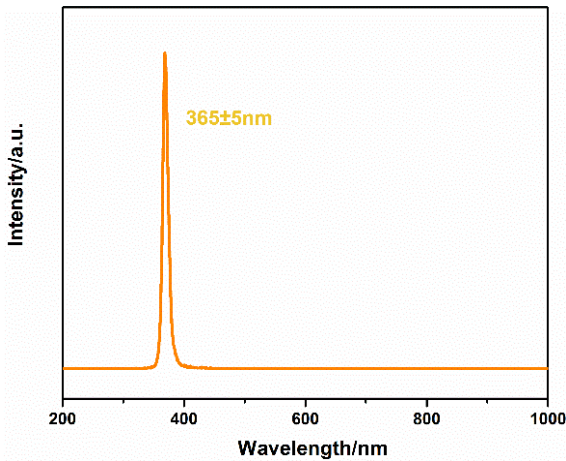


**Supporting information**

**Should the tubular photocatalytic reactors work continuously or in  
an intermittent manner instead?**

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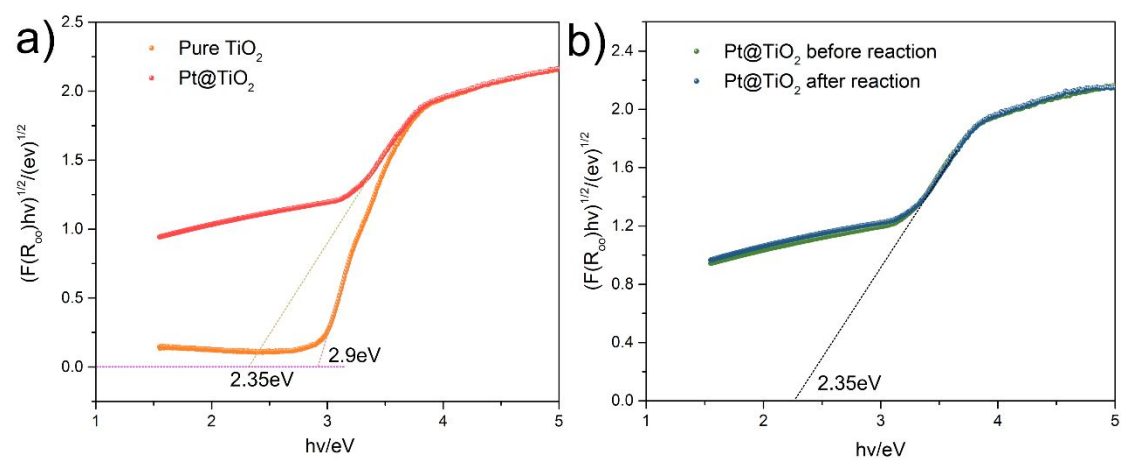
**Fig.S1** The irradiation characteristic of LED light source.

**Table.S1** The main parameters of photocatalytic reactor.

Diameter of glass window (mm)	12
Inner diameter of reaction cavity (mm)	10
High of reaction cavity (mm)	20
Diameter of liquid inlet tube (mm)	1
Diameter of liquid outlet tube (mm)	1
Inner diameter of outer circulated tube (mm)	3
Volume of reaction cavity (mL)	1.57

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Flow mechanism intermittent  
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**Fig.S2** a) Band gaps of pure TiO<sub>2</sub> and Pt@TiO<sub>2</sub> calculated by Kubelka-Munk (K-M) equation; b) Band gaps of Pt@TiO<sub>2</sub> before and after reaction.