PHOTOCATALYTIC OXIDATION OF POORLY BIODEGRADABLE ORGANIC COMPOUNDS PRESENT IN OVERBALANCED WATERS FROM MUNICIPAL WASTE LANDFILLS

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Abstract
The contribution deals with the study of photocatalytic oxidation as one of the stages of treatment of overbalanced wastewater from municipal landfills. This is either complete oxidation of organic compounds that are poorly biodegradable to carbon dioxide, water and inorganic salts or partial oxidation to products which are readily degradable in biological sewage treatment plants. Model wastewater containing humic substances and real sample of wastewater from the landfill Nasavrky were used in experiments. Anatase type TiO_2 photocatalyst and efficient LED UV radiation source with a very narrow range of wavelengths of $\lambda = 365 \pm 8.5$ nm were basic parts of the experimental set up. The results showed that by using this technology it is possible to reduce the content of non-biodegradable organic substances in wastewater. The problem remains in process efficiency at extremely high concentrations of pollutants.

Key words:
Landfill Leachate, Humic substances, Photocatalysis, Titanium Dioxide, Anatase