PHOTOCATALYTIC PROPERTIES OF FERROCYANIDES

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ABSTRACT

A number of heavy metal hexacyanides are tested for their ability to catalyse photo-oxidation of water with $biby_3\ Ru^{2+}$ as the sensitizer and $K_2S_2O_8$ as the sacrificial agent. Strongest catalytic activity is seen in $Zn_3\ (Fe(CN)_6)_2$, $Cd_3\ (Fe(CN)_6)_2$ and $Fe_3\ (Fe(CN)_6)_3$. An aqueous suspension of cupric Ferrocyanide behaves differently photogenerating H_2 and O_2 with visible light under sacrificial conditions in the absence of electron or hole transfer agent. Semiconducting properties of Ferronoides and their relevance to catalytic activity are discussed.