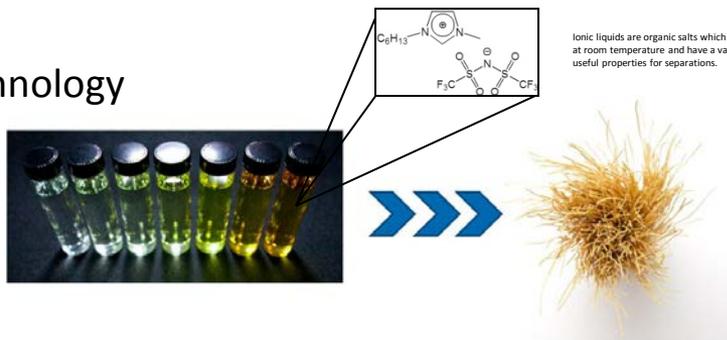


## Technology



Ionic liquids are organic salts which are liquid at room temperature and have a variety of useful properties for separations.

NETL-RUA technology converts any ionic liquid into a high surface area material suitable for gas separations, reducing capital cost.

## Competition



Commercial carbon capture is accomplished with a liquid scrubbing technique which suffers from high capital and operating costs associated with the presence of large amounts of water.

Liquid Scrubbing



Solid sorbents are an alternative to traditional carbon capture techniques, but the methods are still being commercialized and may be plagued by solids handling problems, which could be alleviated through the use of fibers.

Conventional Solid Sorbents

## Intellectual Property

- U.S. Patent #8383026
- U.S Patent Application # 13622001

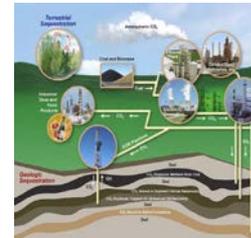
## Market

Natural gas often has substantial impurities including carbon dioxide, sulfur compounds, and water. Ionic liquids fibers may be used to remove these impurities.



Natural Gas Sweetening

Carbon dioxide capture and sequestration is a key component of climate change mitigation. Ionic liquid fibers were originally designed for this application.



Carbon Capture

Separation of materials is critically important in the manufacture of commodity chemicals. Ionic liquid fibers may be optimized for the separation needs of the industry.



Chemical Manufacture

Separation	Market (2020)
N <sub>2</sub> from Air	\$125 Million
O <sub>2</sub> from Air	\$30 Million
Hydrogen	\$100 Million
Natural Gas	\$220 Million
Other	\$285 Million
Total	\$760 Million

Gas Separations Market

## Team

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