



Pollution Control using Excited Oxygen

An inexpensive new method for cleaning hot exhaust air

Industrial odour and air pollution
are a nuisance and damage the
environment



Our solution:
hot exhaust air
+ heat-activated ozone
= clean air

Background

Odour and air pollution from industrial activities are a nuisance and negatively affect the environment. While various technologies can remove the pollutants from exhaust gases, they are not applicable to all ranges of pollution concentration, airflow, and temperature. There is an ever-growing demand for more cost-efficient air purification technologies. The major drawbacks of current solutions include high-energy consumption, complexity, and generation of solid waste.

The invention

The present invention relates to a method for cleaning a polluted airstream using the reactive species generated by pyrolysis of ozone. Adding ozone to an airstream passing over a reaction surface above 50 °C triggers formation of reactive species from the ozone, which subsequently counter the pollution. In contrast to current technologies, the reaction surface is not a catalyst. It is therefore possible to use materials already known in the ventilation and construction industries.

Key selling points

- Simple and effective method for cleaning hot exhaust air
- Suitable for small unit installations e.g. rooms, trains or other vehicles
- Can be adapted to a large variety of industrial settings such as animal production, water treatment facilities or biofuel production plants
- The requirement for heat makes the technology especially suitable for cleaning warm exhaust air
- Composed of proven technologies that are widely known in air purification industry
- The technology combines well with other air cleaning technologies, and allows for a large degree of flexibility

Development status

We have demonstrated that the technology removes odor of reduced sulfur compounds.

Intellectual property rights

EP patent application filed 16 June 2016, was updated and filed on 16 June 2017 as PCT/EP2017/064787 in the name of the University of Copenhagen.