

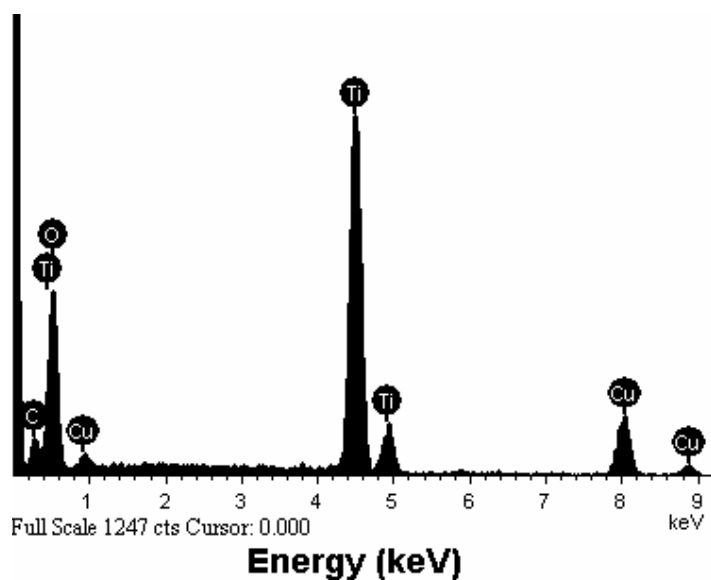
Supporting Information

**Hydrothermal Treatment of the Colloids Induced via
Liquid-Phase Laser Ablation: A New Approach for Hierarchical
Titanate Nanostructures with Enhanced Photodegradation
Performance**

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Elements	Peak Area	Area Sigma	k Factor	Abs correction	Weight %	Weight % Sigma	Atom %
O K	3204	135	1.547	1.000	31.35	0.96	57.76
Ti K	12102	187	0.897	1.000	68.65	0.96	42.24
Totals					100.00		

Fig. S1 EDX spectrum of Titania species and the Table of corresponding Elements analysis.

From EDX analysis, there are only Ti and O signals except the Cu and C signals which originate from the carbon-coated copper grid. From the Table of elemental microscopic analysis, the molar ratio of Ti/O is around **2:1**. So, the amorphous species can be described as TiO_2 .

