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Optical and Structural Properties of Dye Sensitized Composite Semiconductor Photoanode

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ZnS, a wide band gap semiconductor and good candidate for dye sensitized semiconductor solar cell (DSSC) photoanode was doped with aluminum. However, the role of ZnS and Al-doped ZnS in DSSC is lack of knowledge. Herein, we studied the effect of ZnS and Al-doped ZnS in $TiO_2 photoanode using a simplest preparation. The thin film was prepa$ paste with ZnS and ZnS:Al. Structural property and the relevance of each elements in all anode thin films was characterized by means of X-ray diffraction. The Ru-based dye, N719 was used for semiconductor sensitization. The absorption and photoluminescence of $TiO_2/N719$, TiO_2 : ZnS/N719 , TiO_2 $ZnS : Al/N719 photoanodes were investigated$ $doped ZnS in dye sensitized TiO\_2$ photoanode is discussed.

Primary authors: Ms WANGCHAROEN, Kamonchanok (Division of Physics, Faculty of Science and Technology, Thammasat University, Klong Nueng, Klong Luang, Pathum-Thani, Thailand); Ms SUKHKHAWUTTIGIT, Siripassorn (Division of Physics, Faculty of Science and Technology, Thammasat University, Klong Nueng, Klong Luang, Pathum-Thani, Thailand); Dr INFAHSAENG, Yingyot (Division of Physics, Faculty of Science and Technology, Thammasat University, Klong Nueng, Klong Luang, Pathum-Thani, Thailand)

Co-author: Dr UMMARTYOTIN, Sarute (Division of Textile and Materials Technology, Faculty of Science and Technology, Thammasat University, Klong Nueng, Klong Luang, Pathum-Thani, Thailand)

Presenter: Ms WANGCHAROEN, Kamonchanok (Division of Physics, Faculty of Science and Technology, Thammasat University, Klong Nueng, Klong Luang, Pathum-Thani, Thailand)

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