Constructing a Visible-Active $CoFe_2O_4$@Bi_2O_3/NiO Nanoheterojunction as Magnetically Recoverable Photocatalyst with Boosted Ofloxacin Degradation Efficiency

Pooja Dhiman [1], Gaurav Sharma [1,2,3,*], Abdullah N. Alodhayb [4], Amit Kumar [1], Garima Rana [1], Thandiwe Sithole [3] and Zeid A. ALOthman [2]

[1] International Research Centre of Nanotechnology for Himalayan Sustainability (IRCNHS), Shoolini University, Solan 173229, India
[2] Department of Chemistry, College of Science, King Saud University, Bldg. #5, Riyadh 11451, Saudi Arabia
[3] Department of Chemical Engineering, University of Johannesburg, P.O. Box 17011, Doornfontein 2088, South Africa
[4] Department of Physics and Astronomy, College of Science, King Saud University, Riyadh 11451, Saudi Arabia

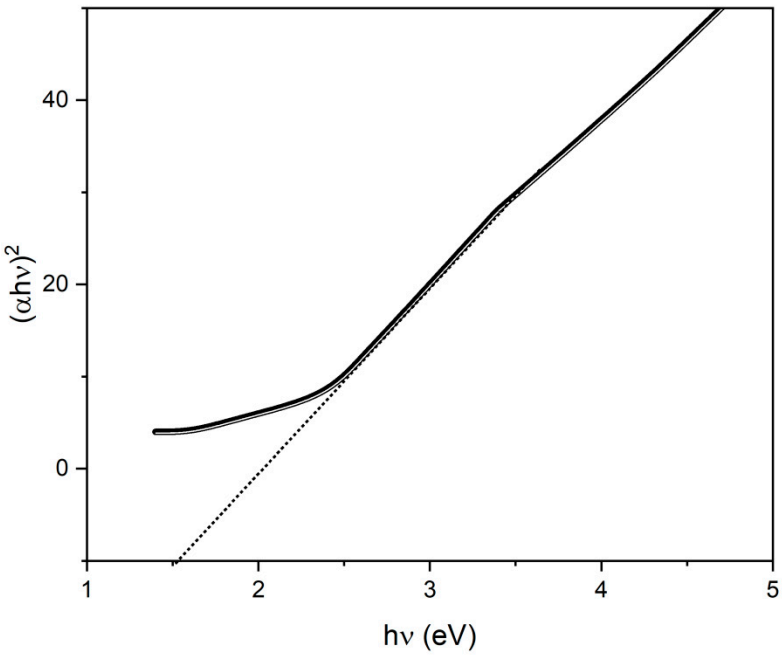

Figure S1. Tauc plot for CBN heterojunction.

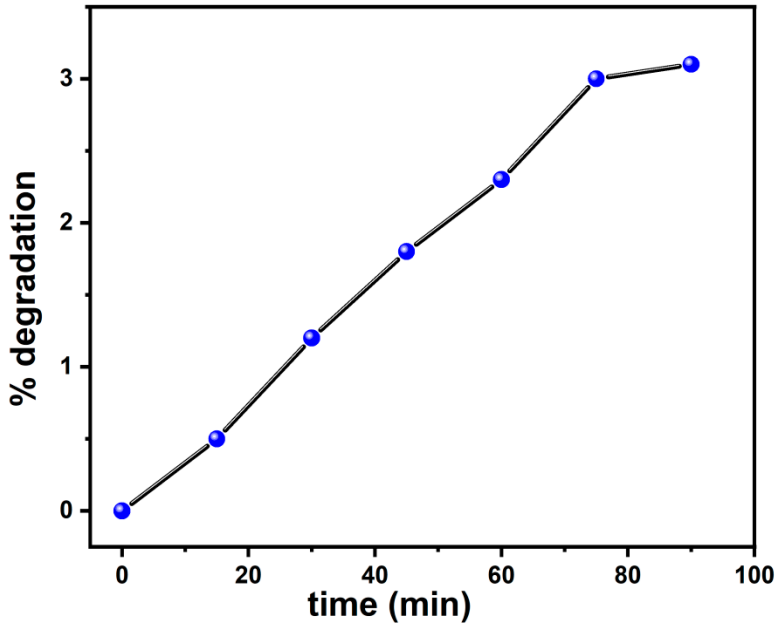

Figure S2. Plain photolysis of OFL under visible light.

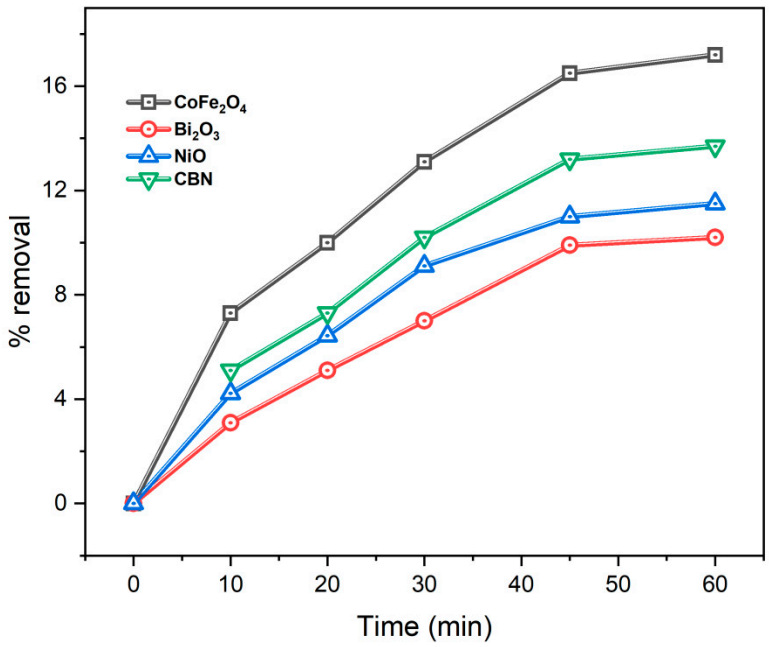

Figure S3. Adsorptional removal of OFL in dark.

