

**Sunlight driven photocatalytic degradation of organic pollutants using
MnV₂O₆/BiVO₄ heterojunction: Mechanistic perception and degradation
pathways**

Karina Bano^a, Susheel K. Mittal^b, Prit Pal Singh^{a*}, Sandeep Kaushal^{a*}

^a Department of Chemistry, Sri Guru Granth Sahib World University, Fatehgarh Sahib,
Punjab, India

^b School of Chemistry & Biochemistry, Thapar Institute of Engineering and Technology,

Patiala, India

Corresponding authors: kaushalsandeep33@gmail.com; dhillonps2003@gmail.com

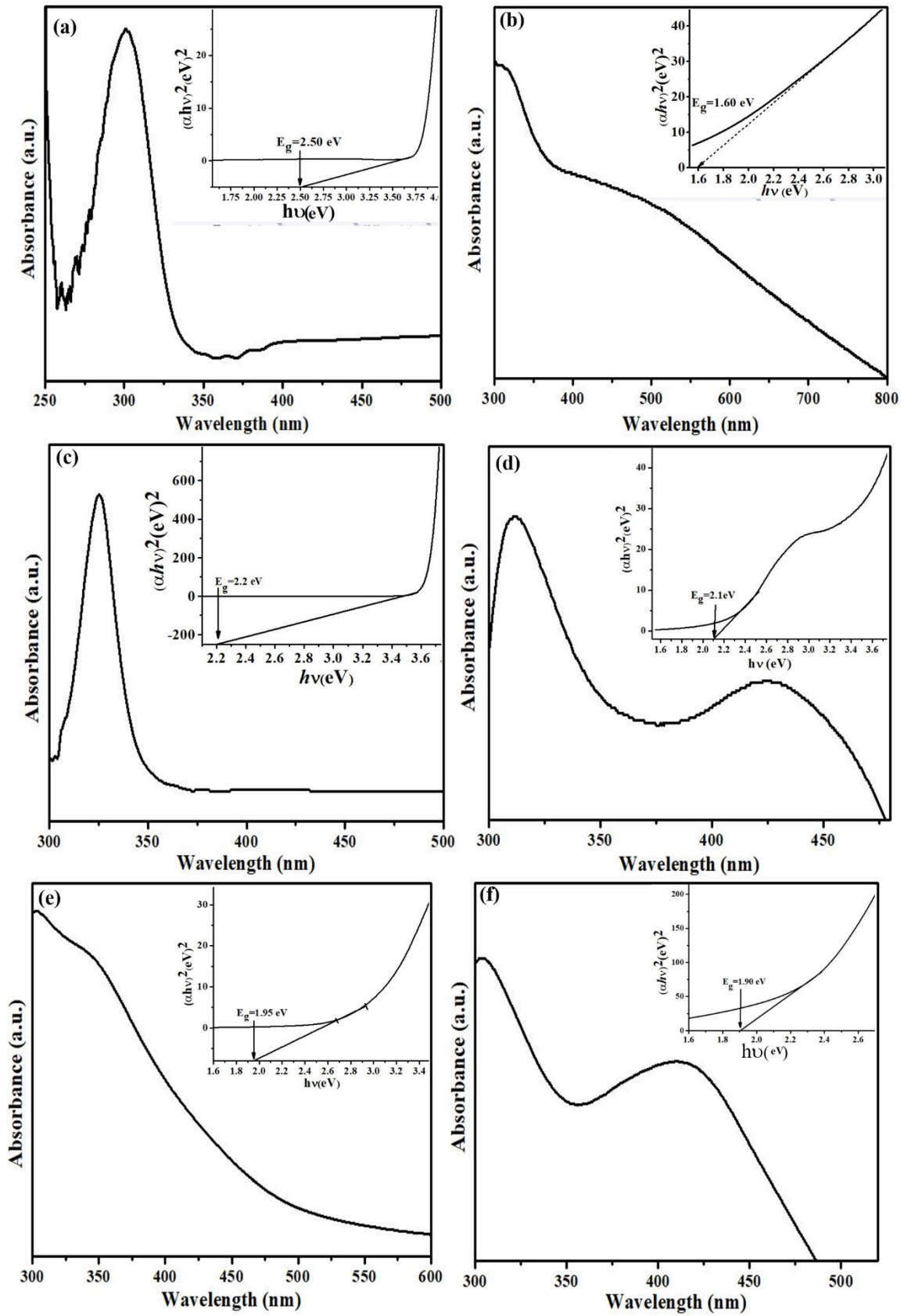


Fig. S1: UV-visible diffuse reflectance spectra of a) S-I; b) S-II; c) S-III; d) S-IV; e) S-V and f) S-VI (inset) Tauc plot

