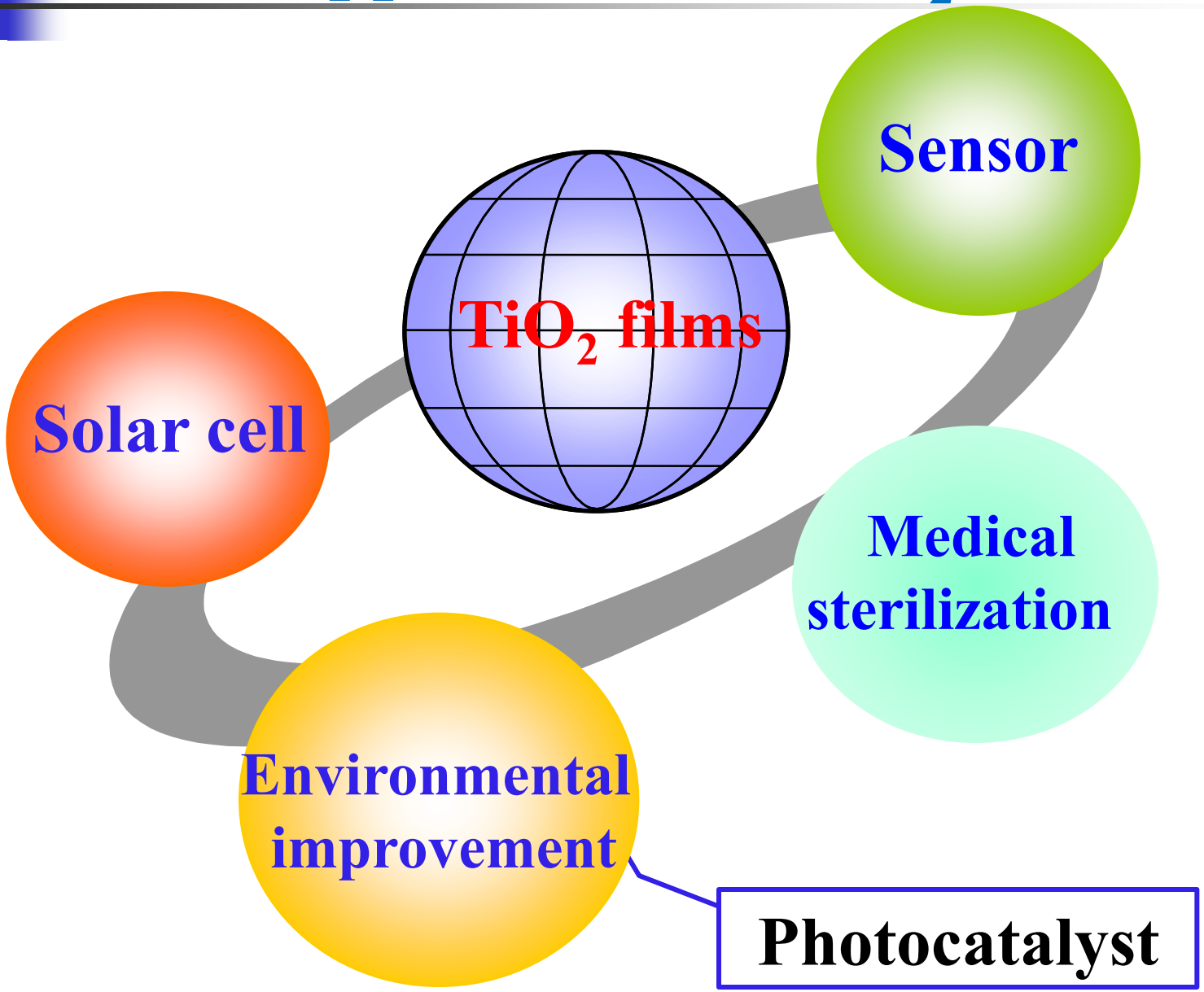
Some applications of TiO_2 films



Industrial products of TiO_2 films

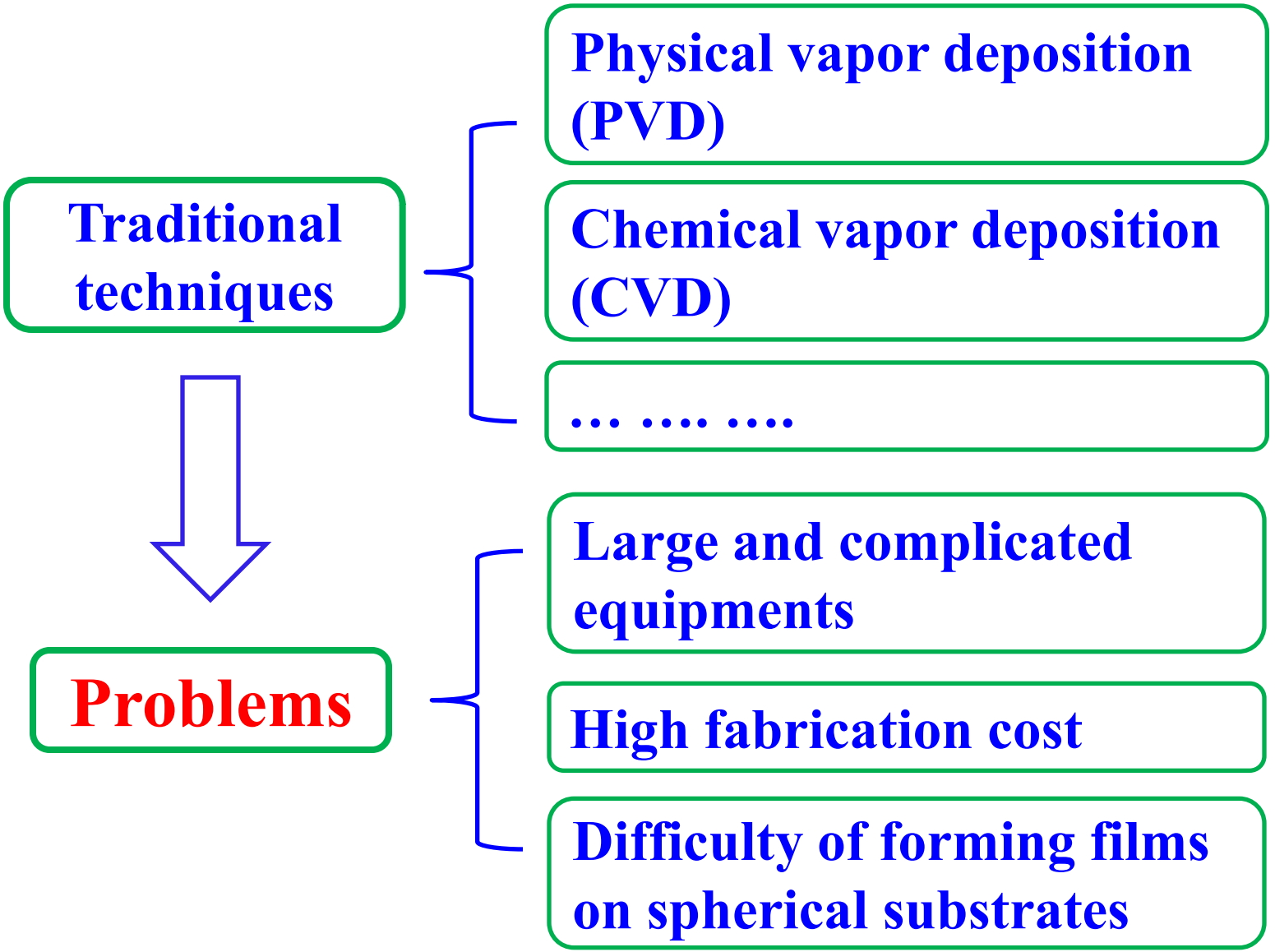
(a) anti-fog mirror

(b) water purification

(c) self-cleaning materials

