

Supporting Information

Ternary Ag·Eu₂O₃·SrCO₃ nanomaterials enhanced photocatalytic performance of CV dye and implicated in efficient nitrite sensor development

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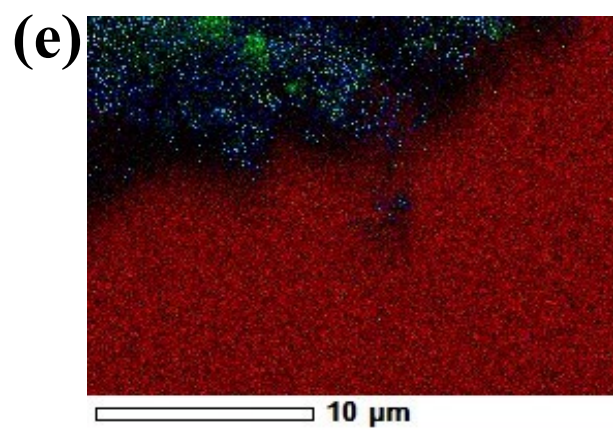
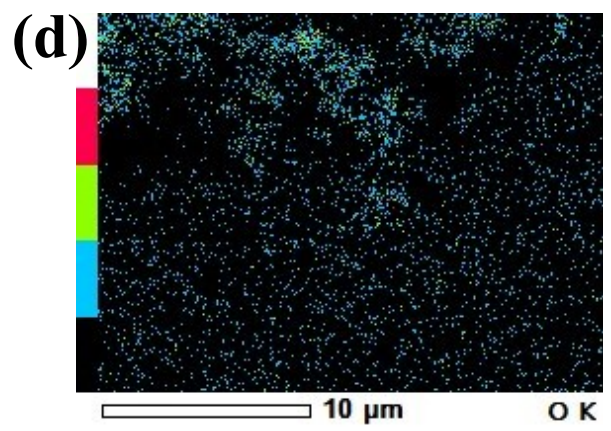
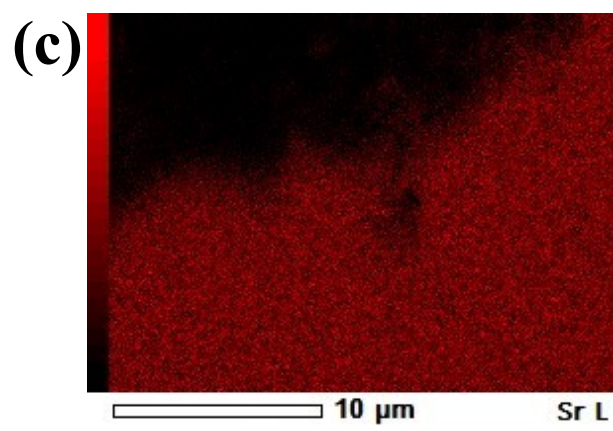
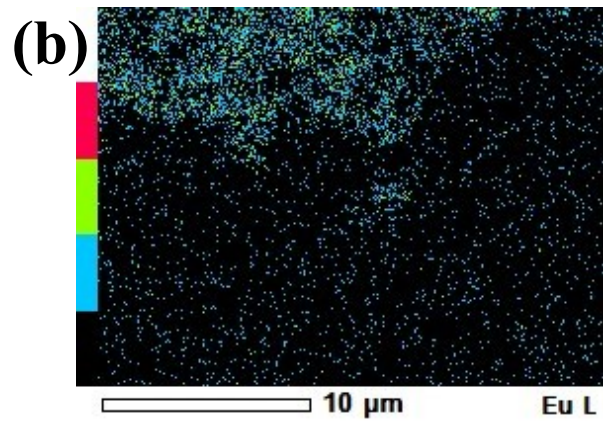
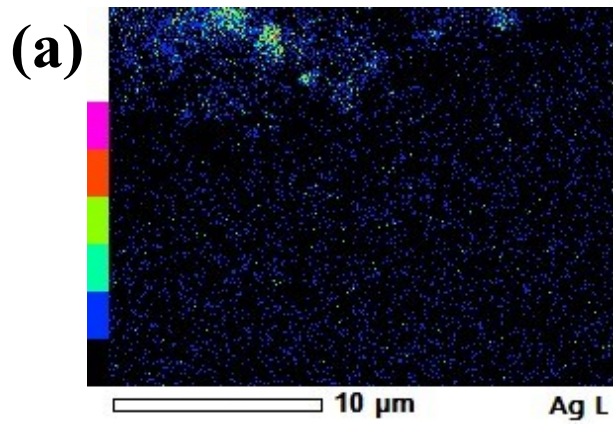


