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Activated Supported NiFe Nanoparticles for Transformation of PFOS and Associated Chemical Class

Developed particles effectively degrade both linear and branched perfluorooctanesulfonate (PFOS) isomers in aqueous solutions, offering a viable in-situ groundwater remediation solution.

Perfluoroalkyl acids (PFAAs) such as perfluorooctanesulfonate (PFOS) are globally ubiquitous, environmentally persistent, and recalcitrant to typical environmental degradation processes. Transformation of PFOS and associated compounds under conditions amenable for in-situ groundwater remediation use. Material can be used in permeable reactive barriers to capture large diffuse PFOS-associated plumes, which is a huge problem for the military right now.

Researchers at Purdue University have developed particles that can transform perfluorooctane sulfonate and associated compounds in aqueous solutions. The technology described attacks both linear and branched PFOS isomers under conditions that can be used in an in-situ remediation technology. It has shown 55% PFOS degradation including the linear isomer, which is the hardest to degrade by any technology.

Advantages:

-Are able to transform over 50% PFOS in a single day

-Attacks both linear and branched PFOS isomers

Potential Applications:

-Groundwater remediation

-Environmental Engineering

TRL: 2

Intellectual Property:

Technology ID
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Category
GreenTech/Environmental Remediation & Pollution Control

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