

## Plasma enhanced deposited polyaniline on single and bilayered TiO<sub>2</sub> electrodes for the heterojunction structure

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Aniline monomer was polymerized and deposited by plasma enhanced technique on single and bilayered TiO<sub>2</sub> thin films coated on the fluorine doped tin oxide (FTO) glass for the fabrication of p-n heterojunctions. The deposition of the single and double layered TiO<sub>2</sub> was achieved through doctor blade and dip coating technique respectively. The fabricated p-n heterojunction structures were morphologically, optically and structurally characterized by field emission scanning electron microcopy (FESEM), Raman and X-rays photon electron spectroscopy (XPS) studies. The I-V characteristics indicated that a p-n heterojunction at nano-crystalline single and bilayered TiO<sub>2</sub>/polyaniline interface was created which exhibited the typical ohmic behavior. PANI/bilayered heterojunction achieved high current which was attributed to the substantial deposition of PANI into the bilayered thin film and resulted to the enhanced interfacial contact between PANI with TiO<sub>2</sub> layers.