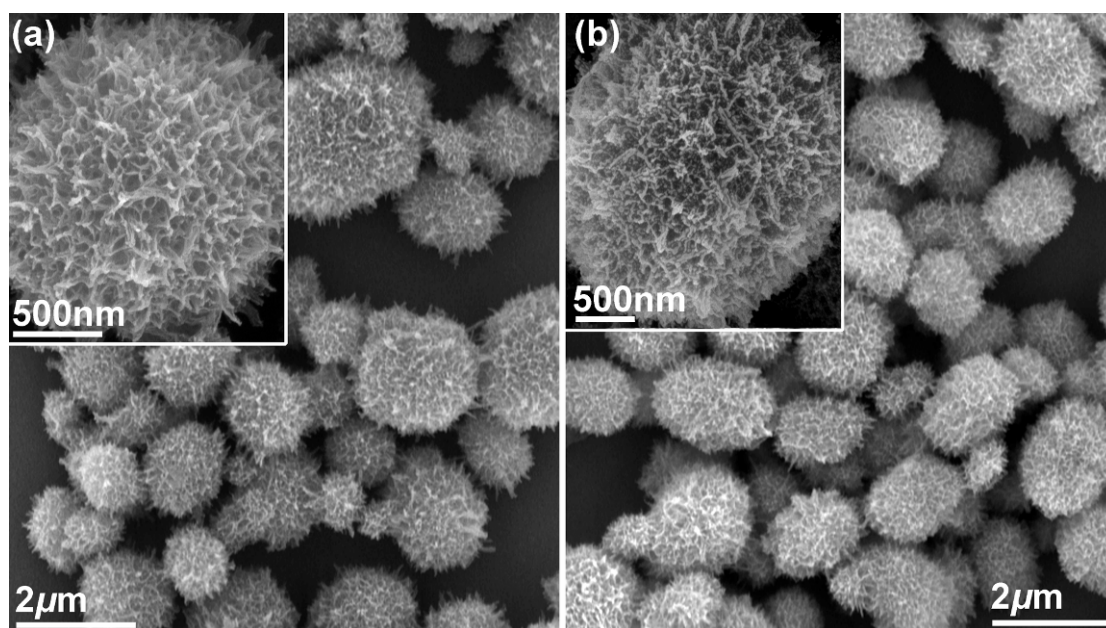


Fig. S2 FE-SEM images of hierarchical spheres by hydrothermal treating of LAL-induced colloidal solutions using rotated Ti target with different duration time. (a) 72 h, (b) 96 h.

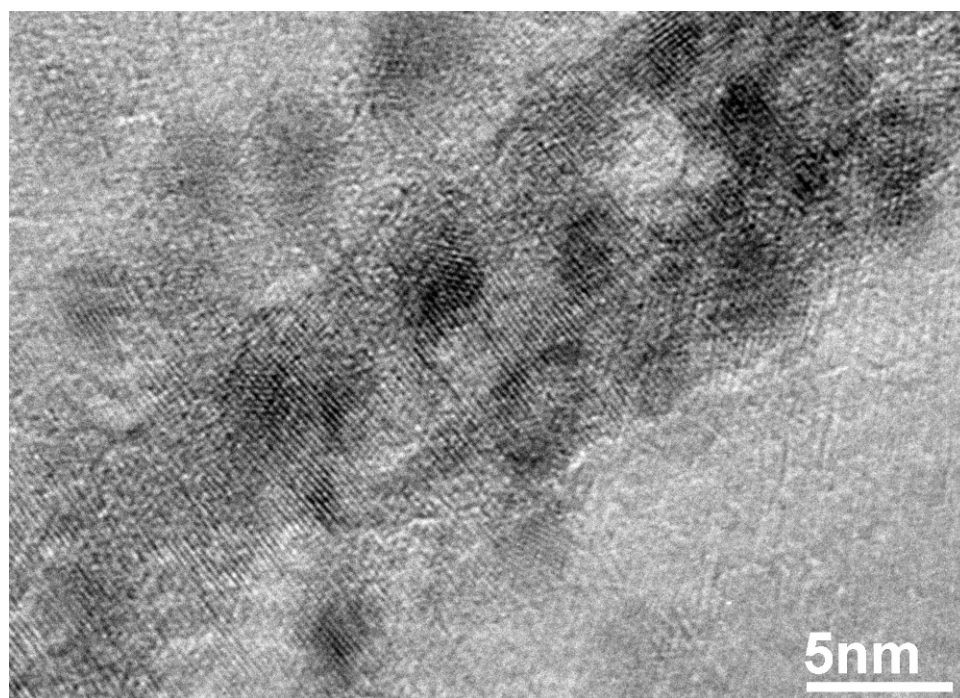


Fig. S3 HRTEM image of stripe-like structure with nanoparticles oriented attachment.