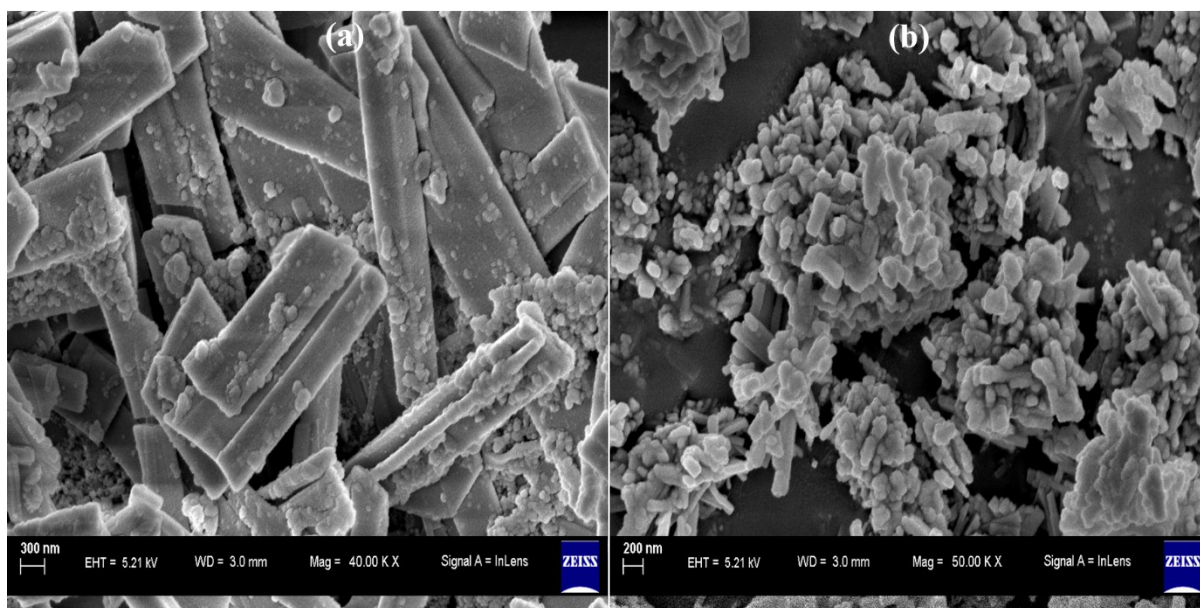


Fig. S2: FESEM images of pure or BiVO_4 and MnV_2O_6 nanoparticles

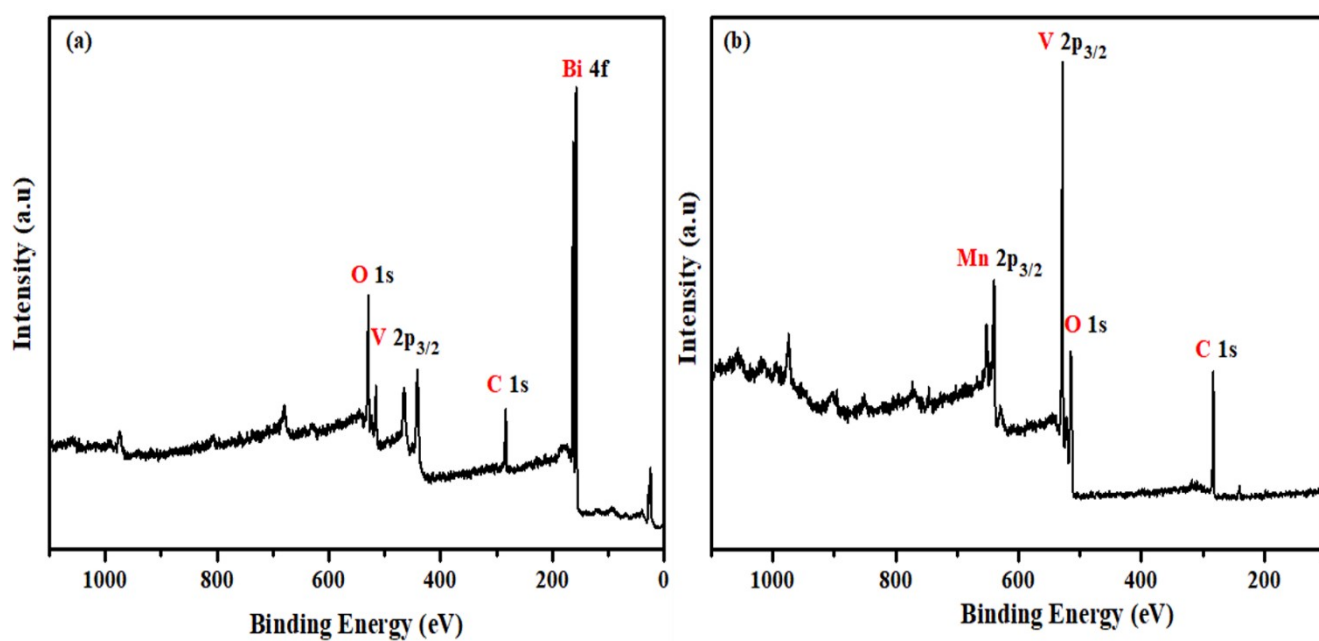


Fig. S3: XPS Survey spectra of