

Comparison of the photocatalytic hydrogen production with various C₆₀-derivatives modified TiO₂ under visible light irradiation

박이슬, 최원용*

포항공과대학교

(wchoi@postech.ac.kr*)

The objective of this study is to utilize the visible light sensitizing and electron-mediating properties of fullerene (C₆₀) in the TiO₂ photocatalysis for H₂ production. For this purpose, fullerol (water-soluble form of the fullerene) was used and a fullerol/TiO₂ composite was made by adsorption of fullerol on the TiO₂ surface. Also, C₆₀/TiO₂ and CNT/TiO₂ were prepared for the comparison with fullerol/TiO₂. Then, systematically tested their visible light reactivity for hydrogen production in aqueous suspension (with EDTA as an electron donor) under $\lambda > 420$ nm illumination. How the sensitizing activity for hydrogen production is influenced by the type of C₆₀-derivatives was investigated.