



NANOFILM

Separation through Integration

ABOUT NANOFILM

Nanofilm is a Sydney based business in the field of microfiltration, ultrafiltration, nanofiltration and reverse osmosis technologies.

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Nanotechnology at work

Nanotechnology is an emerging scientific field creating materials, devices, and systems at the molecular level. By being able to work at this ultra-small scale, nanotechnology is being used to deliver innovations in industries including clean energy, environment, health and personal care, electronics, transport, construction, telecommunications, manufacturing and mining.

Pure, clean water for the sunburnt country

Australia is the driest inhabited continent on Earth with just under three quarters of the country either desert or a semi-arid zone. The title of the Sunburnt Country is apt as variable climatic conditions, including periodic yet often long-lasting droughts, are a part of the way of life.

In recent years, a combination of increased water usage and lower rainfall in Australia has caused a noticeable drop in city and town water supply levels. Since 2006, to increase the levels of potable fresh water, seven large scale desalination plants have been built or approved for construction by State Governments. As part of this desalination process, nanotechnology is being applied to water technologies to help secure cheap and reliable clean water sources for the future.

NSW based company Nanofilm has taken the science of membrane separation and applied it to their range of wastewater, desalination and related water separation membrane technologies, including nanofiltration membranes based on nanotechnology.

Nanofiltration is a relatively recent membrane water purification process. Nanofiltration and reverse osmosis membranes (membranes with pores the size of billionths of a metre) are typically used for filtration of particularly dirty or salty water, to yield clean, high quality water. These membranes are also well suited for recycling used and waste waters for industrial and domestic reuse.

Nanotechnology is used in different stages of the membrane development, with certain membranes also having thin film nanocoatings which prevent deposits of biological materials in the water, and slow down biofilm growth which could block the pores.

With the technological advances, increased understanding, improved performance and reduced cost through use of the membranes, Nanofilm is using nanotechnology to help increase Australia's fresh water supply.