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**Modified TiO₂ thin films prepared by spray pyrolysis deposition
and their photocatalytic activity**

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Nowadays TiO₂ nanoparticles are recognized as active photocatalyst for degradation of organic pollutants under UV radiation. However, direct application of the nanoparticles for water treatment is limited because their separation from water is difficult. From this point of view promising is use of fixed onto substrate photocatalyst.

The aim of the research was elaboration active modified TiO₂ thin films and determination their photocatalytical properties.

TiO₂ thin films were obtained by spray pyrolysis equipment HolmarcHO-TH-04 using titanium(IV) isopropoxide (TTIP) as precursor, acetyl acetone as stabilizer and isopropyl alcohol as solvent. Different concentrations of TTIP solutions were prepared and various modifiers were added. The thin films were made on the heated glass substrate using air as carrier gas at 2 bar pressure. After spraying the obtained samples were annealed in air at 500 °C temperature for several hours.

The structure and morphology of the thin films were characterized by X-ray diffraction and scanning electron microscopy. Photocatalytical activity was measured by degradation of methylene blue dye under UV irradiation.