Development of CNT-TiO_2 photocatalysts using separation of carbon nanotube

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Recently anatase TiO_2 particles showed photocatalytic enhancements in many cases. This concept can be extended to defined carbon structures. Furthermore, SWCNTs have excellent mechanical properties and a large specific surface area (>150m^2/g). The mixture of titania and SWCNT also has a large area where pollutants can adsorb. Thus, SWCNT-TiO_2 mixtures and composites are able to achieve photocatalytic activities well beyond the anatase/rutile composites.

This study highlights the literature on the synthesis of SWCNT-titania composite structures, and addresses the enhancement of the separated SWCNT-TiO_2. The SWCNT was supplied from a research team in Kyungwon univ. which has a SWCNT separation technique. Furthermore, the SWCNT-TiO_2 composites in photocatalytic degradation studies are examined with focus toward understanding the activity enhancement.