

## Supporting Information

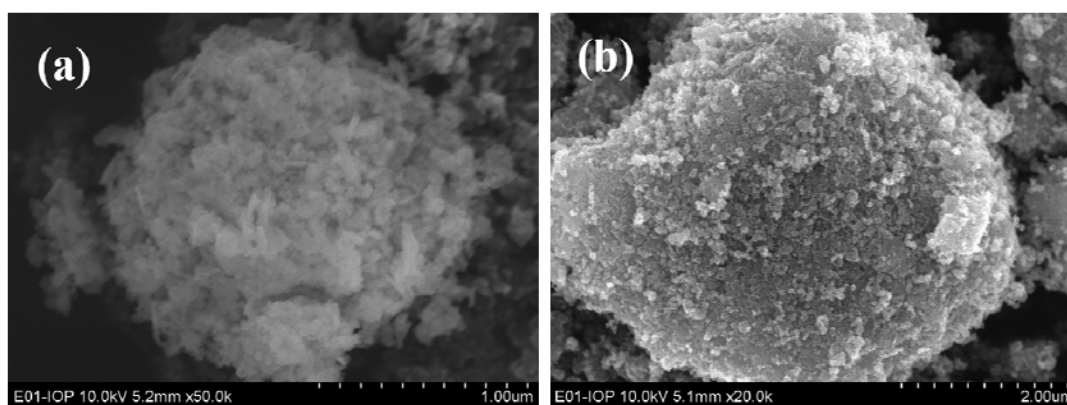
### Nano/micro structured porous $\text{Li}_4\text{Ti}_5\text{O}_{12}$ synthesized by polyethylene glycol assistant hydrothermal method for high rate lithium-ion batteries

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**Fig. S1.** SEM images of PLTO-1 (a) and PLTO-3 (b).

**Table 1.** Grain size of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  samples

Sample	PEG (g)	$S_{\text{BET}}$ ( $\text{m}^2 \text{g}^{-1}$ )	Vt ( $\text{cm}^3 \text{g}^{-1}$ )	Grain size (nm)	Capacity ( $\text{mA g}^{-1}$ )				
					1C	2C	5C	10C	20C
LTO	0	50.7	0.34	28.6	160	154	140	120	91
P-LTO-1	0.25	55.3	0.35	22.3	156	150	143	134	111
P-LTO-2	0.50	80.1	0.45	16.9	160	157	152	144	132
P-LTO-3	0.75	67.6	0.46	22.6	146	137	125	106	76

**Table 2.** Electrochemical performance of some typical  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ .

Synthesis method	Composition	Current (C)	Capacity (mAh/g)	Reference
Sol-gel, Solvothermal	$\text{Li}_4\text{Ti}_5\text{O}_{12}$ hollow microspheres assembled by nanoparticles	10	115.6	[1]
Solvothermal, $\text{N}_2$ treatment	carbon-coated $\text{Li}_4\text{Ti}_5\text{O}_{12}$ mesoporous nanoparticles	10	137	[2]
electrospinning	1D $\text{Li}_4\text{Ti}_5\text{O}_{12}$ nanofibers	10	138	[3]
spray drying, solid-state calcination	nano-micron sized $\text{Li}_4\text{Ti}_5\text{O}_{12}$	20	111.9	[4]
Solvothermal, annealing	micro/nanoscale $\text{Cu}/\text{Li}_4\text{Ti}_5\text{O}_{12}$	20	122.9	[5]
aerosol deposition	$\text{Li}_4\text{Ti}_5\text{O}_{12}$ thin film	20	125	[6]
sol/gel and hydrothermal	nanoflower-like $\text{Li}_4\text{Ti}_5\text{O}_{12}$	20	126	[7]
carbon pre-coating, ball milling	nitrogen-doped carbon coated $\text{Li}_4\text{Ti}_5\text{O}_{12}$	20	128.2	[8]
PEG-assistant hydrothermal, annealing	Nano/micro structured porous $\text{Li}_4\text{Ti}_5\text{O}_{12}$ (PLTO-2)	10 20	144 132	Present

**References:**

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