# Photocatalytic reduction of mono, di, and tri-nitrophenols over $Bi_2MoO_6$/Carbon Nitride Heterojunction

Phyu Phyu Cho,[a] Phyu Phyu Mon,[a] Devthade Vidyasagar,[a] Giridhar Madras,[b] Ch. Subrahmanyam[a,*]

[a] Department of Chemistry, Indian Institute of Technology Hyderabad, Kandi, Sangareddy, 502285, Telangana, India.

[b] Department of Chemical Engineering, Indian Institute of Technology Hyderabad, Kandi, Sangareddy, 502285, Telangana, India.

* Corresponding author

Email: csubbu@iith.ac.in

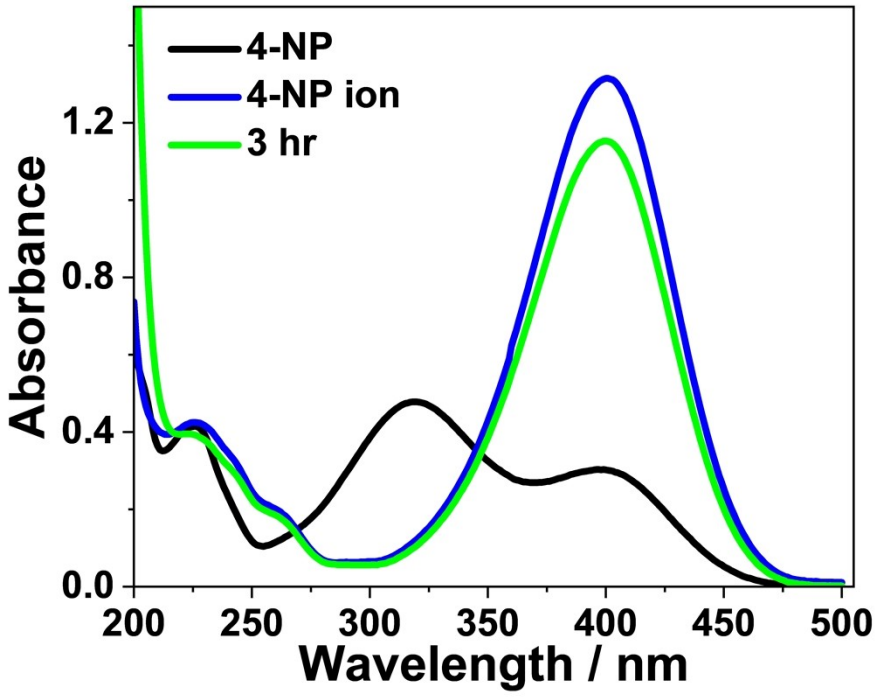


