

**Navigation Links**

- Biology News
- Medicine News
- Biology Products
- Medicine Products
- Biology Definition
- Medicine Definition
- Biology Technology
- Medicine Technology
- Biology Dictionary
- Medicine Dictionary

**Biology Navigation**

- AIDS/HIV
- Bioinformatics
- Biotechnology
- Biochemistry
- Cancer
- Cell Biology
- Developmental Biology
- Ecology
- Environment
- Evolution
- Food Technology
- Gene
- Genetics
- Genomics
- Health/Medicine

**Medical Navigation**

- Abortion
- Aches
- ADHD
- Addiction
- Alcohol
- Allergy
- Alternative Medicine
- Alzheimer's Dementia
- Anxiety/Stress
- Arthritis
- Autism
- Bacteria
- Blood
- Bird Flu/Avian Flu
- Bones

HOME >> BIOLOGY >> NEWS **M**

## &#8203;NTU spin-off achieves breakthrough with innovative multifunction membranes

Date:9/11/2014 [Outline] [RSS & Subscription]

A young startup at Nanyang Technological University (NTU) has developed a first-of-its-kind multifunction water filtration membrane. With its expected cost savings and superior performance, the new invention has the potential to render current membranes in the water industry obsolete.

This made-in-NTU membrane lasts twice as long when compared to conventional membranes, is highly resistant to breakage, and has anti-bacterial and anti-biofouling properties. Another groundbreaking characteristic it allows for an unprecedented flow rate of at least ten times faster than current water filtration membranes.

Developed by NTU start-up Nano Sun, at the centre of this breakthrough multifunction membrane is a patented titanium dioxide nanotechnology. Titanium dioxide nanoparticles are proven to kill bacteria and to break down organic compounds in waste water with the help of sunlight or Ultra Violet (UV) rays.

Invented by Associate Professor Darren Sun, from NTU's School of Civil and Environmental Engineering, the startup is cofounded by Adjunct Professor Wong Ann Chai from NTU's Nanyang Business School, formerly an investment banker from DBS Bank and Normura Singapore.

Despite Nano Sun being only two years old, it has an valuation of S\$80 million, due to the industry's recognition of the immense potential of the new technology that can help to solve some of the most critical problems faced by the water industry.

"With more of the world's population moving into urban cities and generating more wastewater, there is a real need for cost-effective technology. Traditional polymer-based water filtration membranes are faced with issues such as fouling and high breakage, while the developing countries with high industrial output are generating wastewater which is increasingly harder to treat."

"What the world needs and what we have developed - is a breakthrough technology which can turn large volumes of polluted or untreated

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Page: 1 2 3

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