Carbon Traps to Deactivate Halogenic Pollutants

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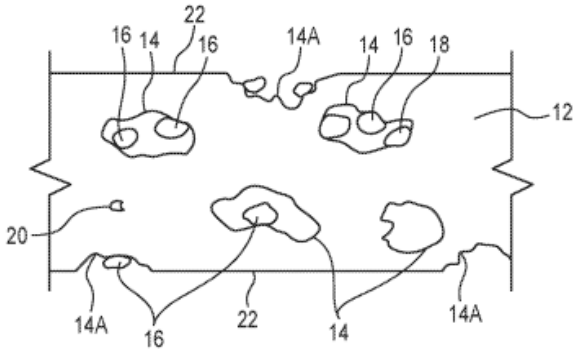
TRL 3



Rendering of the trap's active particles dispersed in a carbon membrane.

Context

Halogenic hydrocarbons are used as solvents, insulators, pesticides, and in many plastics. One type, polychlorinated biphenyls (PCBs), is mutagenic, posing serious health risks to fetuses, babies, and children, and is carcinogenic, posing additional risks to children and adults. Although PCBs are no longer produced in the United States, they are still used in products manufactured before the federal manufacturing ban was enforced. Additionally, they are still dispersed throughout the environment because of improper waste disposal and because the chemicals are slow to degrade. PCBs found in water supplies pose serious health risks, limiting the use of water for consumption or recreation and limiting use food stocks from the water, impacting the local economy, too.

Summary

EPA's "Carbon Traps to Deactivate Halogenic Pollutants," invented by Souhail Al-Abed, John McKernan, and Slawomir Lomnicki, will change how halogenic hydrocarbon pollutant (PCBs, Dioxins, etc.) contamination of lakes and streams is remediated. The technology deactivates halogen containing pollutants by stripping the halogens, making the pollutants unstable and, eventually, harmless. The material can be used in filters and traps dispersed in lakes and streams to remediate drinking water and ecosystems for local wildlife. Benefits include an easy, hands-off way to clean water and sediments contaminated with halogenated pollutants and, eventually, a way to reduce bioaccumulation of those pollutants in food stocks. The technology is an important step forward in securing water cleanliness and food security for human health and the environment.

Potential Applications

- Site Remediation
- Emergency Management
- Water Purification

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