Electronic Supplementary Material (ESI) for Materials Chemistry Frontiers.

N-doped ZnO-MoS_2 binary heterojunctions: Dual role of 2D MoS_2 in the enhancement of photostability and photocatalytic activity under visible light irradiation for tetracycline degradation

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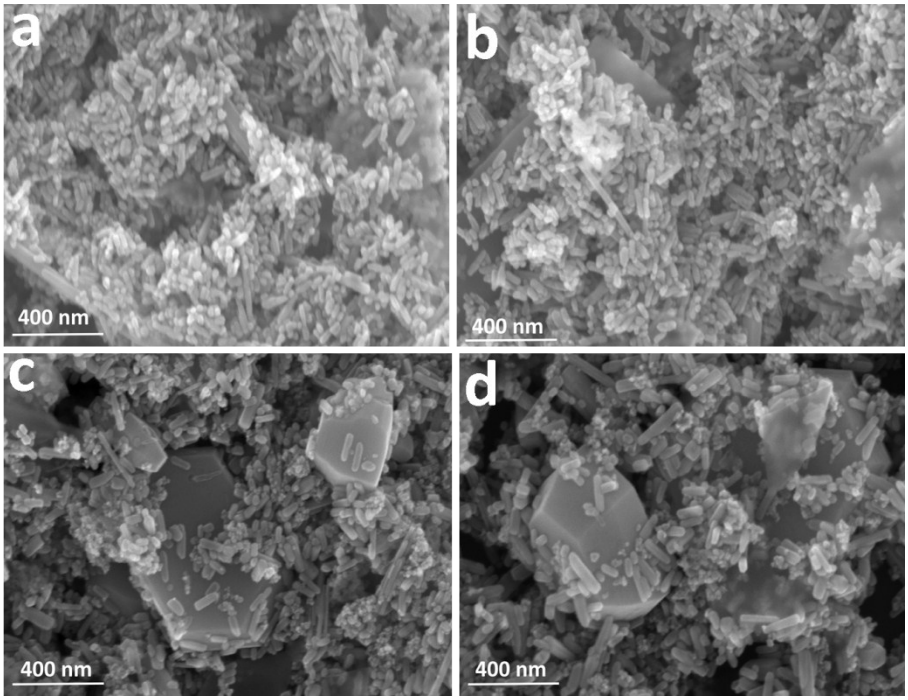
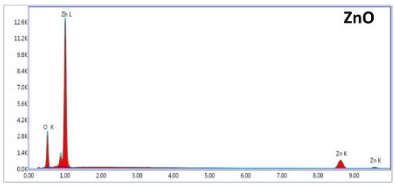
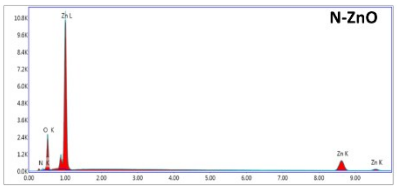


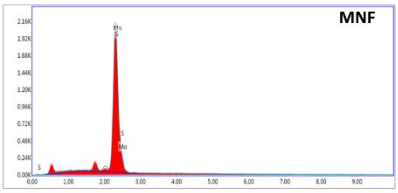
Figure S1. SEM images of (a) NZM0.2, (b) NZM0.5, (c) NZM2 and (d) NZM3 nanocomposites.



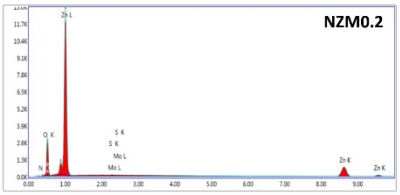
Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
O K	18.80	48.61	563.02	8.20	0.09	1.26	0.87	0.4	1
ZnK	81.20	51.39	388.39	4.52	0.75	0.92	1.01	1	1



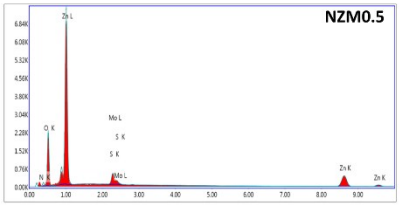
Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
N K	1.03	4.66	7.66	23.84	0.00	1.32	0.84	0.23	1
O K	18.82	45.51	213.14	9.12	0.04	1.3	0.86	0.36	1
ZnK	80.15	49.83	387.44	4.51	0.87	0.96	1.01	1	1



