

## Supporting Information

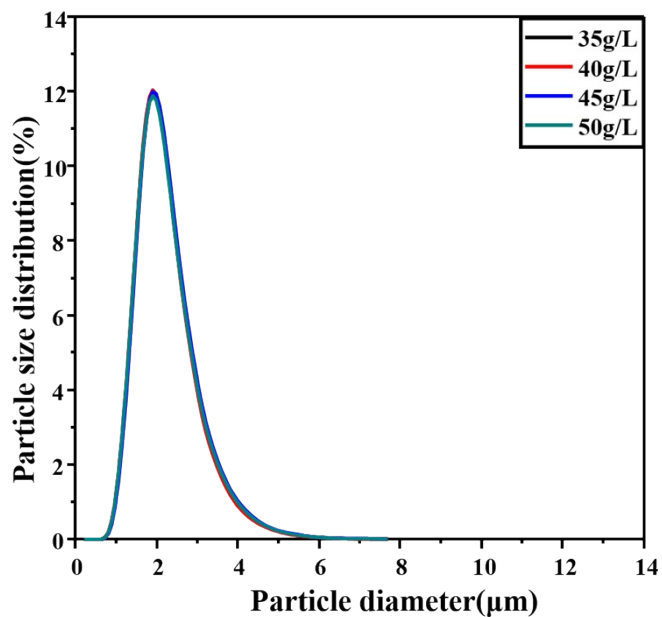
### Microwave-assisted seeds preparation for producing easily phase-transformed anatase to rutile

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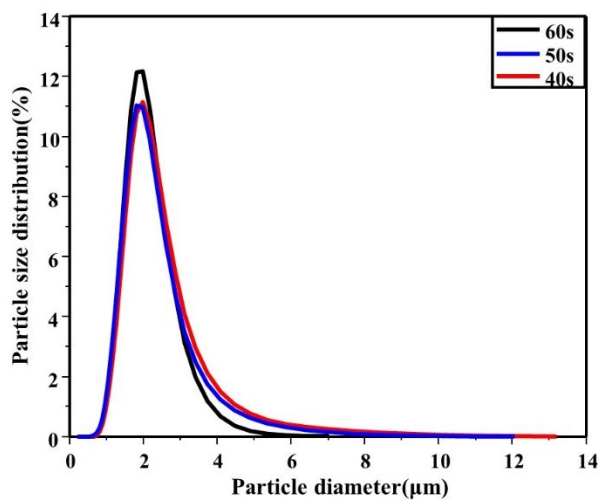
**STable 1. The variance for different particle size distribution**

No	STS concentration (g/L)	Mean diameter ( $\mu\text{m}$ )	Heating time (s)	Variance
1	35	1.846	70	0.241
2	40	1.837	80	0.239
3	45	1.857	90	0.241
4	50	1.842	100	0.245

The metatitanic acid particle size distribution was carried out under the microwave heating power was 800 w. The HTS concentration was 160 g/L, Fe/TiO<sub>2</sub> was 0.3 and the H<sub>2</sub>SO<sub>4</sub>/TiO<sub>2</sub> was 1.9.



**Figure 1.** The particle size distributions of the metatitanic acid by different seeds preparation concentration.



**Figure 2.** The particle size distributions of the metatitanic acid by different microwave heating time, and the hydrolization time was 3.5h.

**STable 2.** The particle size of different STS concentration seeds

<b>STS concentration (g/L)</b>	30	35	40	45	50
<b>Particle size (nm)</b>	2.1	2.1	3.0	3.2	3.5