**Figure S1.** UV−visible absorption spectra of 4-NP in the presence and absence of $NaBH_4$.

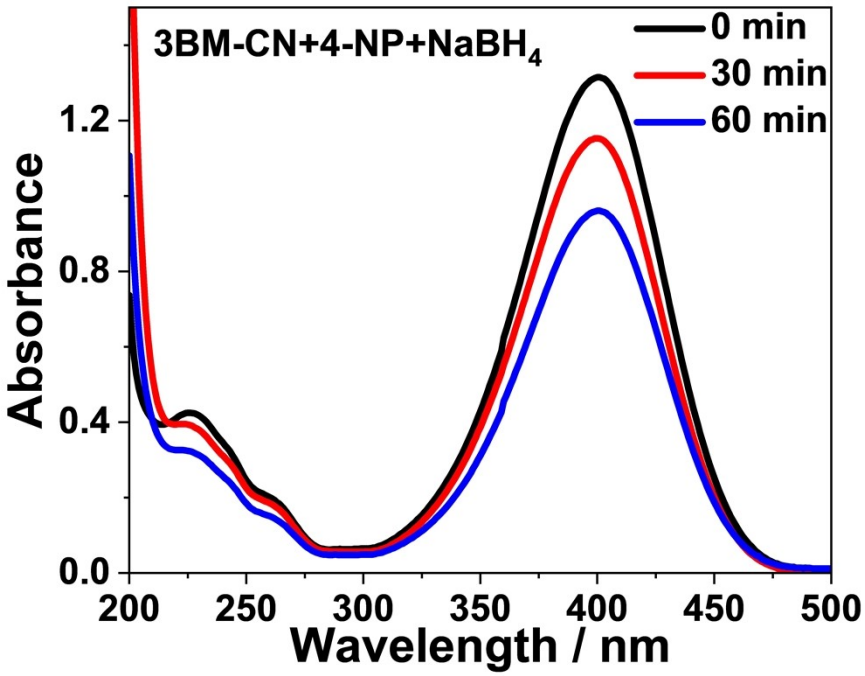


**Figure S2.** UV−visible absorption spectra of 4-NP with $NaBH_4$ in using 3BM-PCN catalyst.

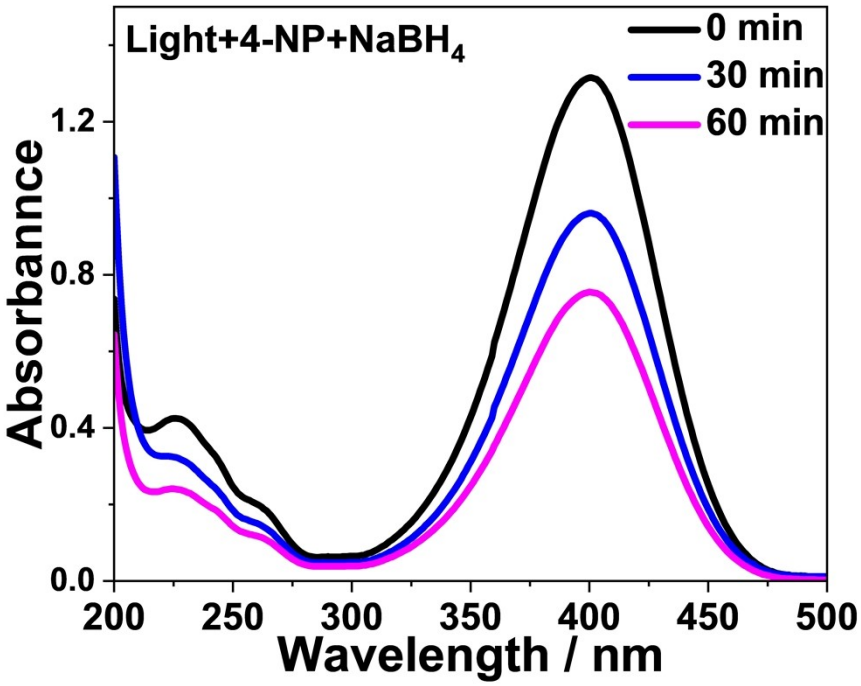


**Figure S3.** UV−visible absorption spectra of 4-NP with $NaBH_4$ under irradiation light.

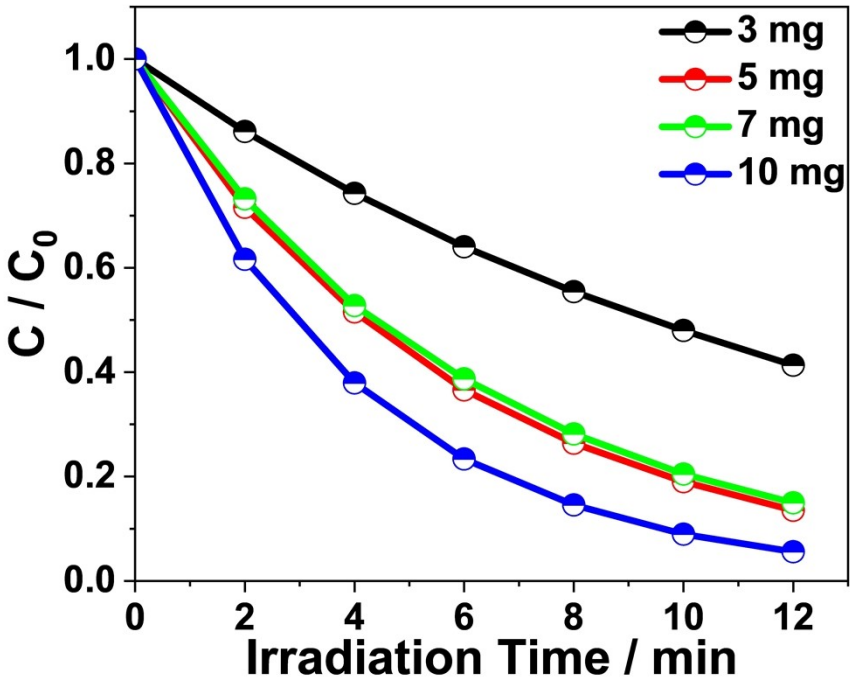


**Figure S4.** Plot of $C/C_0$ Vs reaction time of 4-NP in the various catalyst concentration. Reaction condition: catalyst (3BM-PCN); 50 mL of 4-NP (2 mM); 1 mL of $NaBH_4$ (20 mM).

