Spiral Baffled Cyclone Separator for Particulate Emission Control

Technology reference #1777

Problem Addressed

Particulate matter (PM) owing to their chemical composition and size are a health and environmental hazard. Particulates less than 2.5 microns in size are also known to be carcinogenic. very effective control of diesel PM is necessary. There is therefore a need for pollution control devices for both new and existing vehicles.

Technology

A spiral baffled cyclone separator with a spiral baffle in the body so as to increase the removal efficiency of micron-sized particulates (< 10 micrometer) is disclosed, for vehicle exhaust systems. Small particles owing to their small mass tend to move towards the center of the cyclone due to the dominant drag force. A spiral baffle traps these smaller particles moving in to the center of the cyclone and thus resulting in efficient particle removal from the exhaust

Advantages

1. The device may provide particle removal efficiency of 54% or better for particles less than 7.5 microns. 2. The device is configured to provide a pressure drop of 5 kPa or lower when fitted to a diesel-fuelled vehicle.

Applications

- Pollution control devices for both new and existing vehicles.

Inventors

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Domain

Materials / Energy / Infrastructure

Image

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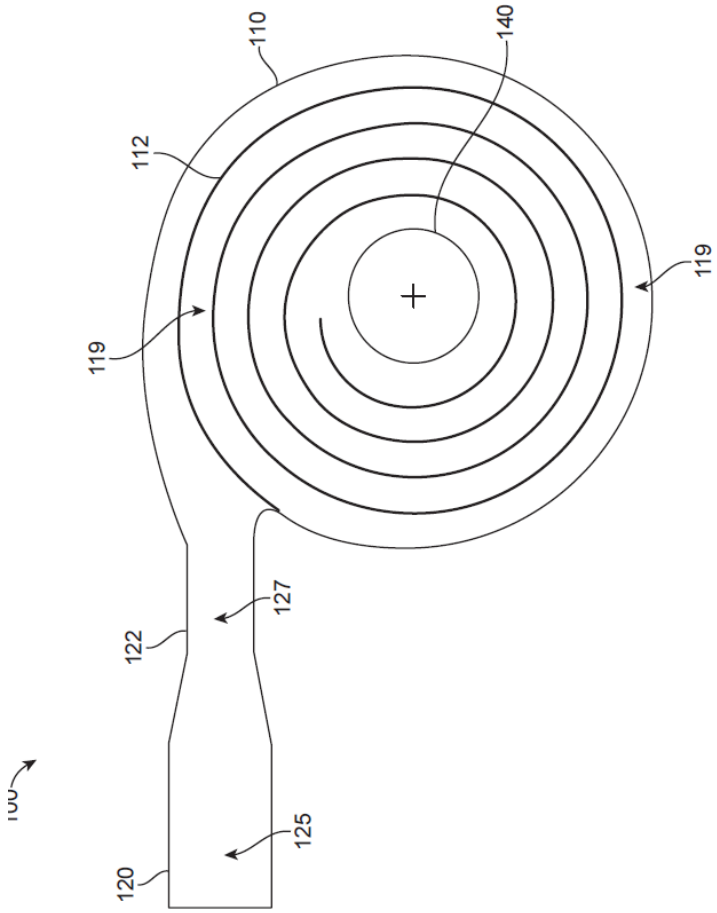

IIT Madras is seeking parties interested in licensing and commercialization of this technology.

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