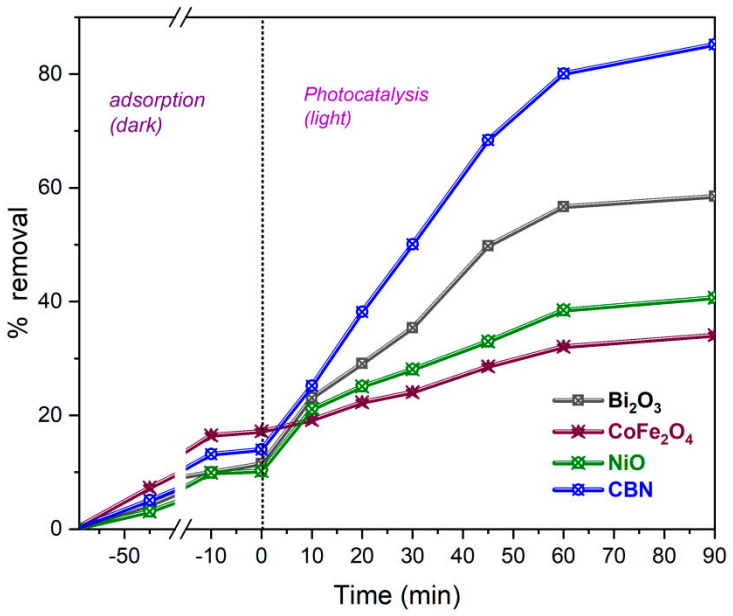

Figure S4. Removal of OFL: 60 min dark followed by 90 min visible light exposure.

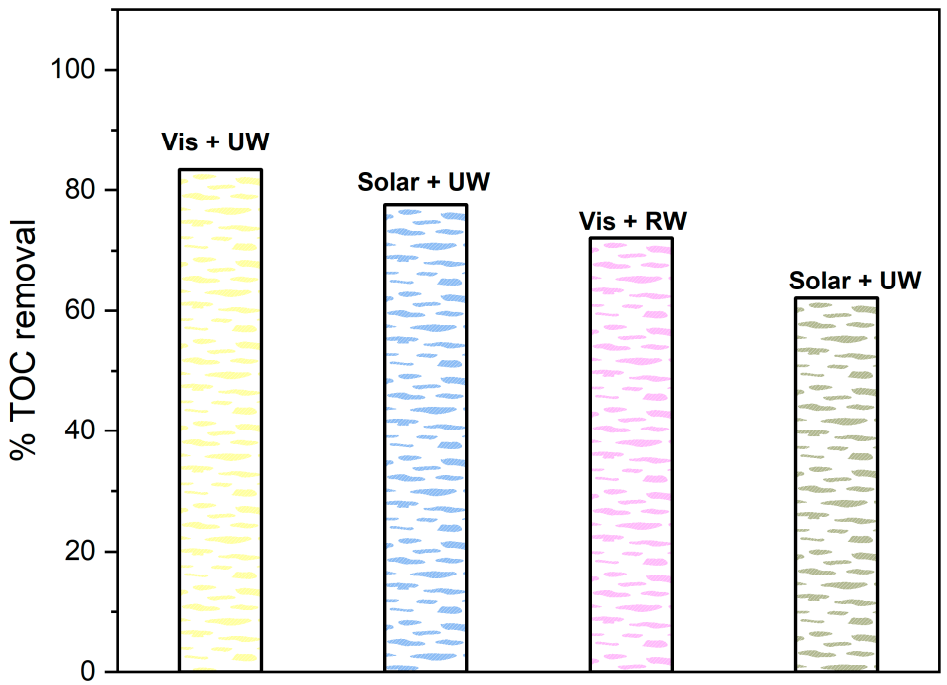

Figure S5. TOC removal during OFL degradation with CBN under visible light exposure.

Table S1. Elemental presence derived from XPS spectra for Bi_2O_3, NiO, andCBN.

XPS peak parameters for Bi_2O_3 sample				
Name	**Peak BE**	**FWHM eV**	**Area (P) CPS.eV**	**Atomic %**
O1s	530.4	2.98	1066199.51	45.77
C1s	285.15	2.91	343964.65	35.74
Bi4f	159.09	2.58	7363374.52	18.49

XPS peak parameters for NiO sample				
Name	**Peak BE**	**FWHM eV**	**Area (P) CPS.eV**	**Atomic %**
O1s	530.15	3.08	1221510.08	43.5
Ni2p	855.23	4.58	5247831.54	35.25
C1s	285.26	2.83	246434.75	21.25

XPS peak parameters for CBN sample				
Name	**Peak BE**	**FWHM eV**	**Area (P) CPS.eV**	**Atomic %**
O1s	530.05	2.9	1252119.31	43.95
C1s	285.17	3.06	329631.18	28.01
Fe2p	711.09	5.59	1433869.92	11.82
Bi4f	158.92	2.64	3968225.15	8.15
Ni2p3	855.2	3.96	444421.36	4.31
Co2p	780.56	3.13	541023.13	3.76