nanomaterials

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Supplementary Information

Sustainable Synthesis of Cadmium Sulfide, with Applicability in Photocatalysis, Hydrogen Production, and as an Antibacterial Agent, Using Two Mechanochemical Protocols

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The supporting information document contains 8 pages, 6 figures, and 1 tables

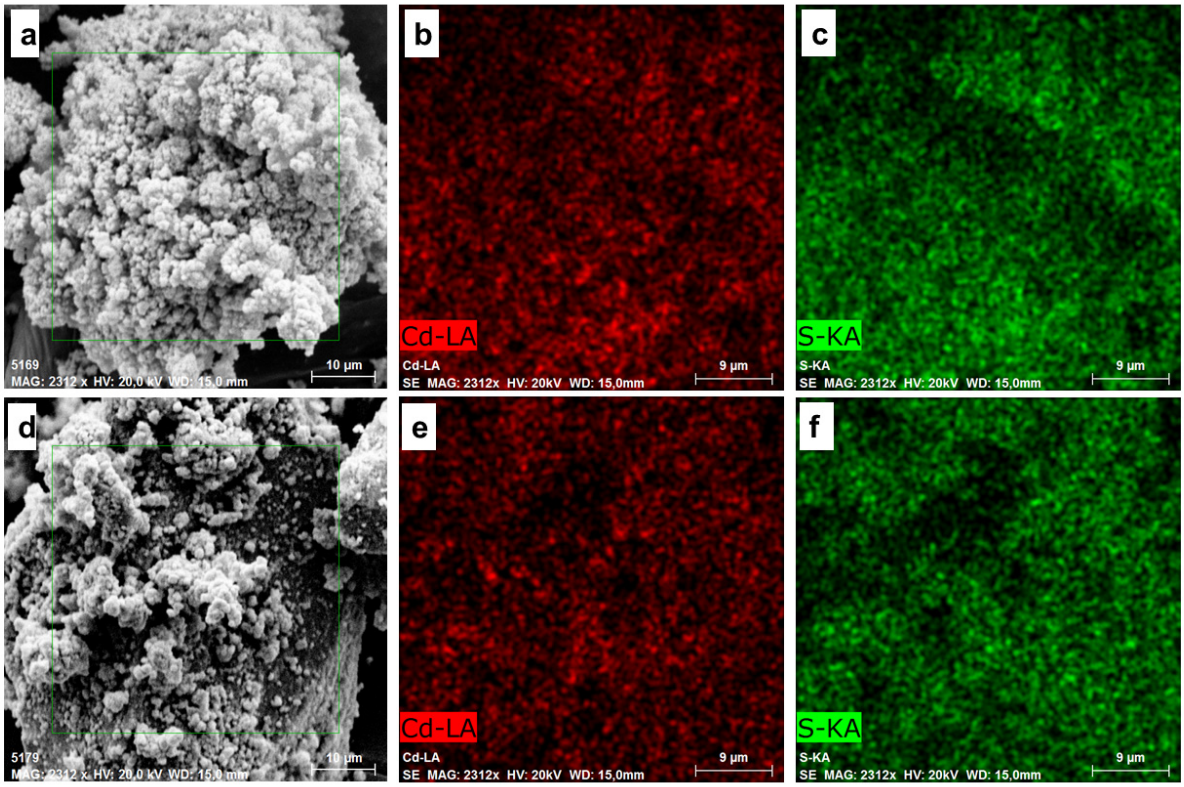

Figure S1. EDS elemental mapping of aCdS (top) and cCdS samples (bottom): (a,d) complex image showing the analyzed are in a green rectangle; (b,e) Cd mapping; (c,f) S mapping.

Table S1. Content of Cd and S in atomic % from distinct areas in each sample according to EDS analysis.

	Cd		S	
	aCdS	**cCdS**	**aCdS**	**cCdS**
Area 1	52.91	52.88	47.09	47.12
Area 2	53.42	54.15	46.58	45.85
Area 3	53.63		46.37	