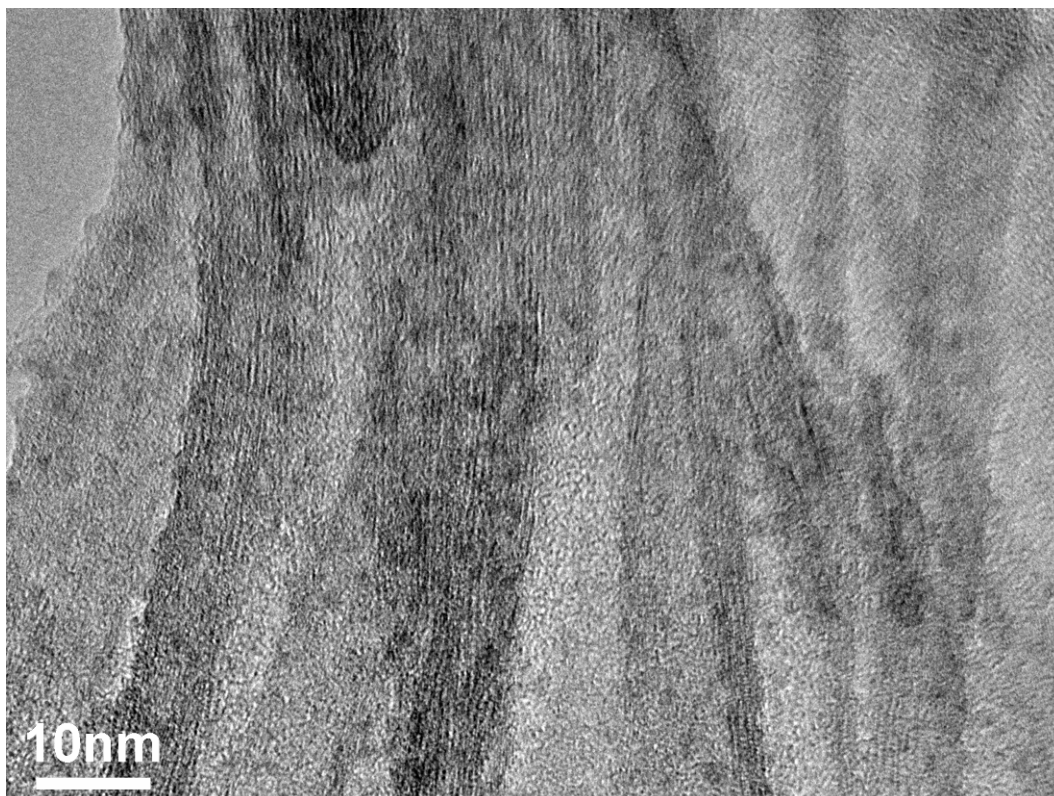


Fig. S4 HRTEM image of several nanostripes attached from each other.

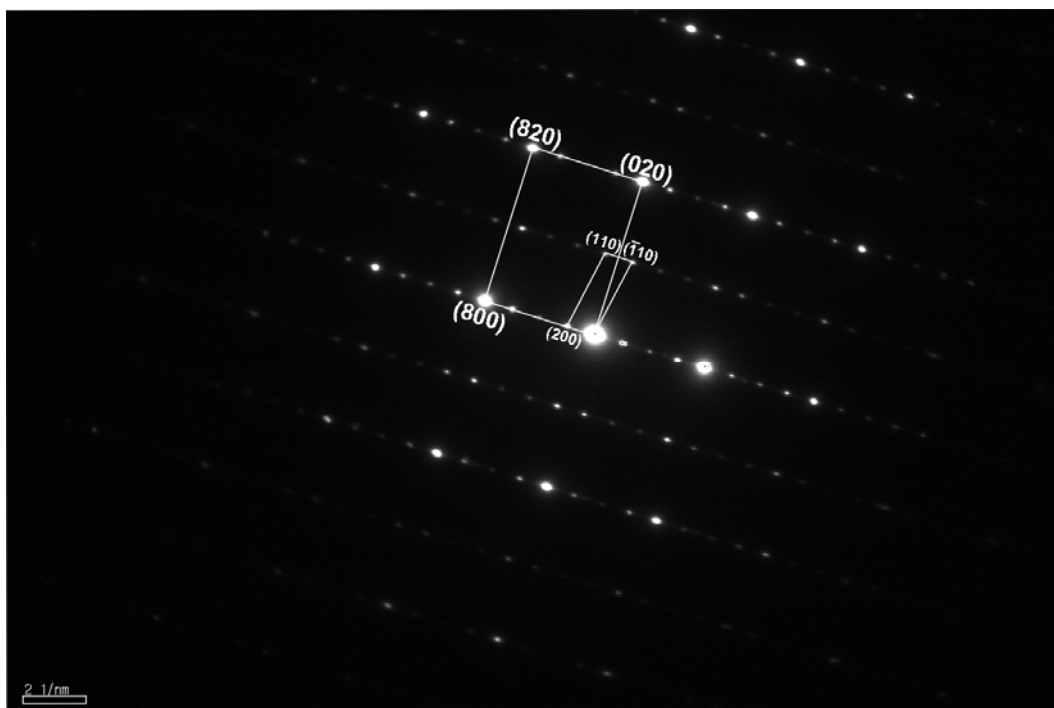


Fig. S5 SAED analysis of corresponding sample in Fig.5h.

