

Synthesis of the Metalotetraphenylporphyrin Using the Commercialized Tetraphenylporphyrin

권순일, 유지선, 김범식*
한국화학연구원
(bskim@kRICT.re.kr*)

Tetraphenylporphyrin (TPP or H₂TPP) is a synthetic heterocyclic compound that resembles naturally occurring porphyrins. TPP is dye and catalyst found in hemoglobin and cytochrome. And it is related to chlorophyll vitamin B12. Recently, TPP is being spotlighted as the photosensitizer for the production of singlet oxygen. In this study, metal-TPP was synthesized by commonly used TPP and titanium complex. The hydrogen bond (NH bond) broke down in metal-TPP by the NMR analysis. Through the XPS analysis, titanium was confirmed existing the divalence or trivalence. Also, By the UV-vis spectrometer result, TPP wavelength was excited at the 400 nm, but metal-TPP wavelength was shifted at the near 450 nm. In this result, metal-TPP was excited at the visible light field. The outcomes of this study suggest that Metal-TPP can be used as a Light Harvesting Antenna (LHA) catalysis for solar energy system.