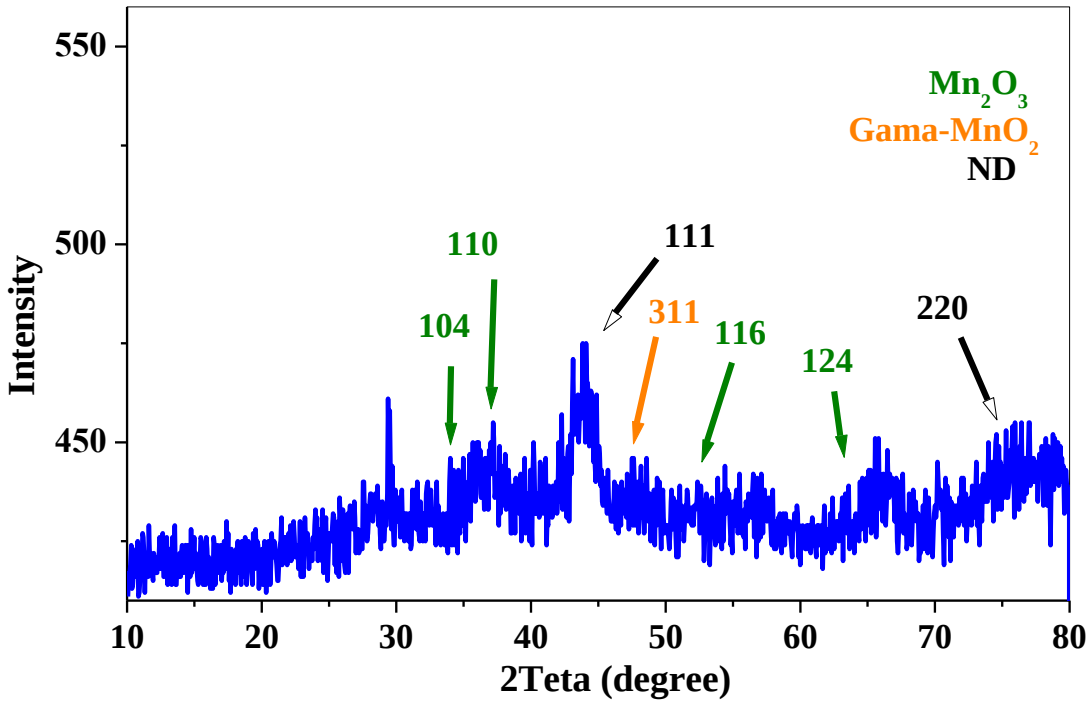

Fig. S5 XRD patterns from **3**.

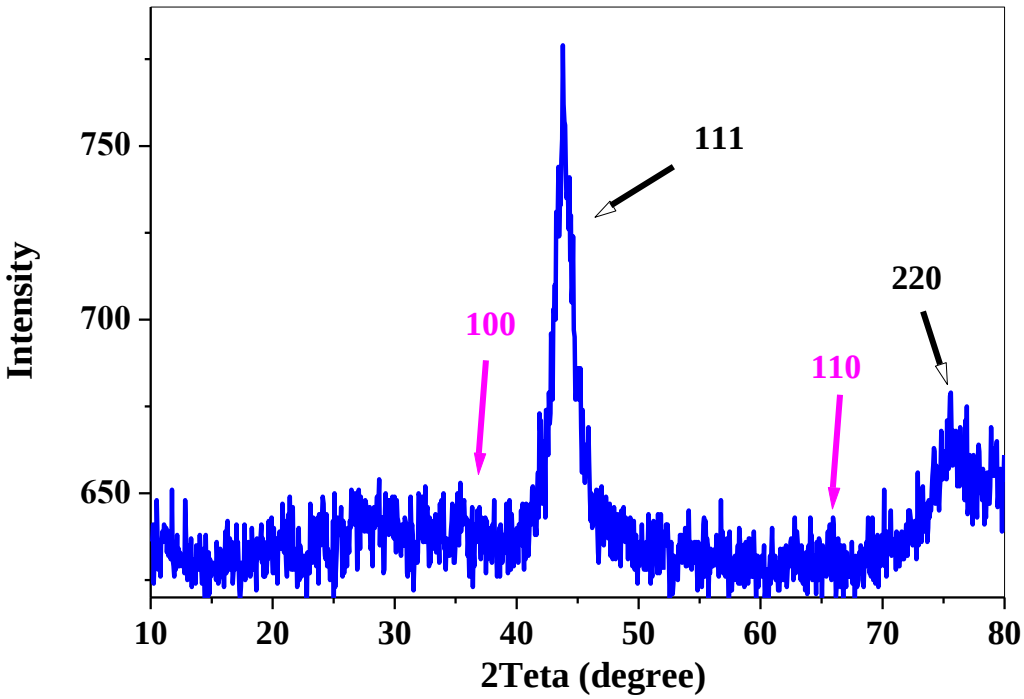

Fig. S6 XRD patterns from **4.** Black and magenta arrows show ND and layered Mn oxides phases.