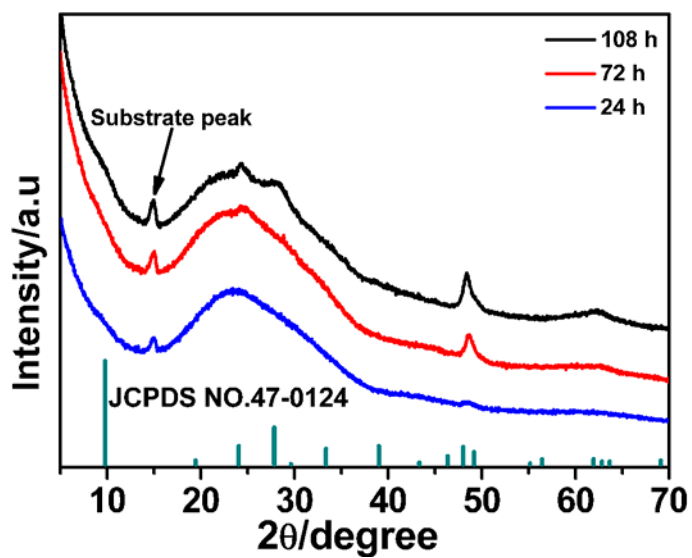


Fig. S6 XRD patterns for titanate structures with different hydrothermal duration time using the fixed target.

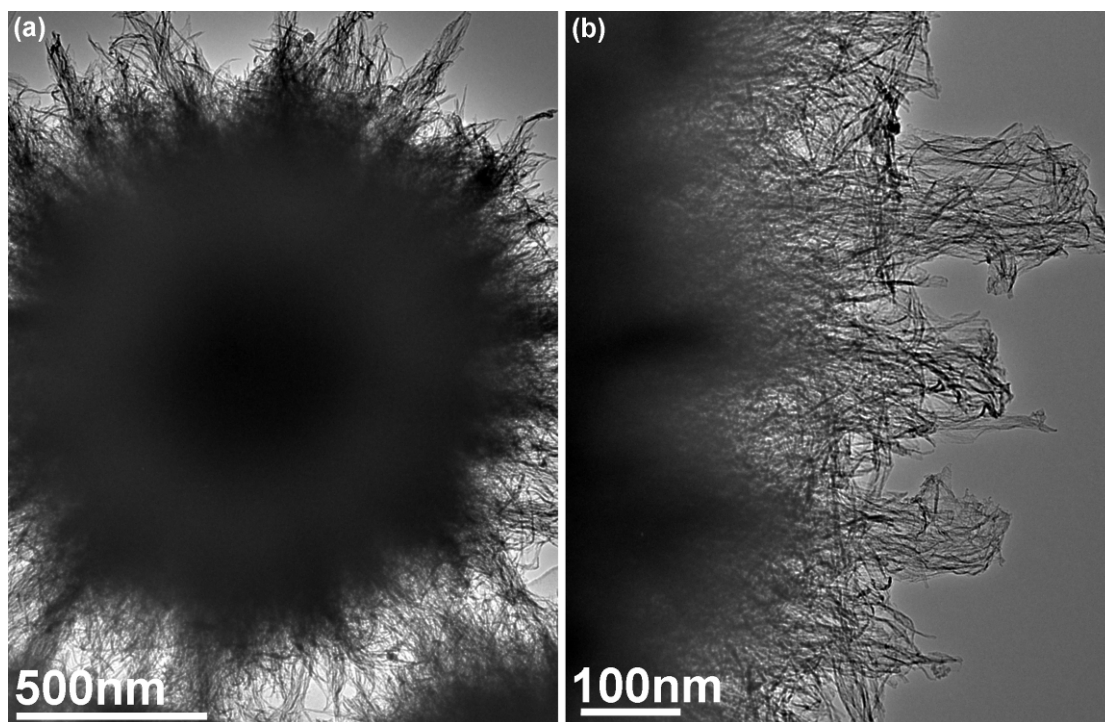


Fig. S7 TEM images of hierarchical spheres synthesized by rotating Ti target for 48 h hydrothermal time.

