

Photocatalytic Disinfection for Bio & Chemical Hazard Removal From Air, Water and Solid Surfaces

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Extended Abstract:

Due to nature evolution and human activities on and around the earth, human beings are facing more and more serious threats due to pathogens and persistent chemicals in the air, water and soils. Photocatalysis has been shown to be capable of inactivate the pathogens and degrade the persistent chemicals. However, despite the massive research efforts in the last 30 to 40 years, photocatalysis still have not yet gained wide applications. Using work performed in my and other research groups, I will present some recent advances of photocatalytic bio- and chem-hazard removal. Specific topics include development of solar-active photocatalysts, ultraviolet- vs. visible- light systems, photoreactor modeling and design, current limitations as well as some suggestions for future directions.