pure a) BiVO_4 and b) MnV_2O_6 nanomaterials

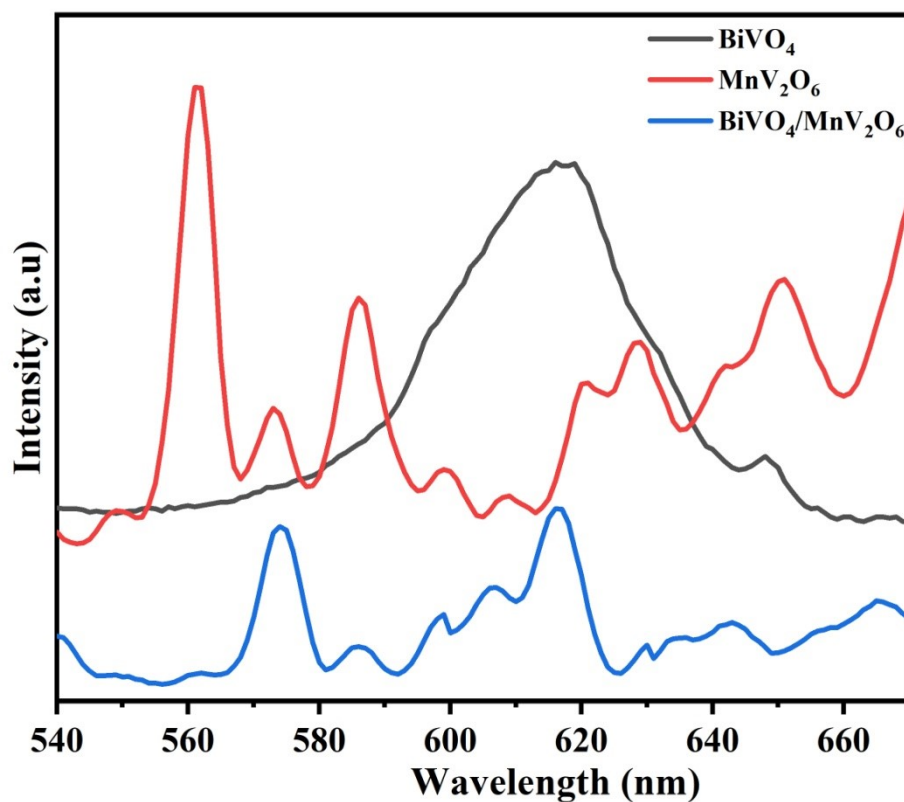


Fig.S4: PL spectra of as synthesized BiVO₄, MnV₂O₆ and BiVO₄/MnV₂O₆ heterojunction photocatalyst.

