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On the Synthesis and characterization of Rhodamine 6G doped ZnO Nanorod Arrays for Solar cell FOZIA Z. HAQUE, LOKESH SHASTRI, M.A.N.I.T., KRISHNA S. PANDEY, MUSHAHID HUSAIN — Dye sensitized solar cell (DSSC) using ZnO nanoparticles provides a technically and economically credible alternative concept to present day p-n junction photovoltic device. The conventional systems where the semiconductors assume both the task of light absorption and charge carrier transport the two junctions are seprated here. In DSSC the light is absorbed by a sensitizer. In our investigation the DSSC consist of Zno nanoparticles that have a large surface area are used to harvest sunlight. Firstly the ZnO nanoparticals were grown on FTO substrate and then this nanoparticals were used as seed layers to grow aligned nanorods and used them as the wide band gap semiconductor electrod for solar cell. ZnO electrodes were sensitized by Rhodamine 6G dye. ZnO nanoparticles and nanorods were observed through SEM and their crystallinity were investigated using XRD. The higher efficiency in DSSC is possible due to the increased surface area from the nanoparticles facilitating the fast electron transport through the nanowires.

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