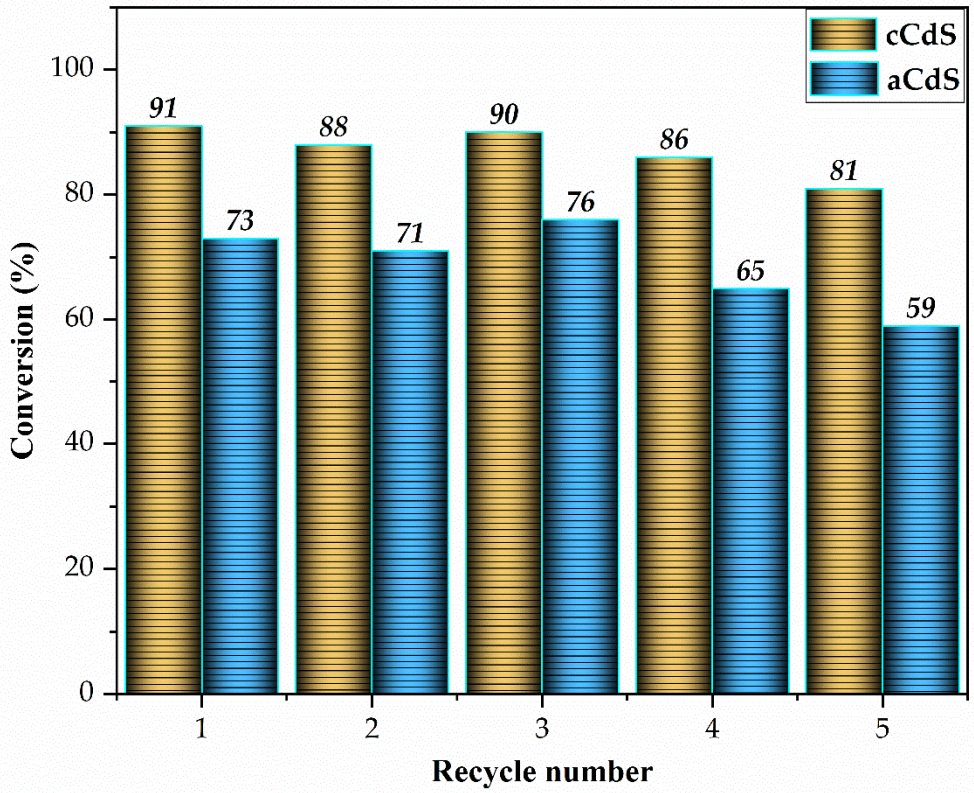

Figure S2. Results of the cyclic test of aCdS and cCdS samples for Orange II.

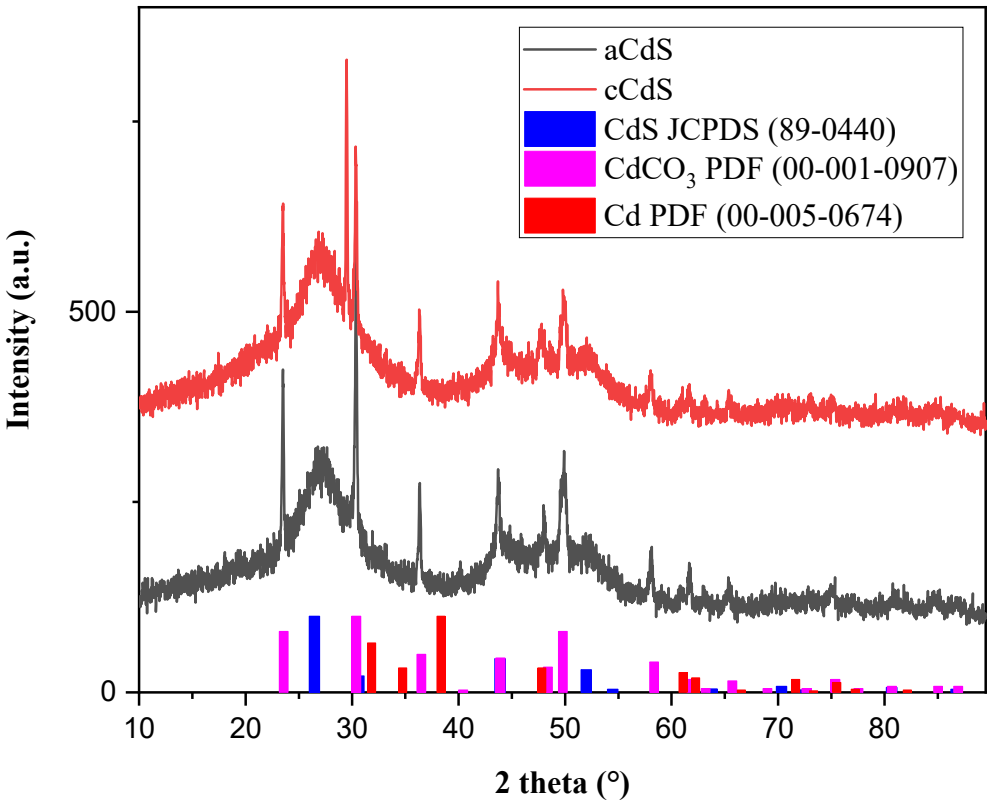

Figure S3. XRD pattern of remained cCdS and aCdS photocatalysts after performing stability tests of catalysts for Orange II dye.

