



## SYNTHESIS OF AMMONIA USING CYCLE-GENERATED HYDROGEN SULFIDE

[View U.S. Patent Application Publication No. US-2022-0135413 in PDF format.](#)

**WARF: P210007US02**

Inventors: Robert Hamers, Benjamin Bachman

### The Invention

UW-Madison researchers have developed an improved method of synthesizing ammonia from hydrogen sulfide and lithium nitrate. This process, currently embodied in a continuous cycle, leverages hydrogen sulfide reactant cycling via an elemental sulfur intermediate in conjunction with a water-containing or water and carbon-containing feedstock. Ultimately, this new process could be used to produce ammonia at scale while decreasing the amount of external energy required, particularly when compared to the Haber Bosch process.

### Key Benefits

- Potential energy and cost improvements to Haber Bosch
- Reduced carbon footprint for a more green ammonia production route

### Additional Information

#### For More Information About the Inventors

- [Robert Hamers](#)

#### Tech Fields

- [Materials & Chemicals : Synthesis](#)

For current licensing status, please contact Jennifer Gottwald at [jennifer@warf.org](mailto:jennifer@warf.org) or 608-960-9854