



AMMONIA AND NUTRIENT ION RECOVERY FROM MANURE WASTEWATER AND ELECTROSYNTHESIS OF VALUE-ADDED CHEMICALS USING ION SELECTIVE REDOX MATERIAL

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The Invention

UW-Madison researchers have developed a new method for recovering NH_4^+ or K^+ ions from manure wastewater. The method includes contacting a manure wastewater stream containing organic matter and salts with an ion-selective redox material (e.g., a Prussian Blue analog, potassium nickel hexacyanoferrate, or copper hexacyanoferrate). In practice, the ion-selective redox material takes up the ions of interest and upon application of a current, this material is oxidized, resulting in the release of the NH_4^+ or K^+ ions. Further, this oxidation reaction can be paired with a cathodic reaction (e.g., hydrogen evolution reaction or two-electron oxygen reduction reaction). The result of these paired reactions is the coproduction of hydrogen or hydrogen peroxide, respectively.

Additional Information

For More Information About the Inventors

- [Song Jin](#)

Publications

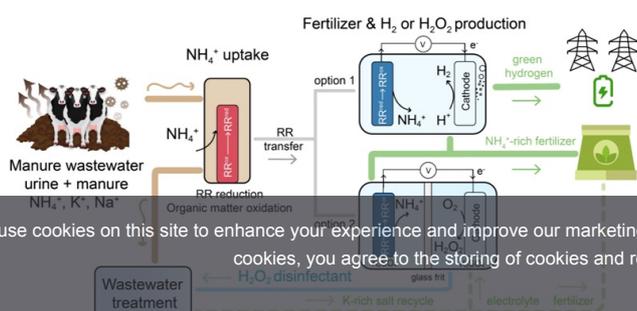
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