



Showcasing research from a group of researchers led by Dr. Ji-Soo Jang from Korea Institute of Science and Technology (KIST), Dr. Donghwi Cho and Dr. Jeong-O Lee from Korea Research Institute of Chemical Technology (KRICT), Prof. Seokwoo Jeon from Korea University.

Atomically mixed catalysts on a 3D thin-shell  $\text{TiO}_2$  for dual-modal chemical detection and neutralization

This work reports the rational design of ultra-small ( $< 5 \text{ nm}$ ) polyelemental nanocatalysts on a 3D  $\text{TiO}_2$  nanostructure by an ultrafast flash lamp-driven photothermal shock, enabling instant reduction of surface decorated, metal ionic precursors into the atomically mixed heterostructure. The exceptional photocatalytic effect of the material system demonstrates dual-modal chemical detection and neutralization of environmental pollutants.

### As featured in:



See Jeong-O. Lee, Seokwoo Jeon, Donghwi Cho, Ji-Soo Jang *et al.*, *J. Mater. Chem. A*, 2023, **11**, 18195.