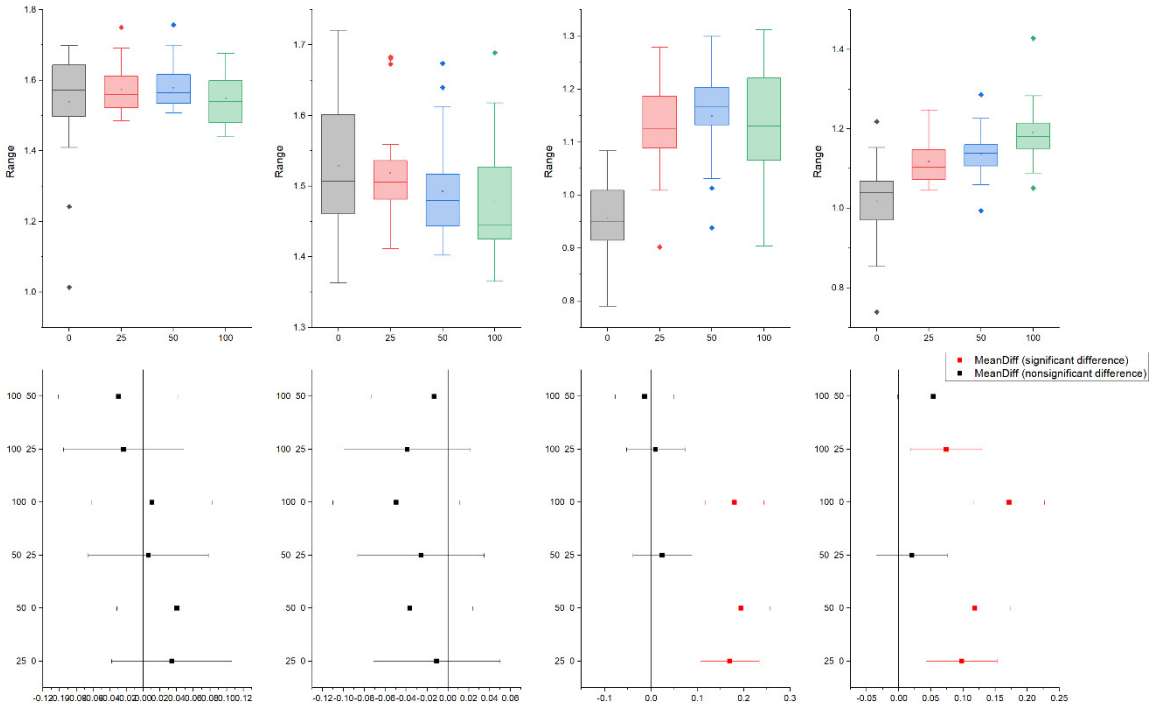

Figure S4. Statistical analysis of results obtained from optical density measurements after 24-hour incubation with nanomaterials or deionized water; in columns, starting from the left side: *S. aureus* with aCdS, *S. aureus* with cCdS, *E. coli* with aCdS, and *E. coli* with cCdS; bottom row presents results from Tukey's test.

