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## REMOVAL OF TWO INDUSTRIAL DYES FROM AQUEOUS SOLUTIONS USING HYDROTALCITE-LIKE ANIONIC CLAYS AND THEIR DERIVED MIXED OXIDES AS HIGHLY EFFICIENT PHOTOCATALYSTS

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### Abstract

Multifunctional materials based on iron substituted anionic clays and their derived mixed oxides owning specific porous properties and textural characteristics are synthesized, characterized and tested as photocatalysts in the process of the azo-dyes degradation from aqueous solutions. The features of X-ray diffraction patterns point out the modification of the lattice parameters when  $\text{Fe}^{3+}$  is substituted  $\text{Al}^{3+}$  in the brucite like layer.  $\text{N}_2$  adsorption-desorption analysis reveals specific porous properties (surface area and pore volume) for the mixed oxides derived from iron containing anionic clays. The porosity of the samples is the key parameter for defining their high degradation activity of two industrial azo dyes: drimaren red (DR) and nylosan navy (Nyl) from water solutions, under UV irradiation. The results presented here open new perspectives for toxic dyes removal from polluted water by using cost effective and biocompatible materials, type anionic clays.

*Key words:* azo-dye removal, iron mixed oxides, iron substituted anionic clays

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