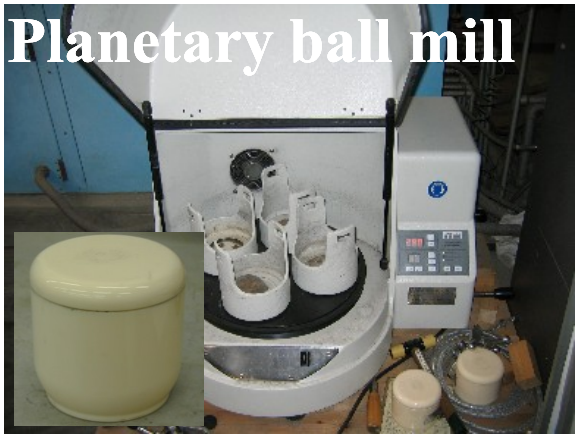
(d) air purification

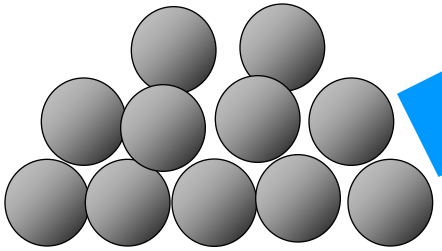
Traditional film fabrication techniques



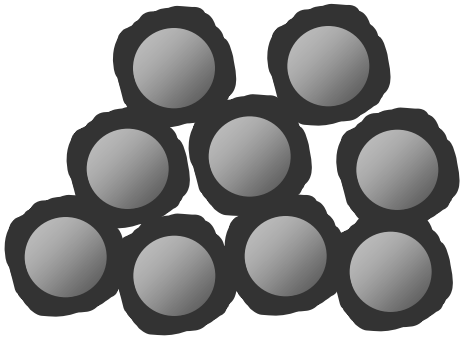
Mechanical Coating Technique (MCT)

Ti powder





Al_2O_3 balls
(Substrate)

