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Manufacturing Process of Solar Cells Using Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) Nanoparticles

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Editorial

Effective conversion of sunlight to electricity has been final goal in organic and inorganic biophotochemistry. In recent years, solar cells manufactured by nanoparticles of Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) use extensively in order to converting sun light (Figures 1-4) [1-16]. Illuminating light equal to semiconductor band gap make produce electron and hole in them. If sunlight be able to supply required energy to produce electron and hole, sunlight can be converting directly to electrical energy. This process is being done easily in narrow band gap semiconductors. Bands' gap of Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) nanoparticles are from IR to UV range. Since the only 5–10% of sunlight is in this range, in solar cells based on Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) nanoparticles, for making them sensitive to visible light, dyes are used as scavenger. In this editorial, the method of manufacturing electrodes which are synthesized by Mercurochrome have been studied and comparing of their efficiency due to their structure and morphology, have been done by Energy Dispersion Analysis (EDS), Scanning Electron Microscope (SEM), X–Ray Diffraction (XRD), Transmission Electron Microscope (TEM), Differential Thermal Analysis–Thermal Gravim Analysis (DTA–TGA), Energy–Dispersive X–Ray Spectroscopy (EDX), ^{1}HNMR, ^{13}CNMR, UV–Vis, Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy (ATR–FTIR) and FT–Raman spectroscopies and also ESI MS, PM5 and DFT studies.

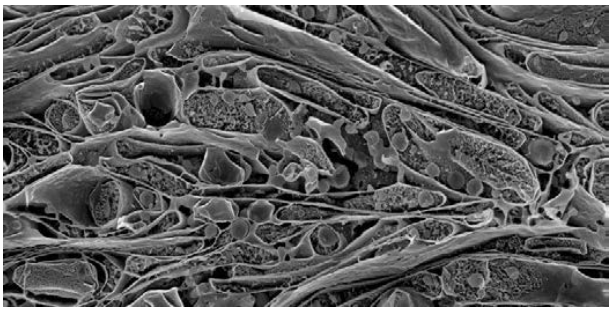

Figure 1: Scanning Electron Microscope (SEM) image of solar cells manufactured by Cadmium Oxide (CdO) nanoparticles with 300000x zoom.

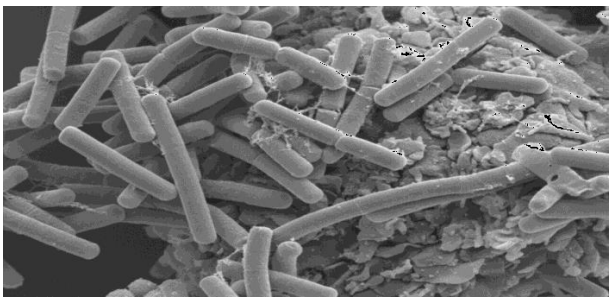

Figure 2: Scanning Electron Microscope (SEM) image of solar cells manufactured by Rhodium (III) Oxide (Rh_2O_3) nanoparticles with 300000x zoom.

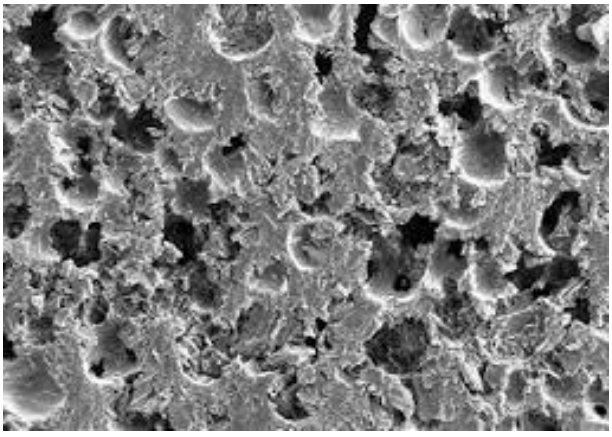

Figure 3: Transmission Electron Microscope (TEM) image of solar cells manufactured by Cadmium Oxide (CdO) nanoparticles with 300000x zoom.

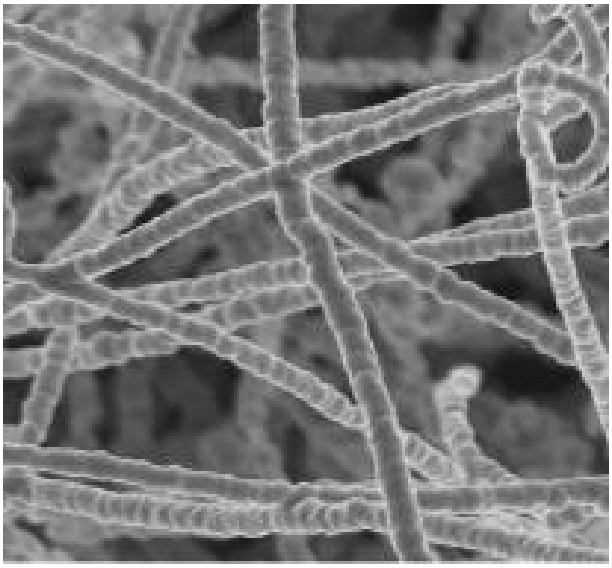

Figure 4: Transmission Electron Microscope (TEM) image of solar cells manufactured by Rhodium (III) Oxide (Rh_2O_3) nanoparticles with 300000x zoom.

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