

# Activated-Carbon Fabric Garments Absorb Viruses, Toxins And Other Deadly Contaminants

Feng Chia University



What can help people resist the SARS virus, or protect them from contaminated water and air, or electromagnetic waves? The answer is a highly absorbent material called “PAN-Based Activated Carbon Fabrics” that was invented at Feng Chia University in Taiwan.

The development of this material, discovered by professor Tse-Hao Ko in 1995, was funded in part by the Taiwan National Science Council. It was licensed in 1996 to Taiwan Carbon Technology Co., CCTeks Co. and CeTech Co.

Polyacrylonitrile (PAN)based activated carbon fibers are superior to pitch-based, cellulose-based, and Phenol resin-based activated carbon fibers for mechanical strength and absorbency.

The proprietary process that transforms activated carbon powder to carbon fiber results in a high density of air holes in the carbon fiber, creating higher absorbency. The PAN-based fiber bundles are oxidized first and then activated in a carbon dioxide atmosphere at a temperature of 1,652 degrees Fahrenheit (900 degrees C.)

“ *Garments containing activated carbon fabrics are 40 percent lighter than other protective clothing worn by U.S. soldiers in Iraq.*

PAN-based activated fibers can be woven into yarn, thread or cloth. This highly absorbent fabric can be used in a variety of ways, including in disposable respirators, medical protective garments that guard against virus transmission, protective gear for nuclear and biochemical attacks, as well as filters for air and drinking water.

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