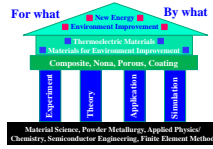


# Study on nano-structured K-TiO<sub>2</sub> by molten salt treatment

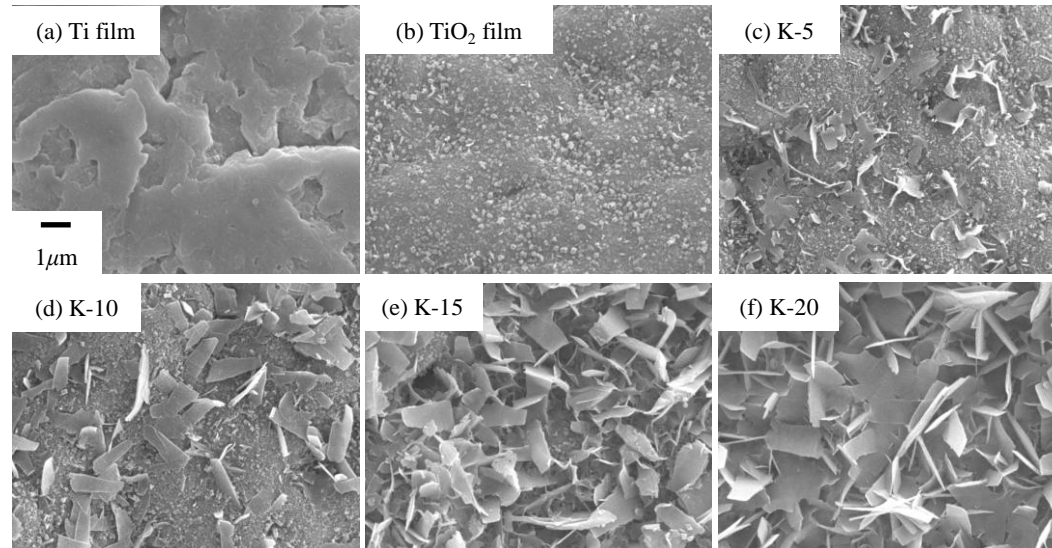
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**Aim:** to study the influence of potassium (K) by molten salt (MS) treatment

## Experiment:

1. MS: KNO<sub>3</sub> added 5 wt% of K<sub>2</sub>CO<sub>3</sub>
2. MS condition: 773 K for **x** min (**x**: 5, 10, 15, 20) and 20 h
3. Oxidation condition: 973 K for 20 h

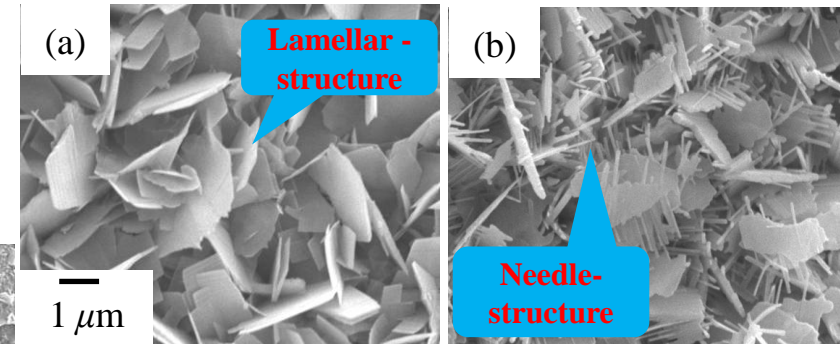


Surface structure

MS time ↑ → K ↑

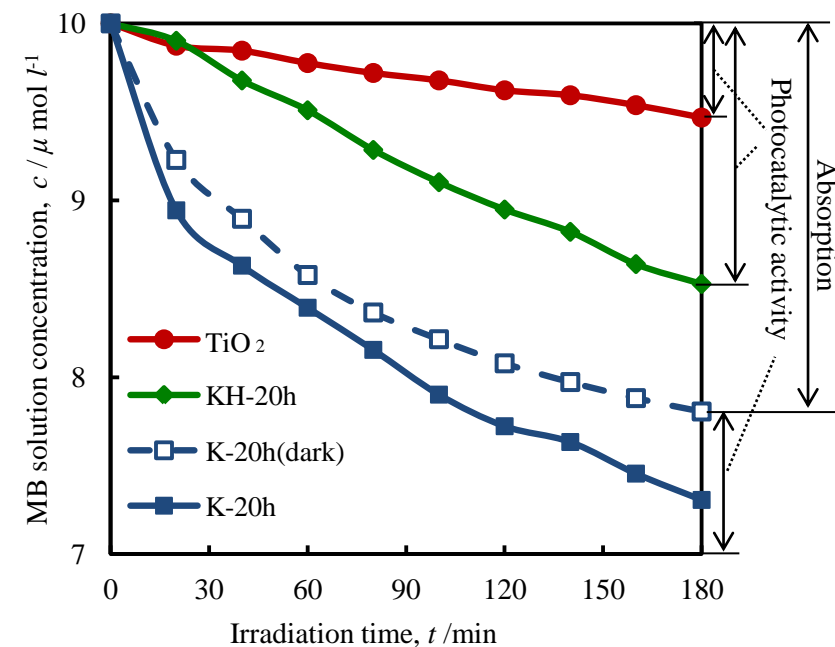
Oxidation ↑ → K ↑

Element (at. %)	Potassium (K)	
	Before oxidation	After oxidation
TiO <sub>2</sub>	0	0
K-5	0.12	-
K-10	0.5	-
K-15	0.7	-
K-20	1.2	-
K-20h	3.4	12.7



Nano-structured photocatalyst

(a) MS for 20 h, (b) Oxidation for K-20h



Photocatalytic activity and absorption of samples

**Performance (absorption + activity):**

1. MS treatment could increased the **absorption**, K-20h;
2. MS treatment could increased the **activity**, KH-20h