Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Enhanced Photocatalytic activity and Chemical sensor development based on ternary B_2O_3·$Zn_6Al_2O_9$·ZnO nanomaterials for environmental safety

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Supplementary Materials

Figures

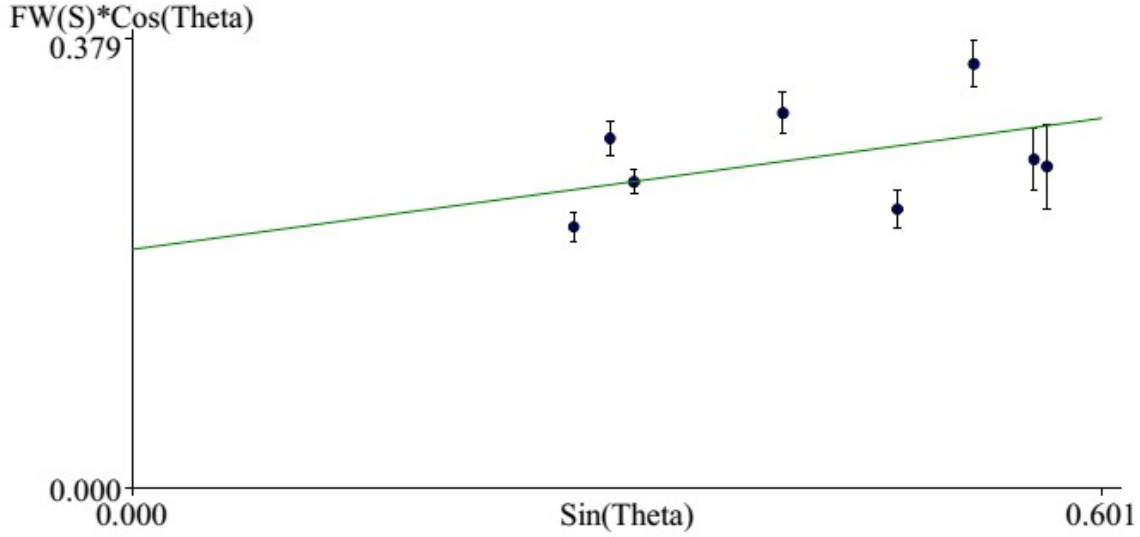

Fig. S1: $\beta_r \cos\theta$ vs. $\sin\theta$ plot from XRD patter

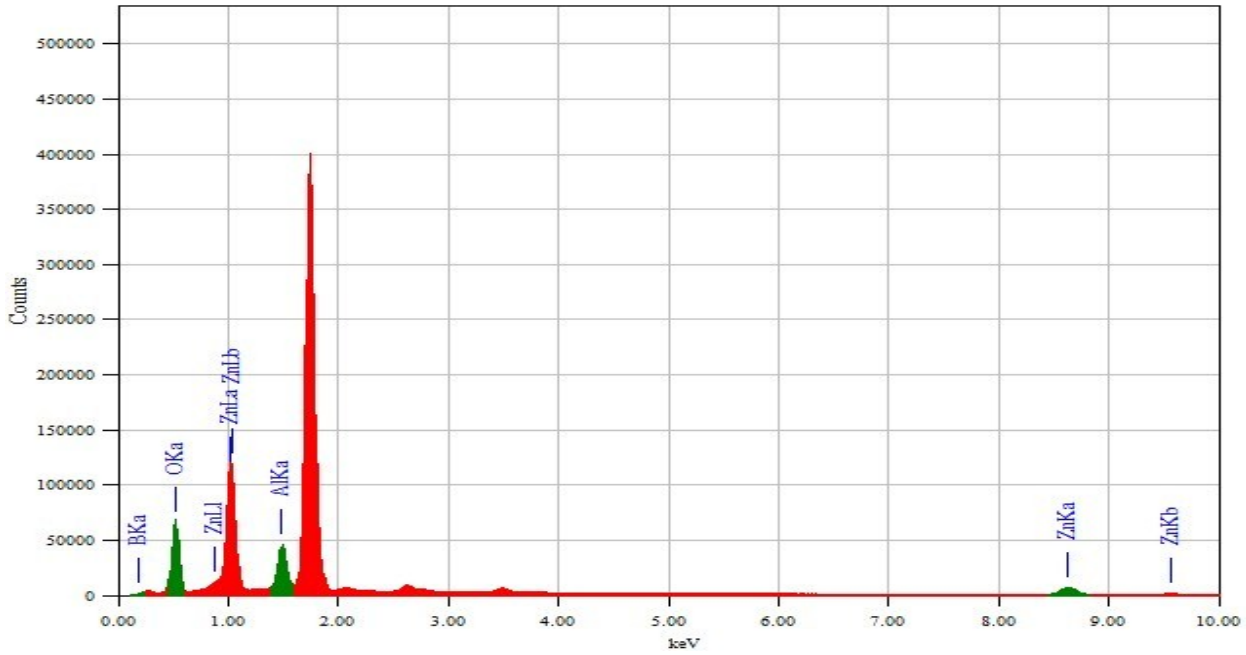

Fig S2. EDS of ternary $B_2O_3 \cdot Zn_6Al_2O_9 \cdot ZnO$ nanomaterials