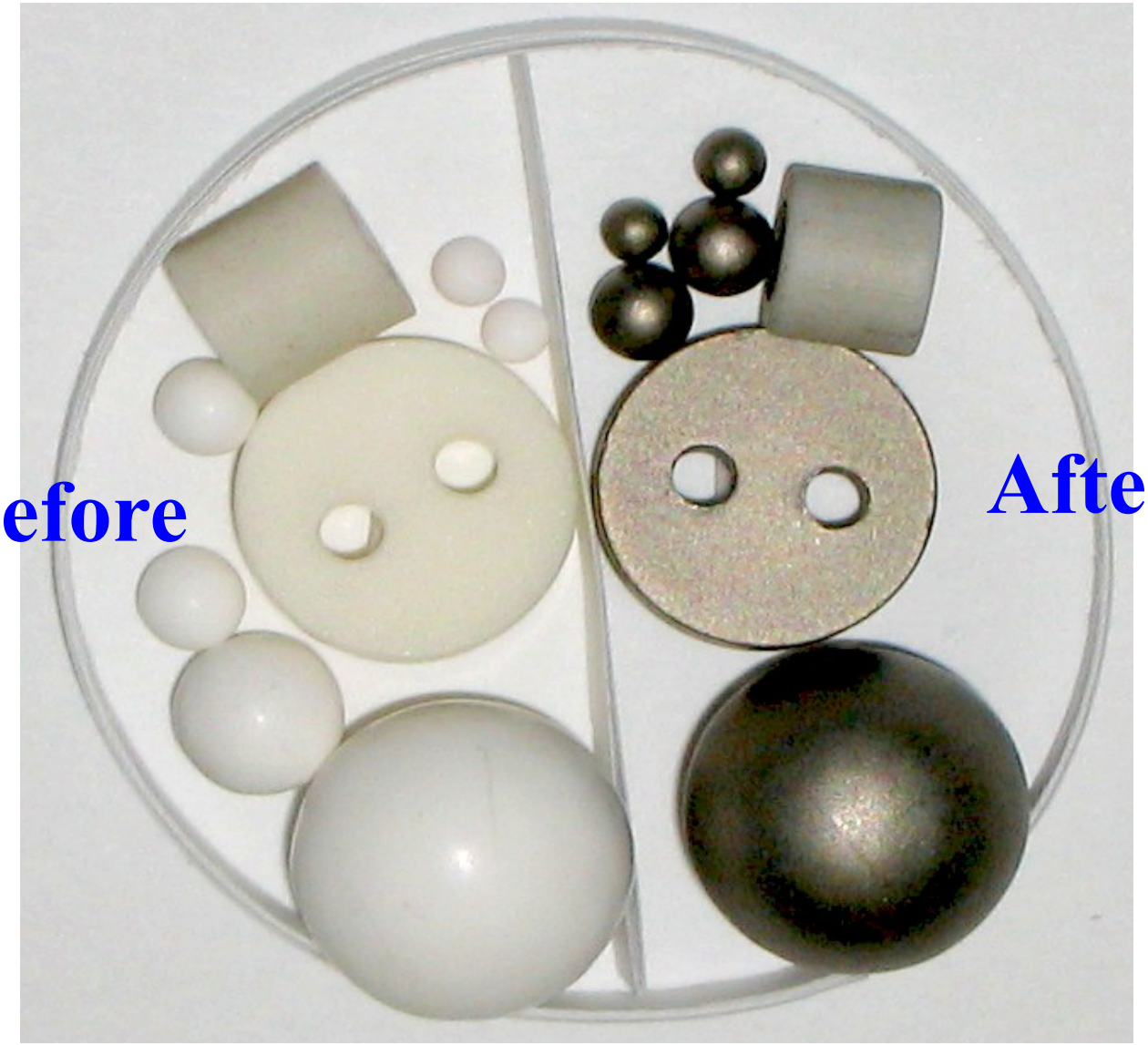


Ti powder
+
substrate

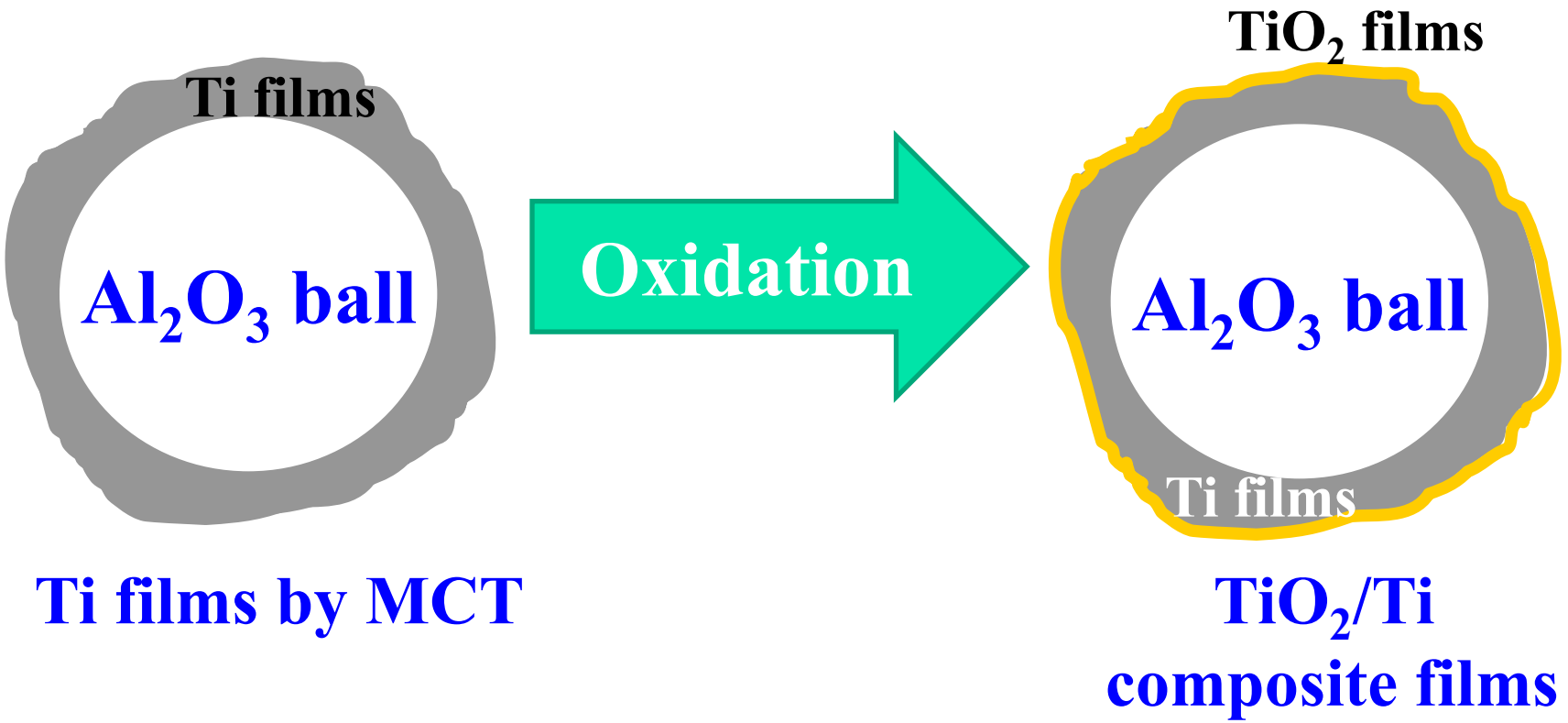
Mechanical
impact
