

APPLICATION OF ULTRAVIOLET  
IRRADIATION TO THE DECOMPOSITION  
OF DYES IN AQUEOUS SOLUTIONS

J. PERKOWSKI, M. SZADKOWSKA – NICZE,  
K. BLUS, P. WROŃSKI

**ABSTRACT** *Decoloration of azo dyes by selected advanced oxidation processes under UV irradiation was investigated. Photooxidation in the presence of oxygen, ozone, hydrogen peroxide, as well as hydrogen peroxide and ozone and photocatalytic oxidation with titanium dioxide TiO<sub>2</sub> Degussa P25 was applied. Experiments were performed at room temperature, and the solutions of the following reactive dyes: yellow BK-221, red BK-230, purple BK-253 and black RB5 were investigated. The solutions of the commercial products with concentrations of 100 and 200 mg/dm<sup>3</sup> were used. The low-pressure mercury lamp with power of 15 W and the medium-pressure Hg lamp with power of 8W were applied as the light sources. The decoloration process was analyzed spectrophotometrically in the UV-VIS range by a Perkin Elmer Lamda 750 spectrophotometer.*

**Keywords:** *photochemical processes, photocatalysis, decoloration, azo dyes*