

# Functionalized Activated Carbons for Environmental Applications

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TECHNOLOGY READINESS LEVEL

4-7

## Seeking

Investment | Licensing | Research

## Keywords

- activated carbon
- perchlorate
- oxyanions

## Researchers

### Fred Cannon

Professor of Civil and Environmental Engineering

[Online Bio](#)

### Nicole Brown

Associate Professor of Wood Chemistry

[Website](#)

## Originating College

College of Engineering

## Office of Technology Management Contact

Swope, Bradley  
bas101@psu.edu  
814-863-5987

## Technology Summary

The present invention is an activated carbon material for removing a contaminant from a liquid. Multiple carbon grains can be used to create a contactor that is able to reduce perchlorate from 20 parts per billion to less than 4 parts per billion. This contactor can remove a variety of species from water including anionic species, oxyanions, perchlorate, arsenate, arsenite, chromate, sulfate, and others. In addition, this contactor may also remove organic species such as natural organic matter, endocrine disrupting compounds, pharmaceutical products, ibuprofen, and DEET. This carbon material has numerous applications in the environmental and industrial fields.

## Application & Market Utility

Chemical contamination of water results from abandoned waste disposal sites, leaking storage tanks, and mining. Chemical contaminants include oxyanions (perchlorate, sulfate, sulfite, nitrate, and nitrite) which are difficult to remove due to kinetic and thermodynamic properties. High sulfate concentrations are present in acid mine drainage creating an environmental hazard. Therefore, there is a need for a material or process that removes low perchlorate/sulfate concentrations from water. The present invention is protected by the U.S. 9,095,840 patent.

## Next Steps

Seeking licensing opportunities.



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