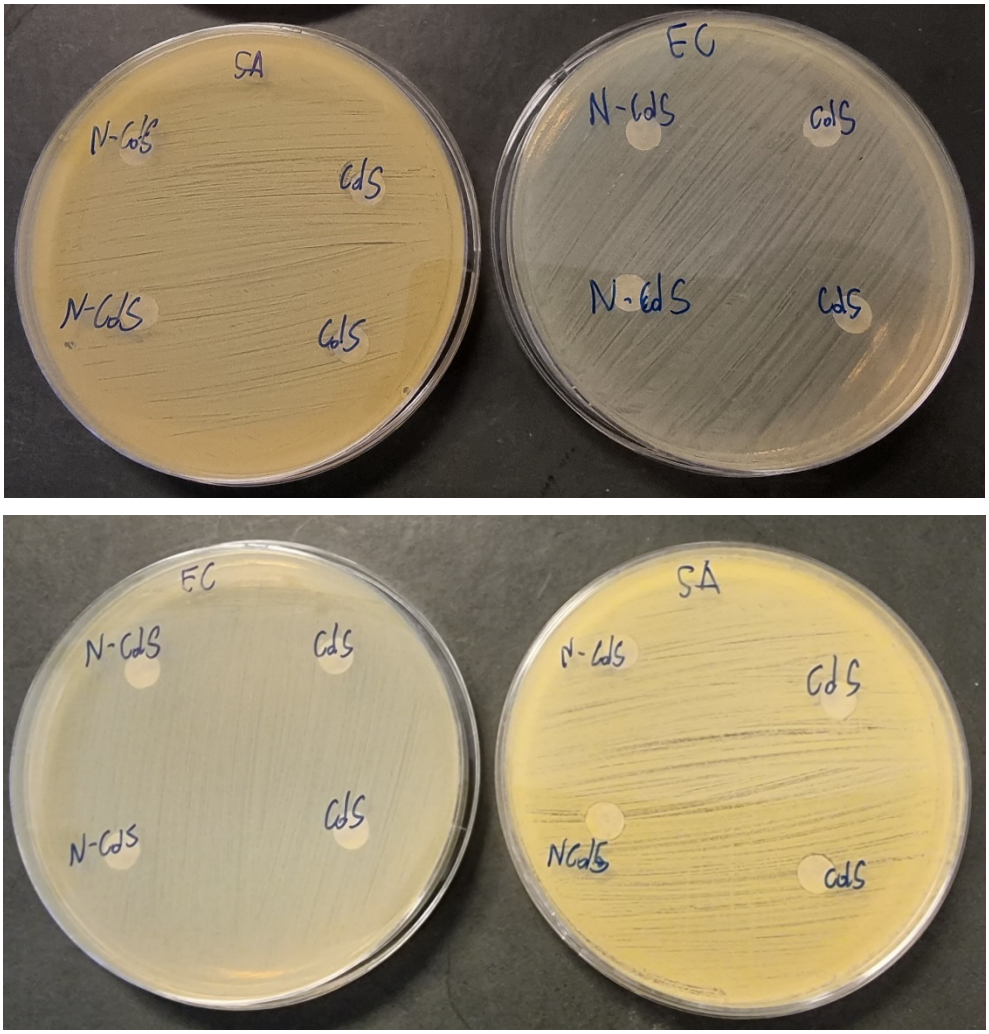

Figure S5. Disk assays for with the produced nanomaterials; EC – *E.coli*, SA – *S. Aureus*, N-CdS – cCdS, CdS – aCdS.

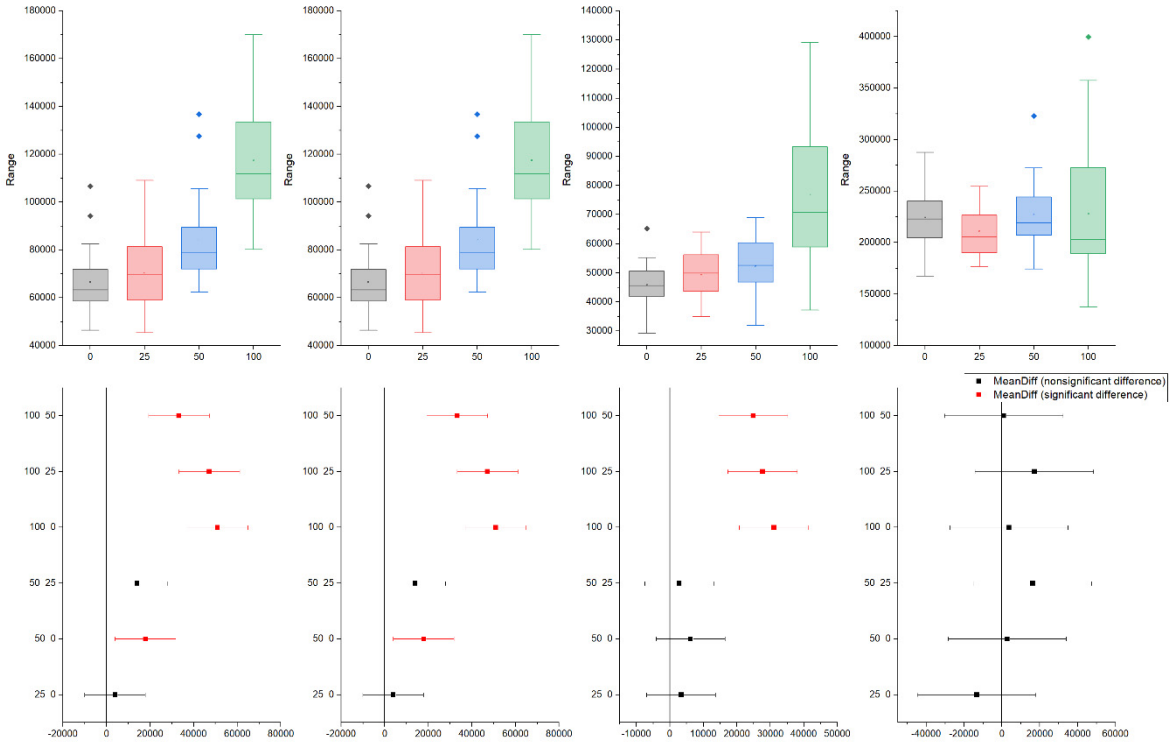

Figure S6. Statistical analysis of results obtained from resazurin assay (respiration) after 24-hour incubation with nanomaterials or deionized water; in columns, starting from the left side: *S. aureus* with cCdS, *S. aureus* with aCdS, *E. coli* with aCdS, and *E. coli* with cCdS; bottom row presents results from Tukey's test.