Title: Effect of transition metal dopants (M= Nb, La, Zr, and Y) on the M-TiO_2 supported V_2O_5 catalysts in the selective oxidation of H_2S to elemental sulfur

Authors: Suvijak Phatyenchuen, Boontida Pongthawornsakun, Joongjai Panpranot, Piyasan Praserthdam

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Effect of transition metal dopants (M= Nb, La, Zr, and Y) on the M-TiO_2 supported V_2O_5 catalysts in the selective oxidation of H_2S to elemental sulfur

Suvijak Phatyenchuen, Boontida Pongthawornsakun, Joongjai Panpranot, Piyasan Praserthdam

Center of Excellence on Catalysis and Catalytic Reaction, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, 10330, Thailand

* To whom correspondence should be addressed.
Tel. 66-2218-6861 Fax. 66-2218-6877 E-mail: piyasan.p@chula.ac.th (P. Praserthdam)

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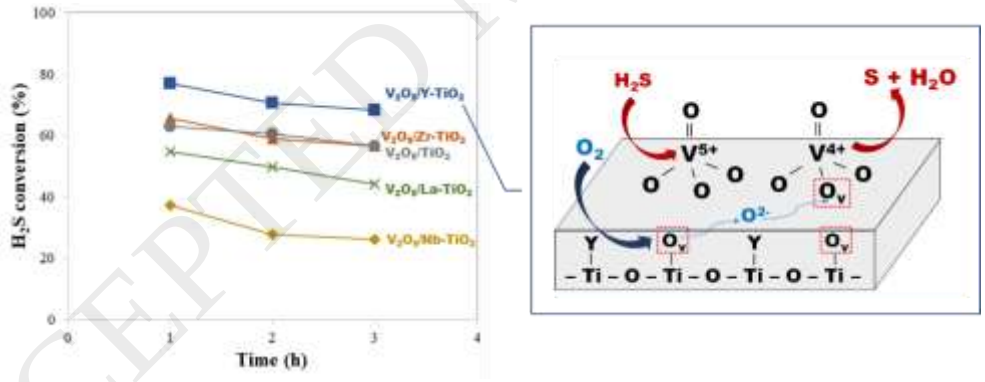
Graphical abstract



Highlights:

- Low temperature selective H_2S oxidation on modified-TiO_2 supported V_2O_5.
- P-25 TiO_2 was modified by addition of different dopants (Nb, La, Zr, and Y).
- V_2O_5/Y-TiO_2 showed highest H_2S conversion at ~77% with low SO_2 formation.
- Y addition promoted more surface oxygen formation than that of Zr.
- Nb or La addition suppressed surface oxygen being formed.