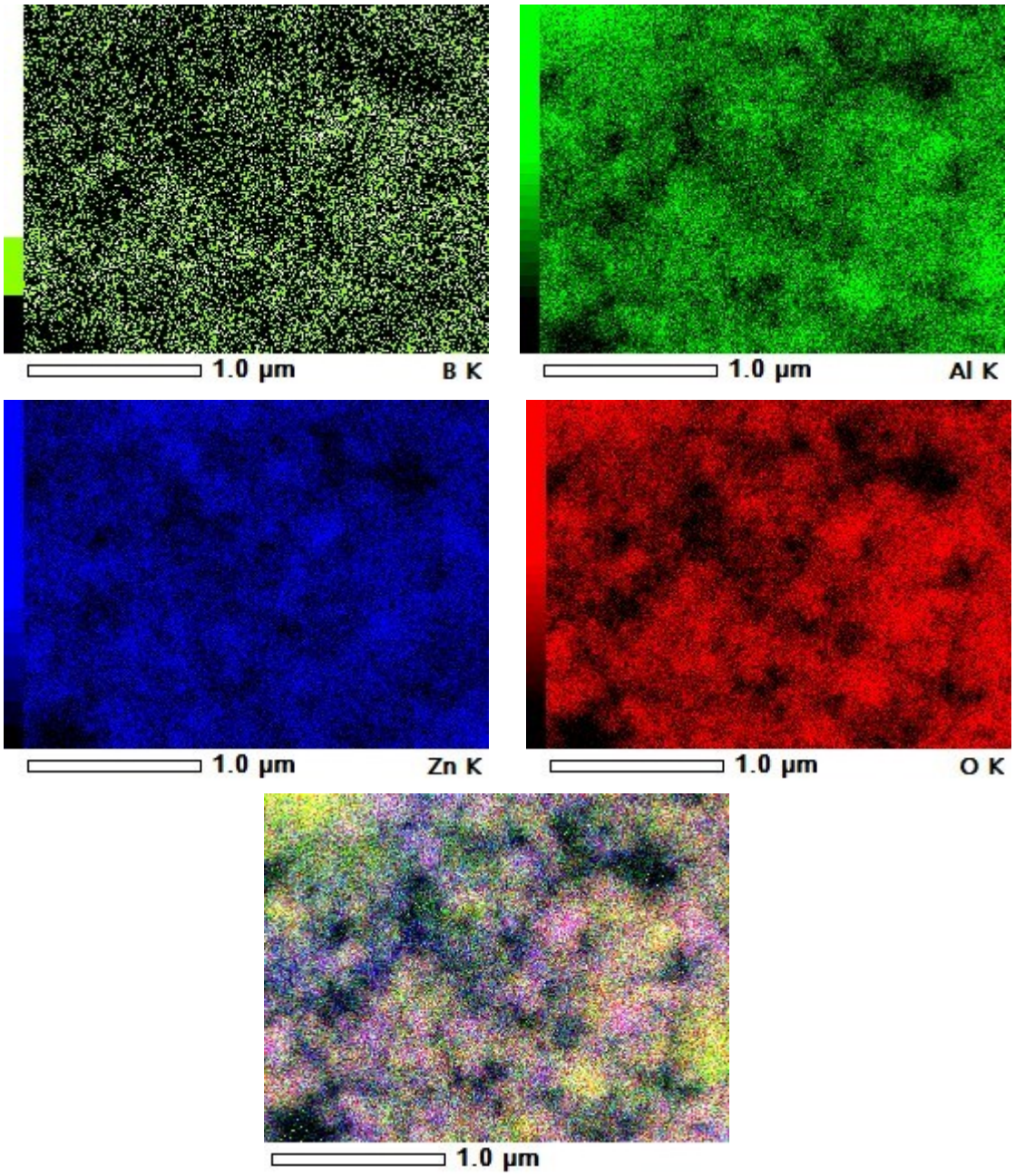

Fig. S3: SEM-EDS mapping of (a) Boron, (b)Aluminum, (c) Zinc, (d) Oxygen, and (e) is the Overlap of all of them

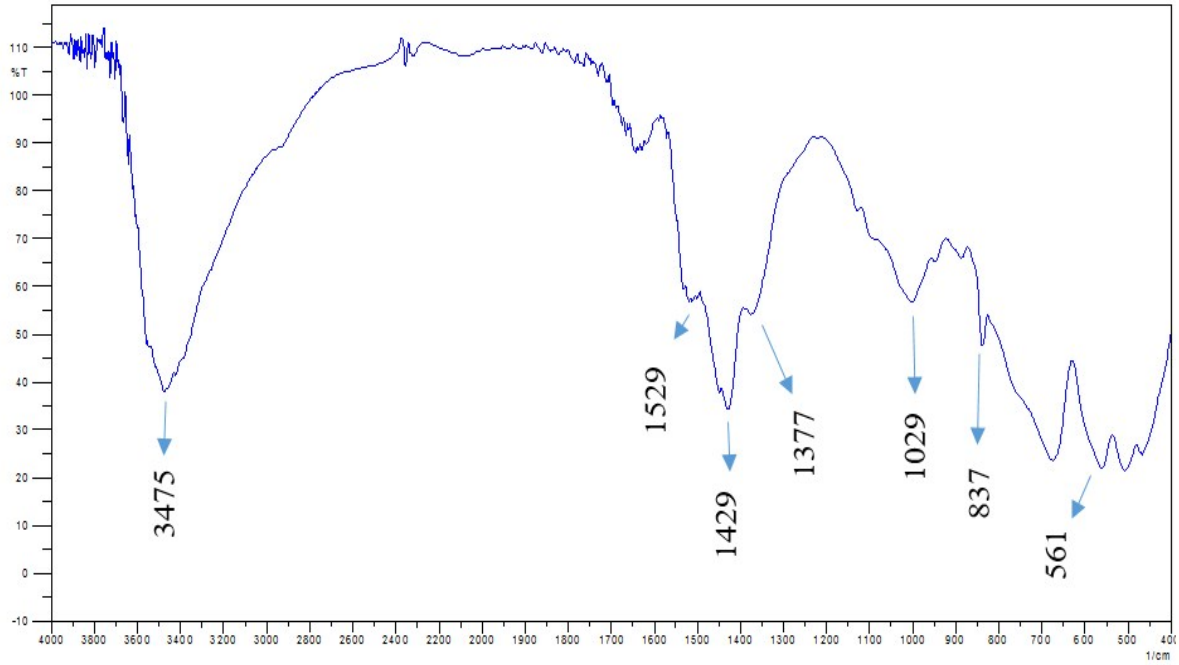

Fig. S4: FTIR spectra of synthesized nanomaterial

Tables:

Table S1: EDS data representation with the atomic and mass percent elements

Element	(keV)	Mass%	Sigma	Atom%
B K	0.183	1.56	0.03	3.95
O K	0.525	34.49	0.07	58.92
Al K	1.486	17.48	0.05	17.71
Zn K	8.63	46.46	0.24	19.42
Total		100		100

Table S2: PL and PLE peaks observed with temperature variance

Calcination Temperature	Method	Observed at Wavelength/nm	Peaks Observed at Wavelength/nm
900 °C	Excitation	250	369, 404, 412, 425, 450, 467, and 482

		300	381, 404, 428, and 451
600 °C	Excitation	250	386, 404, 422, 450, 467, 482, and 492
		300	404, 412, 421, 450, 467, and 482
450 °C	Excitation	250	340, 404, 426, and 450
		300	404, 426, and 450
	Monitor	600	350, 370, and 390