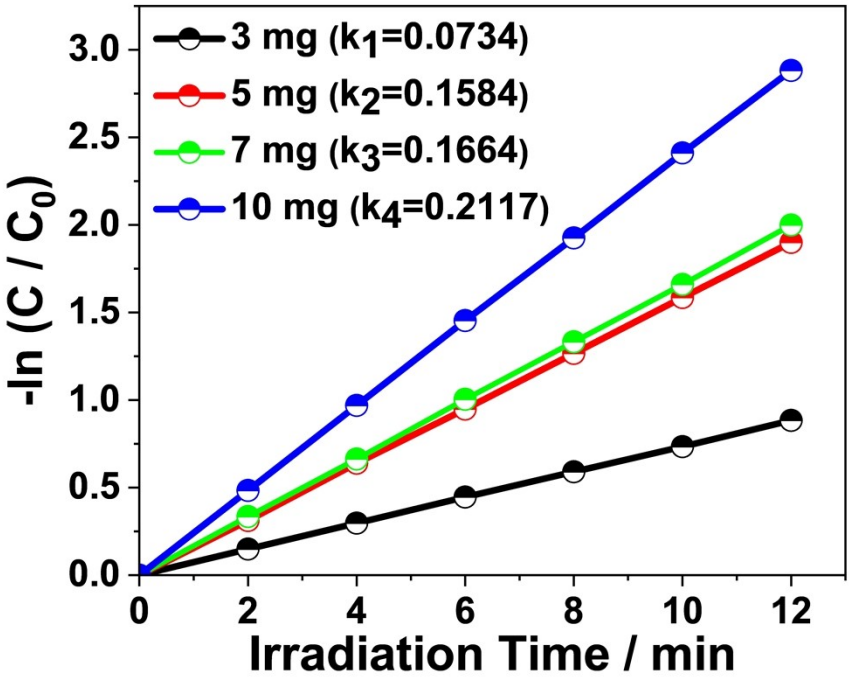


**Figure S5.** Pseudo first order kinetic plot for the photoreduction of 4-NP in the various catalyst concentration. Reaction condition: catalyst (3BM-PCN); 50 mL of 4-NP (2 mM); 1 mL of $NaBH_4$ (20 mM).

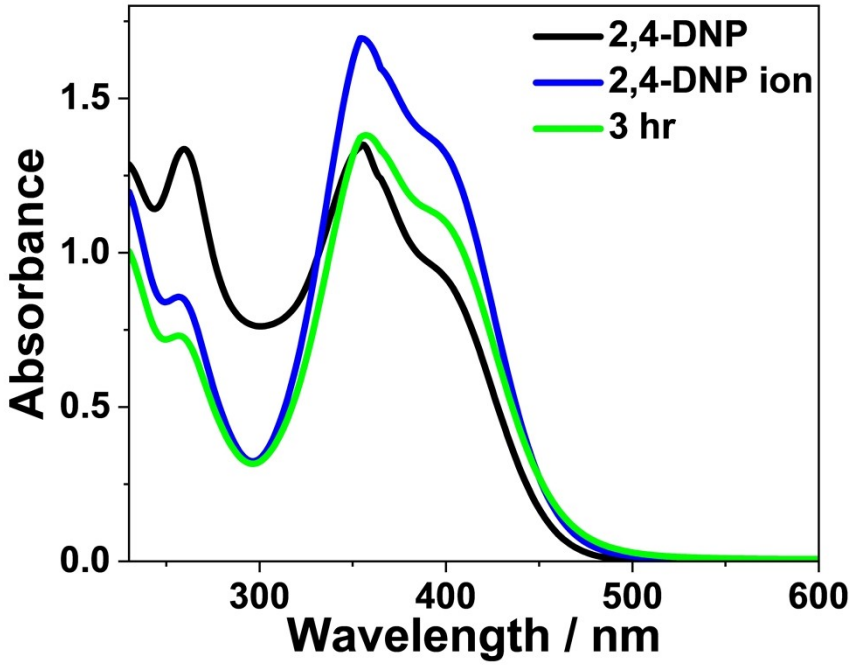


**Figure S6.** UV−visible absorption spectra in the presence and absence of $NaBH_4$ of the 2,4-DNP. Reaction condition: 10 mg of catalyst; 50 mL of 2,4-DNP (2 mM); 1 mL of $NaBH_4$ (20 mM).

