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MODIFIED POLYESTER FABRIC AS ADSORBENT AND PHOTOCATALYST

Daniela Atanasova, Daniela Angelova, Desislava Staneva, Ivo Grabchev
University of Chemical Technology and Metallurgy, Department of Textile, Leather and Fuels, 1797 Sofia, Bulgaria
Sofia University St. Kliment Ohridski, Faculty of Medicine, 1407 Sofia, Bulgaria
d.atanasova@uctm.edu

Polyester fabric was modified with blend of chitosan and fluorescent chitosan, resulting in three distinct samples with varying concentrations of the latter. These samples were then characterized using an iodometric method to measure the production of singlet oxygen 1O2 under irradiation with visible light. The decolourization of a model solution of a reactive dye was investigated in the presence of the modified fabrics, both in the dark and under visible light. The influence of the concentration of the dye solution and the amount of fabric on the adsorption and photocatalytic reaction was determined. The mechanism of the decolourization has been proven by determining the isotherm, kinetic models, and thermodynamic parameters. The stability and reusability of the materials as a singlet oxygen generator were also investigated.

Keywords: *polyester fabric, adsorbent, photocatalyst, reactive dye, singlet oxygen*

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