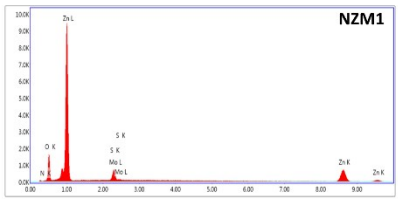
Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
MoL	67.58	35.06	922.93	2.98	0.64	0.91	1.06	1.04	1
S K	32.42	64.94	885.26	3.18	0.35	1.19	0.91	0.92	1



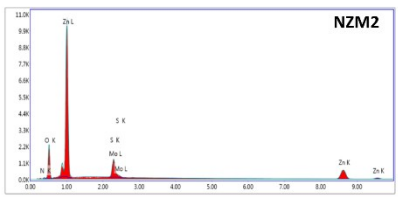
Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
N K	2.07	4.63	19.83	17.90	0.01	1.27	0.87	0.23	1
O K	20.03	47.66	590.98	8.66	0.09	1.24	0.88	0.35	1
MoL	3.20	1.27	94.16	13.27	0.02	0.85	1.12	0.85	1.01
S K	3.18	3.78	183.68	8.62	0.03	1.11	0.95	0.73	1
ZnK	71.52	42.66	377.72	4.64	0.65	0.91	1.02	1	1



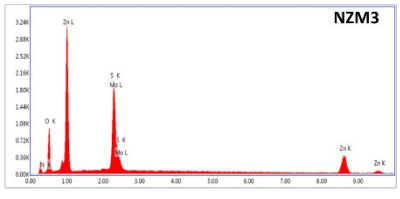
Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
N K	0.60	4.02	3.50	45.74	0.00	1.31	0.85	0.22	1
O K	11.37	42.47	214.56	9.31	0.05	1.28	0.86	0.35	1
MoL	2.45	1.21	45.34	11.69	0.02	0.88	1.1	0.81	1.01
S K	2.19	3.22	79.38	11.52	0.02	1.15	0.94	0.71	1
ZnK	83.38	49.08	289.16	4.88	0.79	0.95	1.01	1	1



Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
N K	1.62	4.69	15.21	18.49	0.01	1.28	0.86	0.25	1
O K	17.85	45.11	526.61	8.43	0.09	1.26	0.87	0.38	1
MoL	0.41	0.33	11.12	49.24	0.00	0.86	1.11	0.83	1.01
S K	0.45	0.61	23.95	19.90	0.00	1.12	0.95	0.72	1
ZnK	79.66	49.26	394.66	4.56	0.73	0.92	1.01	1	1



Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
N K	0.98	4.88	7.33	29.00	0.00	1.28	0.86	0.22	1
O K	16.46	41.55	393.24	9.07	0.07	1.26	0.87	0.34	1
MoL	4.86	2.60	121.46	8.92	0.04	0.86	1.11	0.84	1.01
S K	5.01	5.97	246.10	6.41	0.04	1.12	0.95	0.73	1
ZnK	72.70	45.00	328.47	4.82	0.67	0.92	1.01	1	1



Element	Weight %	Atomic %	Net Int.	Error %	Kratio	Z	R	A	F
N K	3.04	4.04	14.81	19.18	0.01	1.29	0.86	0.19	1
O K	13.05	36.01	187.27	10.32	0.04	1.26	0.87	0.27	1
MoL	12.69	6.01	243.43	5.32	0.10	0.86	1.11	0.87	1
S K	9.10	12.33	343.89	5.44	0.08	1.12	0.94	0.76	1
ZnK	62.12	41.61	208.97	5.34	0.58	0.93	1.01	1	1

Figure S2. EDAX patterns and atomic percentage of ZnO, N-ZnO, MNF, NZM0.2, NZM0.5, NZM1, NZM2 and NZM3 heterojunctions.

