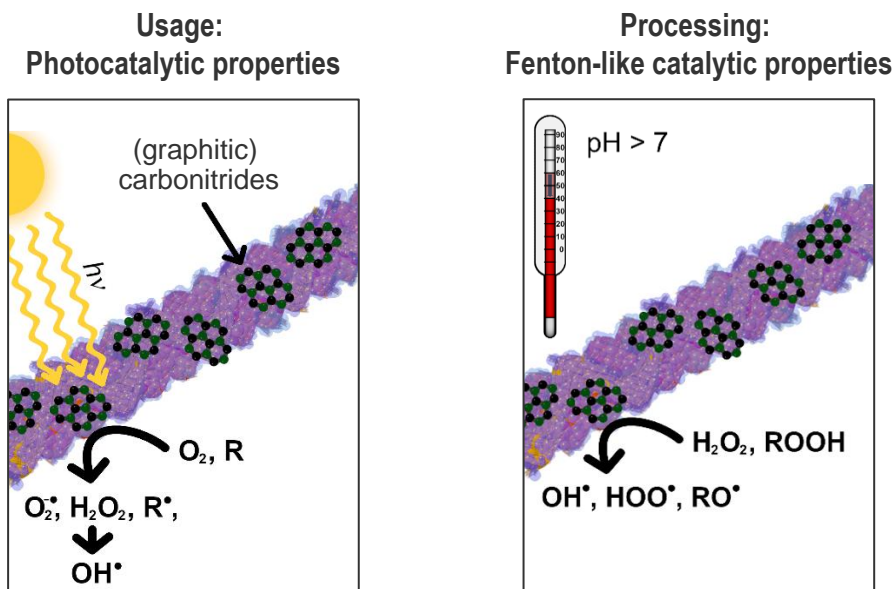


Duocatalytic antimicrobial textile finish for low temperature disinfection (IGF 01F23166N)

Workwear in medical facilities can become contaminated with pathogens during use and must therefore be disinfected. This is currently done using chemothermal processes at high temperatures and high concentrations of peroxide compounds, which puts a lot of strain on the clothing. During use, workwear can quickly become recontaminated. If this goes unnoticed, there is a risk of pathogen transmission.

An antimicrobial textile finish based on environmentally friendly, toxicologically safe carbon nitride, which is effective both during use and during processing through the formation of reactive oxygen species (ROS), was therefore developed in the research project. Two different catalytic mechanisms are active here, i.e. the finish is duocatalytically active: When exposed to light, ROS are formed during use (photocatalytic property of the finish). Since ROS formation only occurs on the textile surface facing away from the wearer, there is no permanent exposure of medical personnel to antimicrobial agents. During aqueous reprocessing of work clothing, the finish catalyzes the formation of ROS from peroxide compounds without thermal activation (Fenton-like catalytic property of the finish). Since ROS formation occurs specifically on the contaminated textile surface, even low concentrations of peroxide compounds are sufficient for germ inactivation. This enables a reduction in temperature and chemical use in the treatment process, which improves textile protection compared to conventional methods.

The research report is available on request from the wfk - Cleaning Technology Institute.



Generation of ROS by duocatalytic, antimicrobial textile finishing for low-temperature disinfection under usage and processing conditions