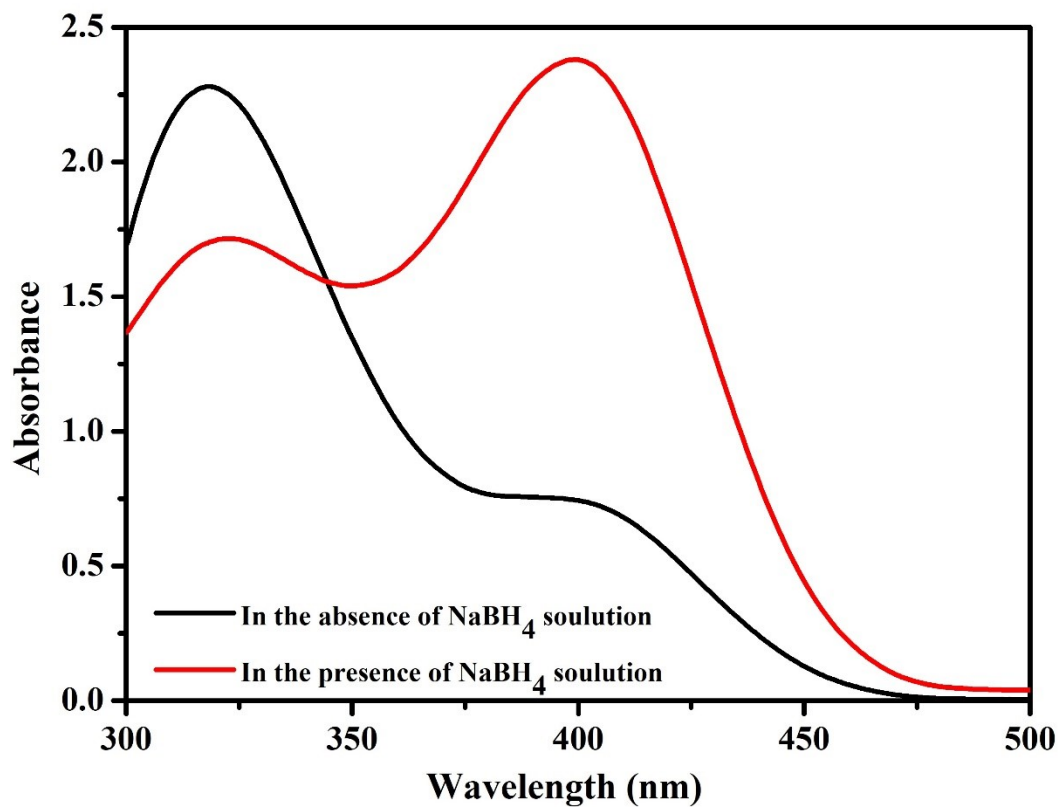


Fig. S5: UV-vis spectra of 4-NP before and after adding the solution of NaBH₄

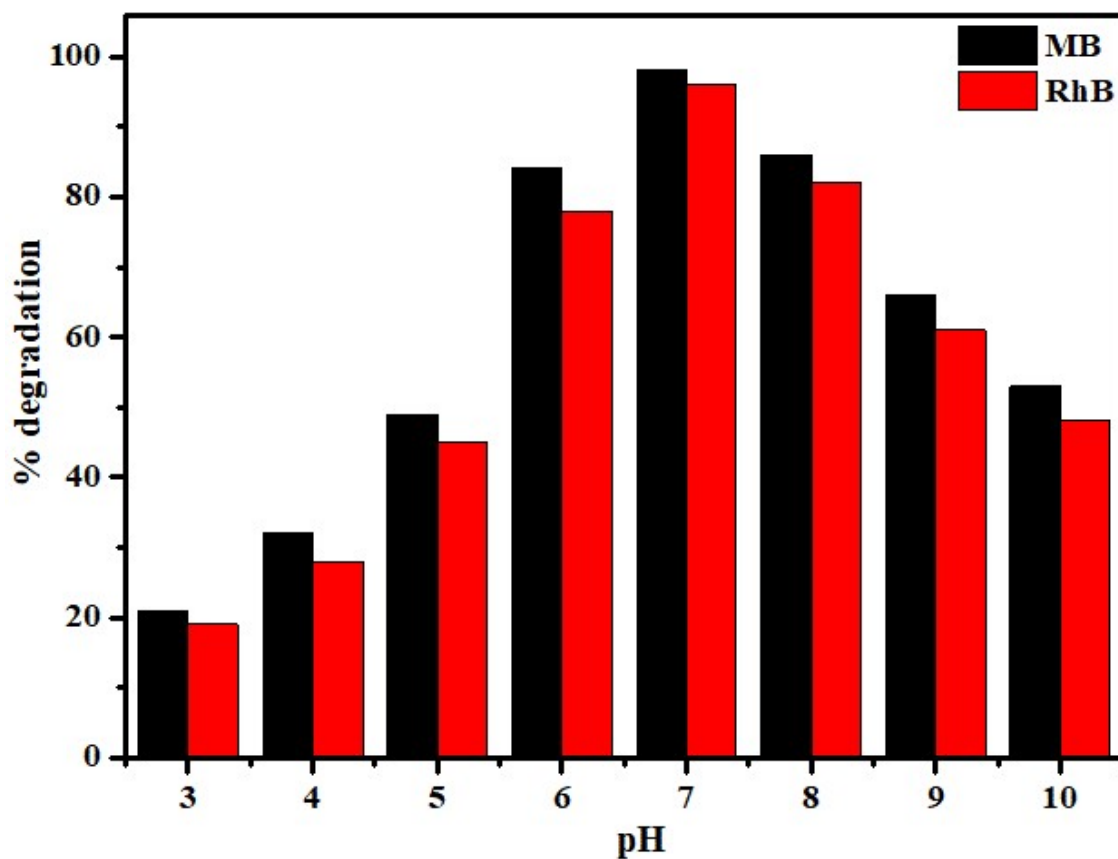


Fig. S6: Effect of pH on the photodegradation of MB and RhB in the presence of $\text{MnV}_2\text{O}_6/\text{BiVO}_4$ heterojunction photocatalyst