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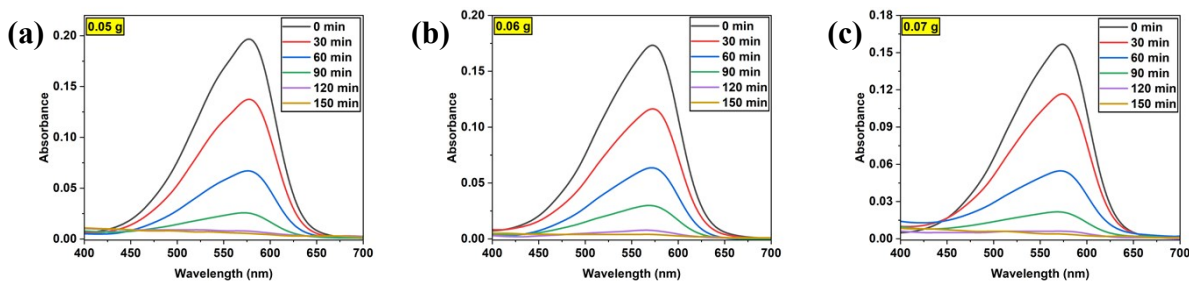


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Table S1. I and RIR value of components (information were listed from MDI Jade 6.5 software)

Component	I value	RIR value
Ag	12459	17.2
Eu₂O₃	8042	12.05
SrCO₃	3821	3.84

Table S2. PL excitation and emission data of Ag·Eu₂O₃·SrCO₃ NMs calcined at 600 °C

Monitored wavelength (nm)	Excitation wavelength (nm)
450	386
500	390
550	386, 465
600	388, 468
Excitation wavelength (nm)	Emission wavelength (nm)
250	386, 471
300	403, 462
350	399, 426, 460
400	473
450	509

Table S3. Values of rate constant (k) and r^2 for dye removal kinetics

Observation	Rate constant (k , min ⁻¹)	r^2	Half-life ($t_{1/2}$, min)
pH 4	0.0068	0.8444	101.911
pH 7	0.0234	0.772	29.615
pH 9.2	0.0267	0.9648	25.955

Table S4. Percentage of adsorption and adsorption capacity calculation related parameters

Adsorbent amount (g)	pH	Dye initial absorbance (A_i)	Dye Initial conc. (C_0 , mg/L)	Dye equilibrium point absorbance (A_{eq})	Dye Equilibrium conc. (C_{eq} , mg/L)	Adsorption (%)	Adsorption capacity (Q_e , mg/g)
0.05	9.2	0.201	5	0.197	4.826	1.99	34.8
0.06	4			0.223	5.547	-10.945	-91.167
	7			0.238	5.92	-18.408	-153.333
	9.2			0.174	4.328	13.433	112
0.07				0.157	3.905	21.891	156.429

Table S5. Antibacterial activities of Ag·Eu₂O₃·SrCO₃ NMs against pathogenic bacteria

Bacteria culture	Diameter of inhibition zone, D_{iz} , (mm)			Diameter of well, D_w , (mm)	Ratio, $R = D_{iz} / D_w$		
	1	2	3		1	2	3
<i>Staphylococcus aureus</i>	19	19	20	6	3.17	3.17	3.33
<i>Klebsiella pneumoniae</i>	19	19	20		3.17	3.17	3.33
<i>Pseudomonas aeruginosa</i>	19	19	19		3.17	3.17	3.17
<i>Proteus mirabilis</i>	18	19	19		3	3.17	3.17