

Backed By Science

There have been numerous scientific studies, research and applications using PCO technology.

“One effective method to destroy dilute concentrations of organic and chlorinated organic pollutants in air is heterogeneous photocatalytic oxidation (PCO), which uses a semiconductor catalyst such as TiO₂ and near-UV radiation to decompose contaminants...” “The large number and variety of chemicals successfully treated by PCO indicates potentially broad range of applications.”

John L. Falconer, Ph.D. Professor of Chemical Engineering University of Colorado

“Photocatalysts for the destruction of indoor air pollutants, including VOC’s and gaseous inorganic pollutants such as nitrous oxides, carbon monoxide, and hydrogen cyanide...”
(Heller, 1996).

“Reports of tests show the technology capable of rapidly destroying toxic components of tobacco smoke such as formaldehyde, acrolein and benzene.”

Taken from the American Lung Association webpage January 24, 2001

“...The PCO technique destroys pollutants in both air and water...”

NREL National Renewable Energy Laboratory

“...Carbon 13 labeled ethanol (CH₃(¹³)CH₂OH) was absorbed on the catalyst and photocatalytically oxidized...”

Darrin S. Muggli; Sheldon A. Larson; John L. Falconer Journal of Physical Chemistry 1996

“...purification of air emissions contaminated with toluene via the heterogeneous photocatalytic oxidation (PCO) process...” “...Experimental results indicated that near to 100% conversion ratio of toluene are achieved...”

Chung-Hsuang Hung Photocatalytic Decomposition of Toluene Under Various Reaction Temperatures.

“...Photocatalytic oxidation (PCO) , a relatively new technology, shows promise for economically controlling hazardous air pollutants and volatile organic compounds from smaller sources, such as waste water treatment plants, dry cleaning facilities, painting facilities, carbon regeneration plants, air-stripping towers, soil venting processes, hazardous waste incinerators, and municipal landfills...”

Melanie Louise Sattler Method for Predicting Photocatalytic Oxidation Rates of Organic Compounds

“... Potential applications for using titania-based materials as photocatalysts include...Destroying volatile organic compounds (trichloroethylene, benzene, formaldehyde, etc.). Reducing air pollution in homes and industries such as dry-cleaners, painting booths, and printers..”

Marc A. Anderson Professor Water Chemistry Program and Materials Science University of Wisconsin, Madison

“... In addition to automobile exhaust cleaning, use of environmental catalysts such as titanium oxide photocatalysts is rapidly growing for control of residential environments, e.g., antimicrobial activity and odor control...”

Katsunori Yogo, Interdisciplinary Department, Frontier Science Institute, Mitsubishi Research Institute, Inc.

“...Titanium dioxide is therefore applied for deodorizing, by decomposing substances causing bad odor, and for prevention of air pollution by absorbing and oxidizing...”

Japan Chemical Week August 26, 1999

Those are just a few examples of the vast research that has been and is being done on PCO photocatalytic technology.