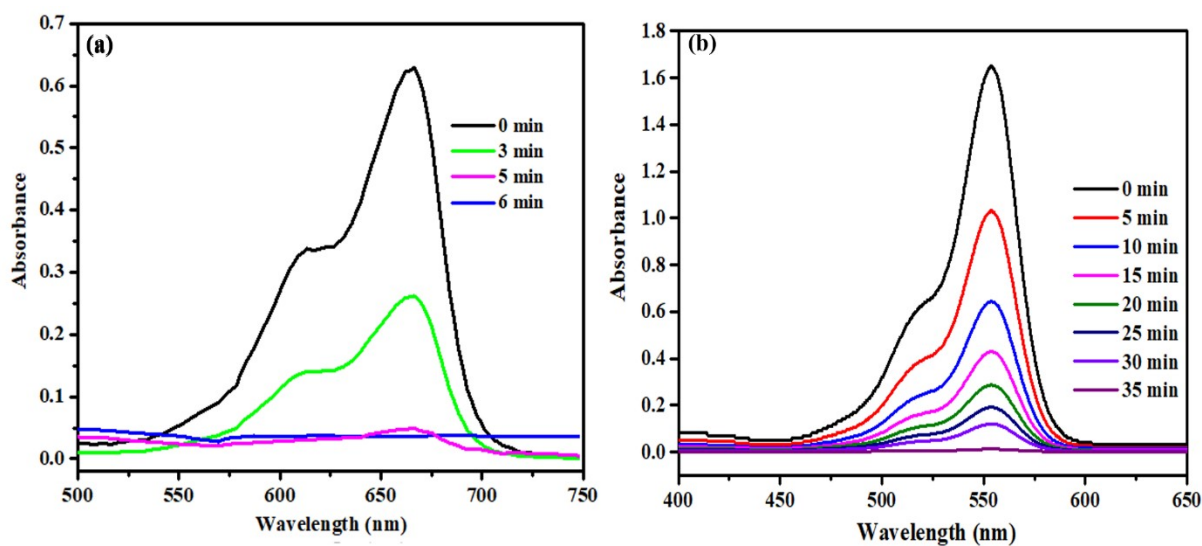


Fig. S7: UV-vis spectral changes of aqueous solution of a) MB and b) RhB dyes on over $\text{MnV}_2\text{O}_6/\text{BiVO}_4$ heterojunction photocatalyst (S-V) under sunlight irradiation at different time intervals