friction
abrasion

Ti films
on Al_2O_3 balls

Ti films by MCT



TiO_2/Ti composite films by MCT and oxidation

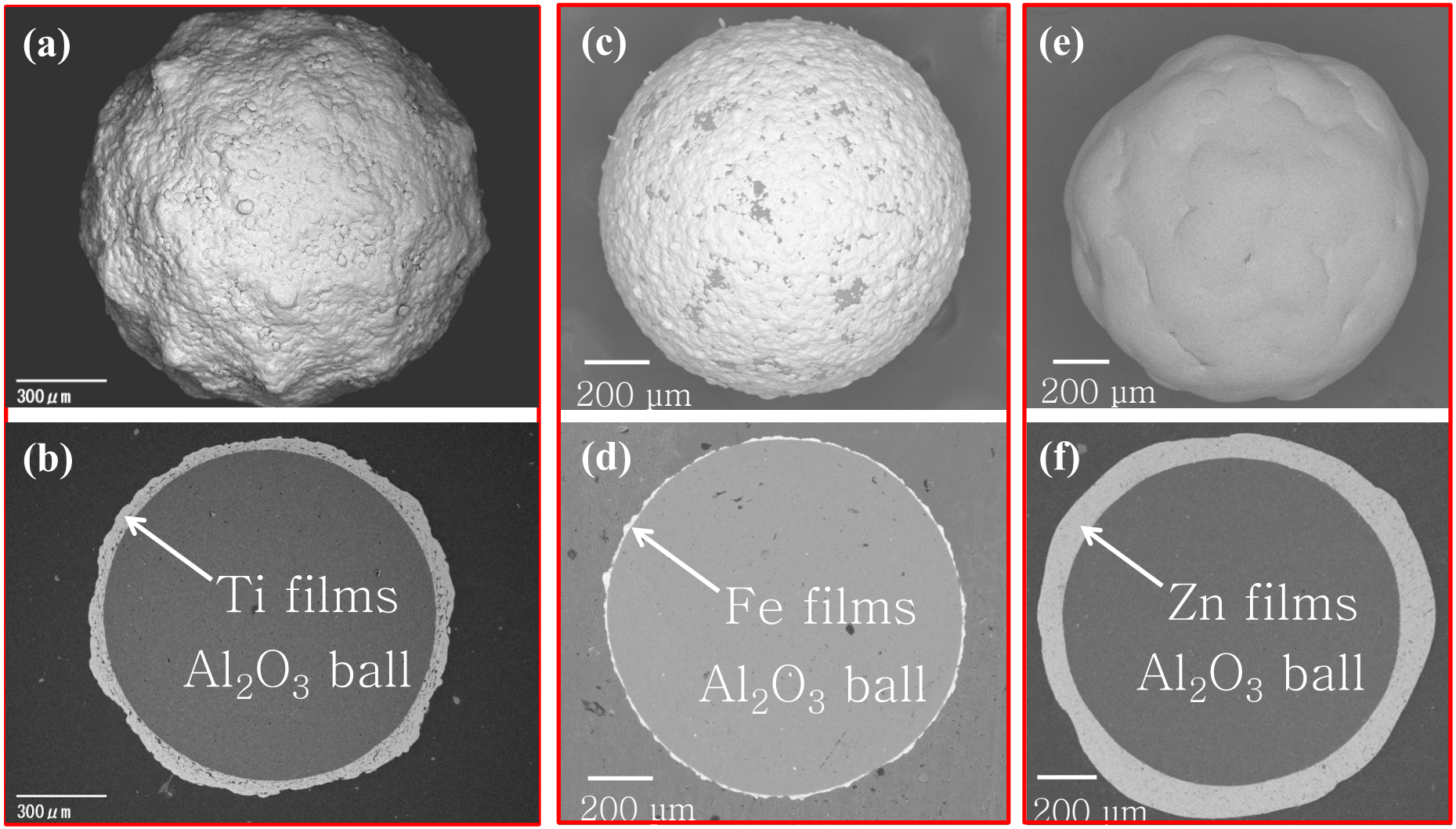


Ti films by MCT

TiO_2/Ti composite films

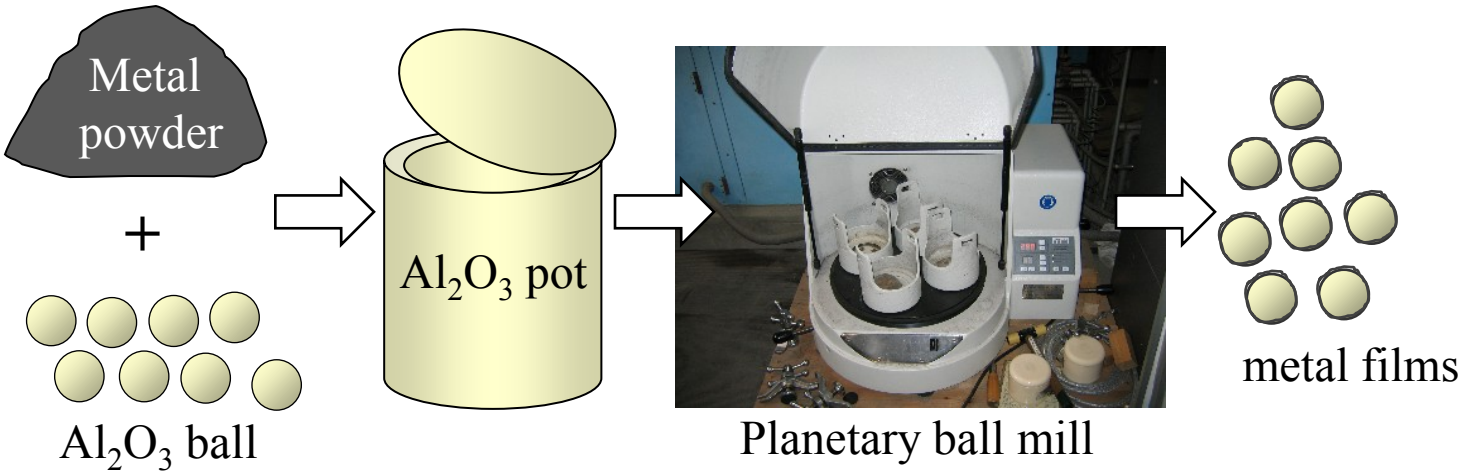
TiO_2/Ti composite films by MCT and oxidation

Some metal films by MCT



2-step Mechanical Coating Technique (2-step MCT)