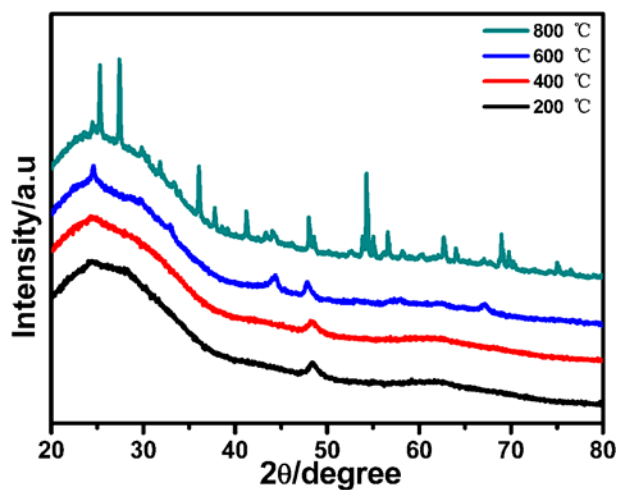


Fig. S8 XRD patterns for different annealing temperature using the rotated target at duration time of 48 h.

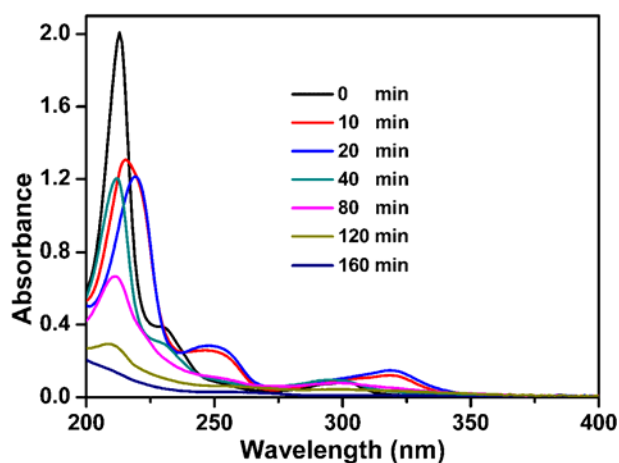


Figure. S9 UV-vis absorption spectra depicting photocatalytic degradation of PCP by calcined titanate spheres.

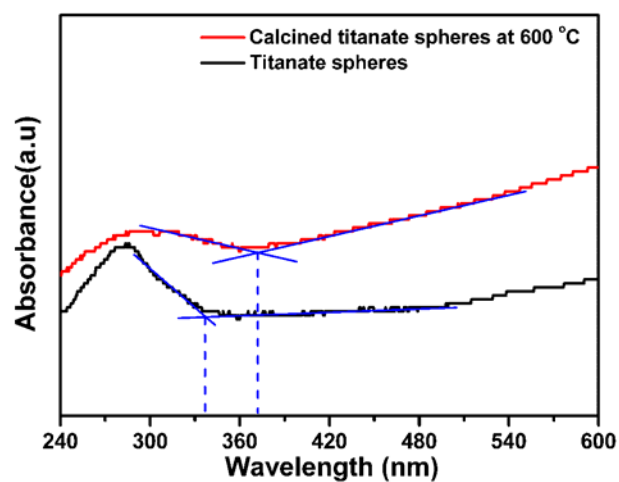


Fig. S10 UV-vis absorption spectra of titanate spheres and calcined titanate spheres at 600 °C.