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CUHK UNVEILS FORMULA AGAINST POLLUTION PROBLEM

A local scientist has come up with a powerful bio-removal method which is promising to help the multi-billion denim industry – one of the major culprits in water pollution – to come clean.

Dr. Kai-keung Mark of the Chinese University of Hong Kong has identified two strains of bacteria which could help tackle the menacing problem of water pollution caused by toxic residues of dyes widely used in denim production.

This patented invention had its world premiere at a leading industrial fair last week (April 3 - 8) at Hannover, Germany.

Dr. Mark's novel bio-removal approach is targeted at the two popular dyes – indigo and sulfur black. "To create the prized 'faded' look, manufacturers traditionally use environmentally-toxic bleaching reagents to reduce these two dyes," Dr. Mark explains.

"The fading treatment known as stone-washing abrades the denim fabric, while insoluble highly-coloured residue of indigo or sulfur black present in waste water from the industry poses a major threat to the environment," he said. The industry is thus in urgent need of new and environmentally-friendly production methods.

Dr. Mark's methods involve two newly-isolated strains of bacteria, H-12 and W-3. H-12 strain offers an environmentally-benign substitute for bleaching and stone-washing of the actual dyed fabric. Manufacturers using indigo can now replace or supplement stone-washing and also treat waste water with the H-12 bacterial cells.

The W-3 strain can help remove sulfur black through bio-adsorption, and at the same time recovers a saleable by-product, sodium thiosulfate.

Dr. Mark's invention was displayed at the Hannover Fair as part of the Hong Kong presentation organized by the Government's Industry Department. As Europe's most prestigious industrial and technological fair, this annual event aimed to offer a comprehensive overview of the state-of-the-art technology. It is hoped that Hong Kong's participation, alongside 6,800 exhibitors from 60 countries, would help to strengthen cooperation and technology transfer between Hong Kong and the rest of the world.

The show attracted more than 380,000 visitors from around the world, many of whom are decision-makers, opinion-leaders and professionals in search of new and better production technology. This year's exhibition focused on Energy and Environmental Technology, Electric Automation Technology, Power Transmission and Control.

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