



Ultrafast Synthesis of Activated Carbon

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Overview

Activated (porous) carbon is conventionally produced by pyrolysis (carbonization) of carbon-rich biomass or coal followed by activation/oxidation. Activated carbon produced by this conventional method has limited absorption capacity due to variable porosity and high ash content. Furthermore, conventional production methods require expensive plant infrastructure, temperatures up to 900 degrees Celsius, byproduct recovery and removal, and modification of the resulting carbon depending on the source of biomass/coal.

The Invention

Researchers at the University of Wisconsin System have developed an ultrafast method for the controlled production of various grades of activated and functionalized carbons. The proposed technology is a method to produce mesoporous carbon. The method is simple and can be rapidly carried out in large scale production with common reagents and processing equipment (heat source, acid and carbon source such as cellulose).

Applications

- Water purification
- Catalysis
- Energy storage
- Gas purification
- Gold purification
- Metal extraction
- Water purification
- Medicine
- Sewage treatment
- Air filters in gas masks and respirators

Key Benefits

- Can be carried out in large scale production facility
- Higher absorption capacity and lower ash content of resultant product
- Recovered catalyst is reconditioned and reused

Stage of Development

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Tech Fields

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