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Artificial Photosynthesis for Industrial Air Pollution Reduction and Cancer Prevention**Mostafa Tahmasbi**

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Climate change, industrial air pollution, and the rising incidence of cancer represent interconnected global challenges requiring innovative and sustainable solutions. This study introduces an artificial photosynthesis-based system designed to reduce industrial air pollutants while simultaneously contributing to cancer prevention through environmental and public health improvement. The proposed technology mimics natural photosynthesis by utilizing advanced catalytic materials and optimized light spectra to convert carbon dioxide and harmful gaseous pollutants into oxygen and environmentally benign by-products.

The system integrates intelligent light-emitting diode (LED) technology and environmental sensors to monitor air quality parameters in real time. By reducing concentrations of carbon monoxide, carbon dioxide, and volatile pollutants, the technology aims to decrease oxidative stress and carcinogenic exposure associated with polluted environments. In addition, the optimized light spectrum is designed to support biological regulation mechanisms that may help control abnormal cellular proliferation, thereby contributing indirectly to cancer risk reduction.

This innovation aligns with global climate change mitigation

strategies by lowering greenhouse gas emissions, promoting clean energy utilization, and supporting sustainable urban and industrial environments. The proposed artificial photosynthesis system offers a multidisciplinary approach combining environmental engineering, clean technology, and public health science. The study highlights the potential of artificial photosynthesis as a scalable, eco-friendly solution to address air pollution, climate change, and health-related challenges simultaneously.

Biography

Mostafa Tahmasbi is an independent researcher and innovator from Iran specializing in Environmental and Biomedical Innovation. His research focuses on the development of artificial photosynthesis technologies for reducing industrial air pollution and exploring their potential role in cancer prevention and public health improvement. With a strong interdisciplinary approach, Tahmasbi combines concepts from environmental science, sustainable technology, and biomedical research to address global challenges related to pollution and human health. His work aims to promote cleaner industrial practices and advance innovative solutions that contribute to a healthier and more sustainable future. Tahmasbi is actively engaged in scientific discussions and international collaborations that encourage environmentally responsible technologies and biomedical advancements.