Effect of Mo doped in Vanadium Pentoxide (V_2O_5) for dye degradation

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Pure and Mo-doped vanadium pentoxide nanoparticles were successfully synthesized in this work utilizing a simple, surfactant-free synthesis technique. The dopant concentration was changed to various concentrations of 2%, 4%, 6%, and 8%. Various techniques, such as X-Ray Diffraction, Scanning Electron Microscope, Energy Dispersive X-Ray Analysis, and Fourier Transform Infrared, were used to investigate the influence of Mo on V_2O_5 nanoparticles. According to the findings, all of the samples had orthorhombic structure, which was verified by XRD. SEM analysis was used to determine the morphology of nanoparticles. EDAX confirms the doping and purity of samples. Using a UV-Vis Spectrometer, different optical band gaps were also found. Through tests employing the Fourier Transform Infrared (FTIR) method, the vibrational modes present in prepared samples were identified. The pure and doped nanoparticles that were synthesized will be useful in dye degradation.