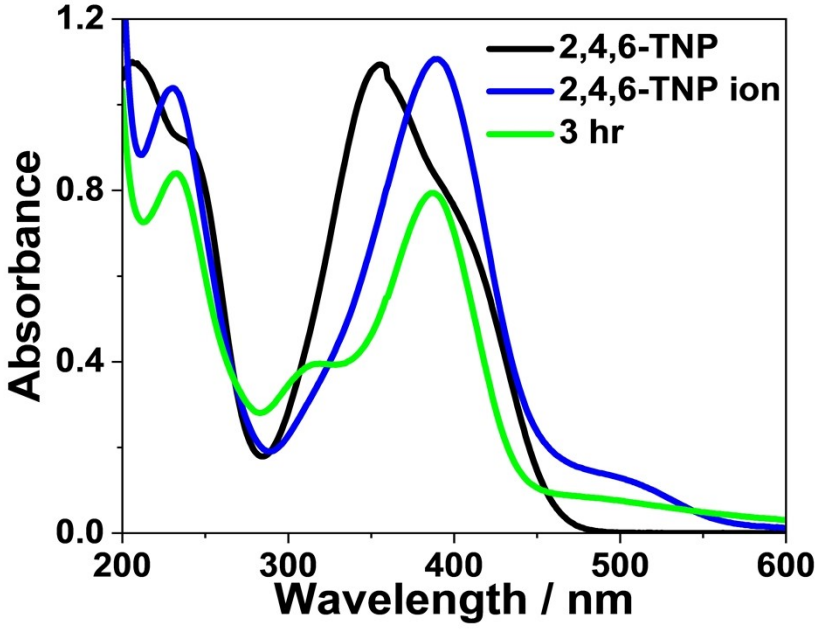


**Figure S7.** UV−visible absorption spectra in the presence and absence of $NaBH_4$ of the 2,4,6-TNP. Reaction condition: 10 mg of catalyst; 50 mL of 2,4,6-TNP (2 mM); 1 mL of $NaBH_4$ (20 mM).

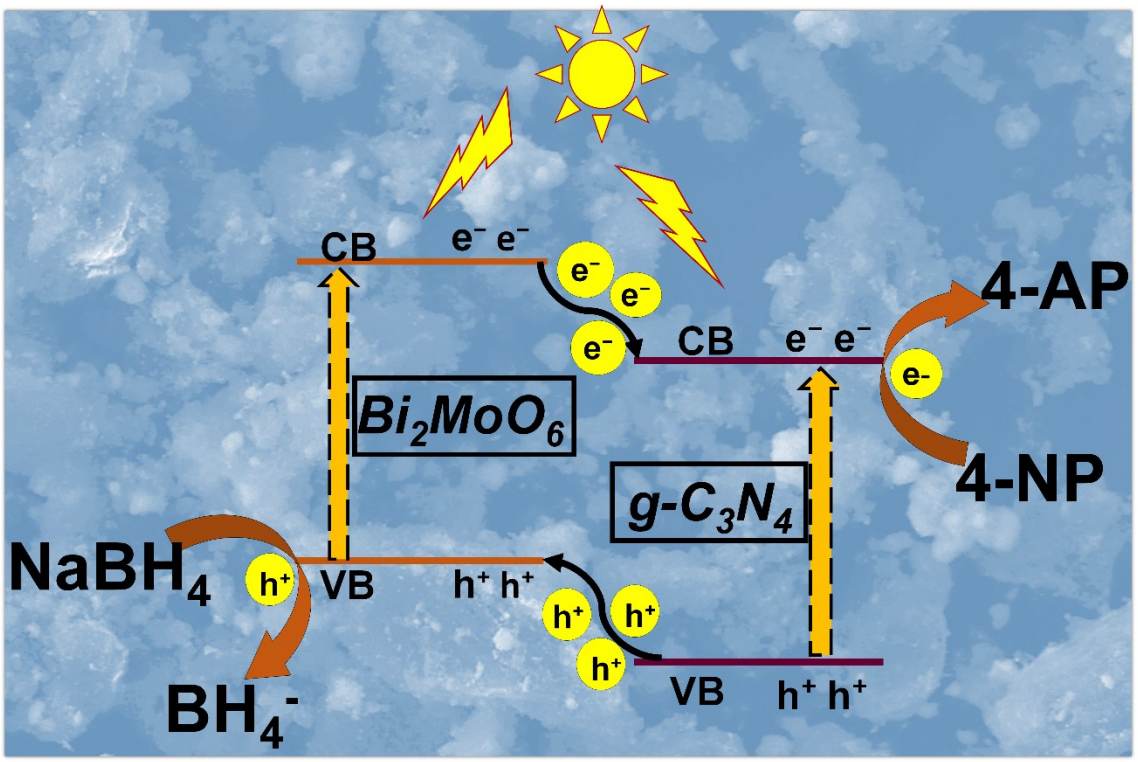


**Figure S8.** Schematic band diagram showing the photocatalytic charge transfer mechanism of the $Bi_2MoO_6$/g-$C_3N_4$ nanocomposite.