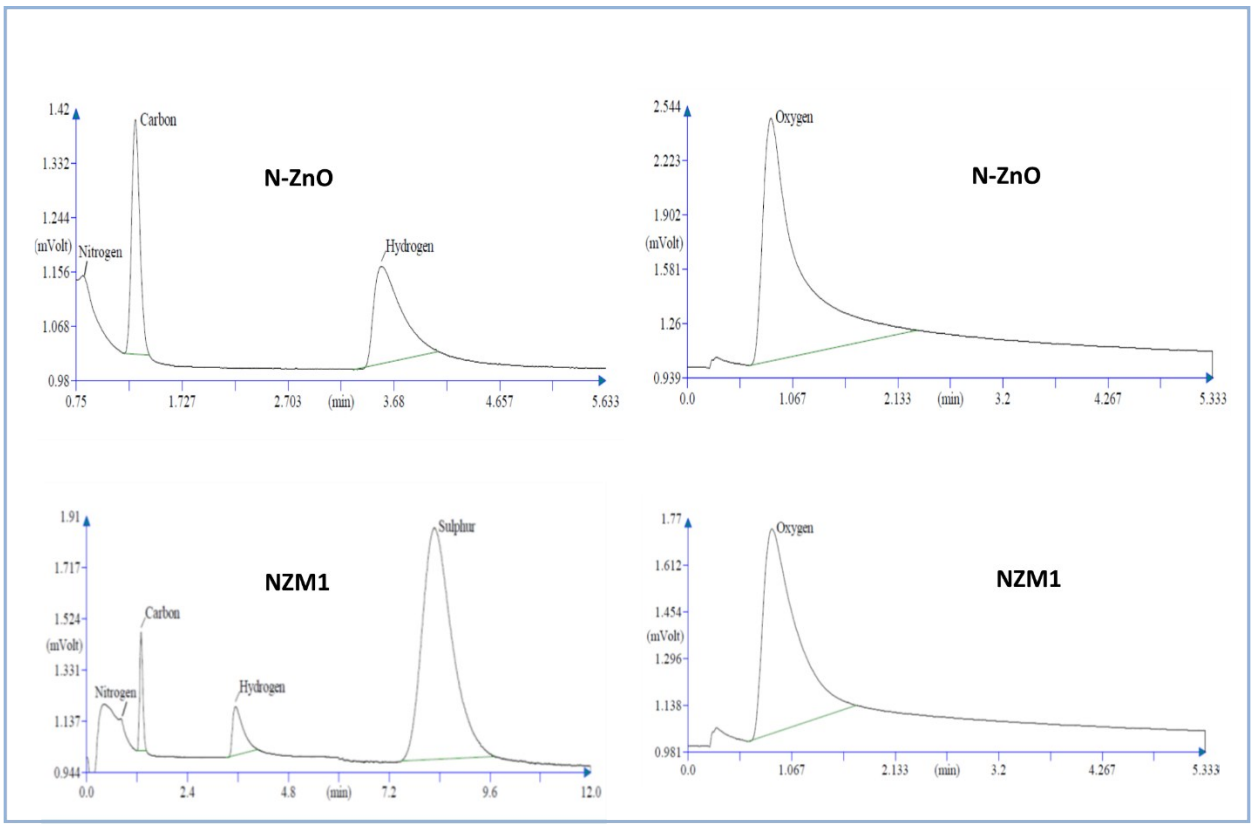


Figure S3. CHNSO analysis of N-ZnO and NZM1 heterojunction (representative sample) showing the presence of N, S and O.

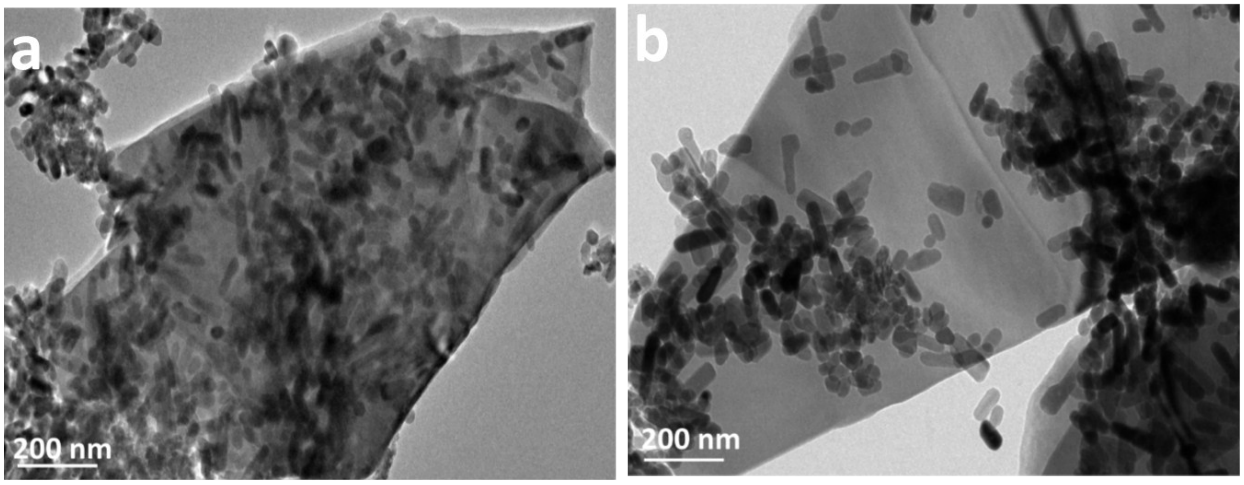


Figure S4. TEM images of (a) NZM2 and (b) NZM3 nanocomposites.