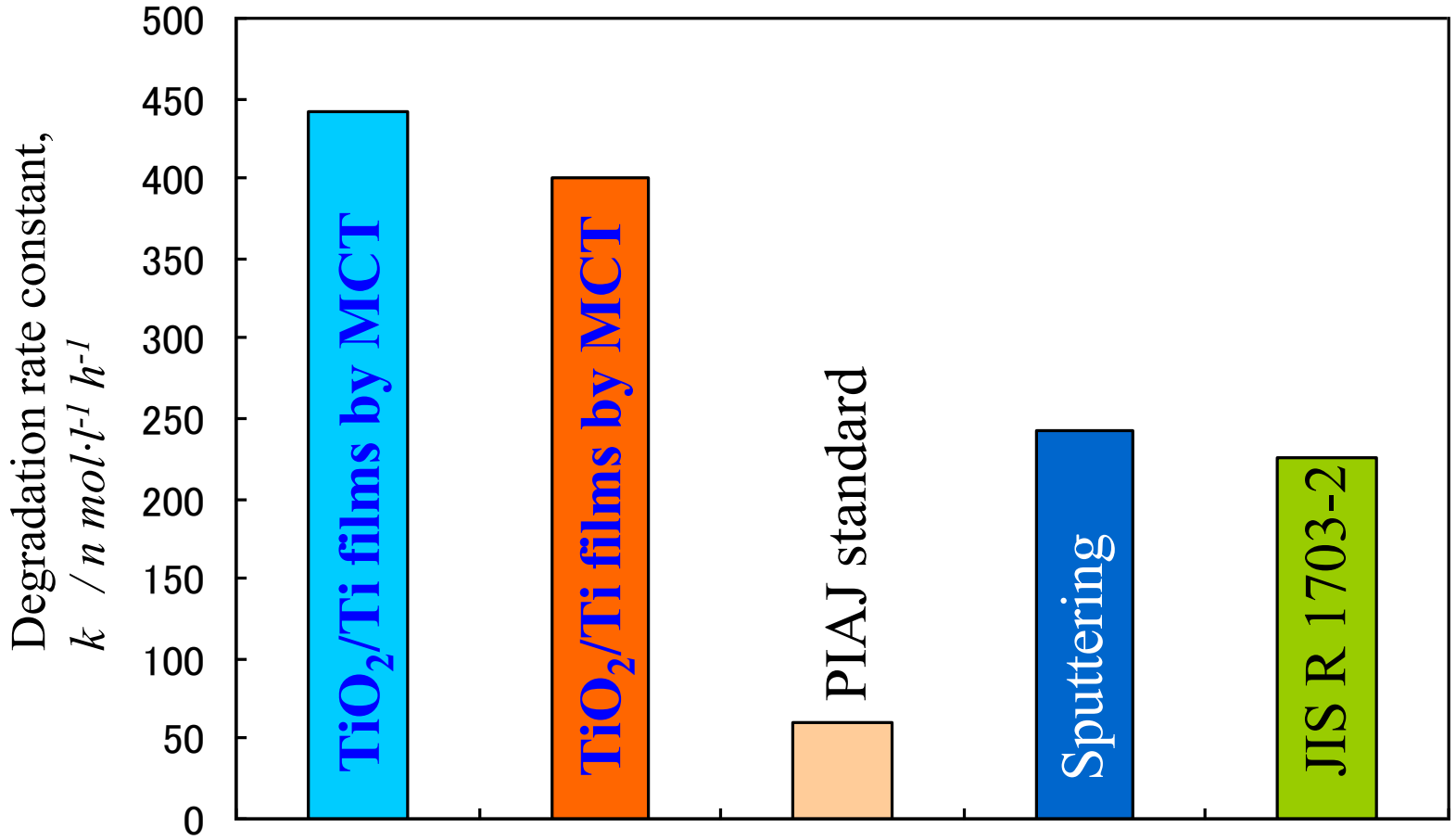
1-step: forming metal films



+

2-step: forming TiO_2/metal films

Performance of TiO_2/Ti composite photocatalyst films



Performance comparison between TiO_2/Ti films by MCT and those by other techniques or standards.

Advantages of MCT

- Simple equipments and fabrication process
- Formation of spherical substrates
- Relatively higher performance
- Lower fabrication cost
- … …