



THE UNIVERSITY OF  
**TOLEDO**  
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*seeks partner to license*

## **Anti-Biofouling Nanocomposite Polypropylene Fibers**

Membrane filtration technologies offer great promise to meet the growing need and increasingly stringent regulatory requirements for potable water production. However, biofouling of the membranes in the treatment of water by reverse osmosis membrane filtration is a significant problem. Membrane fouling reduces membrane performance and raises cost through loss in flux, increase in pressure, and cleaning frequency. Modifying the reverse osmosis membranes is nearly impossible as these must have specific compositions in order to maintain desirable properties. At present, most research and development in the area of biofouling prevention has focused on pretreatment of the feed water, improved cleaning solutions, cleaning procedures, and fouling resistant membranes. The membrane is usually enveloped around polymeric feed spacers, therefore a method has been developed to make the polypropylene polymeric spacers biofouling resistant. The method involves activating and adding copper/silver (for the anti-biofouling feature) in a way that does not require melting of the polymer.

The University is seeking a company interested in utilizing this method of producing biofouling-resistant feed spacers for reverse osmosis filters.

### **Applications:**

1. Reverse osmosis water filtration devices
2. Other water filtration, containment, or treatment systems

### **Advantages:**

1. Biofouling prevention/reduction
2. Decreased costs associated with chemical additions/storage
3. Decreased downtime for filter cleaning/replacement
4. Method allows for treatment of existing PP sheets
5. Melting of the polymer is not necessary
6. Utilizes readily available and cost effective materials

**This invention is patent pending**

## **Contact**

The University of Toledo  
Office of Research Development  
MS 1034  
3000 Arlington Avenue  
Toledo, Ohio 43614

Phone: 419-383-6963

E-mail: [stephen.snider@utoledo.edu](mailto:stephen.snider@utoledo.edu)

