

10th NARECOM –NAnoEnviCz REsearch COmmunity Meeting

13th October 2021 from 2:30 p.m.

**USE OF PHOTOCATALYSIS IN PRACTISE**

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**Air purification at laboratory scale**

*ABSTRACT*

*Air pollution is one of the largest environmental risks for human health. Heterogeneous photocatalysis represents a very effective way of removing air pollution. The aim of our study is to evaluate the efficiency of various process parameters (intensity of light irradiation, air flow rate, relative humidity, or pollutant concentration) on the rate of photocatalytic degradation of pollutants. During light irradiation, very strong oxidizing agents are generated on the surface of the semiconductor photocatalyst, which results in the degradation of both inorganic and organic pollutants.*

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**Ivana Martiniaková**

*(Advanced Materials JTJ):*

**Commercial photocatalytic paints for environmental**

*ABSTRACT*

*At present, the emphasis is on improving overall air quality. One of the promising techniques is heterogeneous photocatalysis*. *Solely P25 in the form of powder is known for its high efficiency in various photocatalytic reaction systems, but with the impossibility to use in real applications. Photocatalytic coatings represent a special system that can connect TiO2 nanocrystals on its surface so that their efficiency is maximized. Most of the experiments showed that the commercial photocatalytic coating achieved higher performance, either in its effectiveness in degrading various air pollutants or in its durability, as well as in its better reaction selectivity. In our study was shown that the use of commercial coatings opens a new green way for remediation of environment.*