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Title: Investigation of mass transfer phenomena affecting emission rate of gaseous compounds from porous solids

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# Investigation of mass transfer phenomena affecting emission rate of gaseous compounds from porous solids

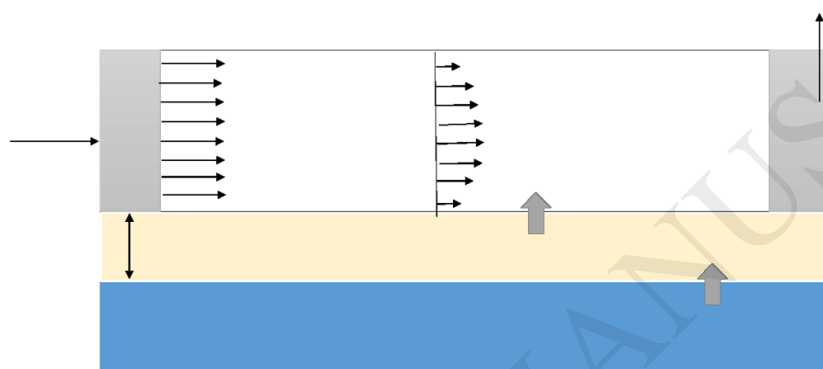
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## Graphical Abstract



## Highlights

- Different hoods currently used for sampling on passive area sources produce results that are not consistent nor comparable
- Mass transfer phenomena occurring inside the hood are not fully understood.
- A new method is proposed to evaluate emissions of gaseous pollutants from solids.
- Emissions from porous media are proven to be affected by airflow rate.
- Mass transfer and its dependency on the sweeping airflow is different to the case of liquid surfaces.

## Abstract

The main objective of this study is to investigate the mass transfer phenomena affecting the emission of acetone from a porous solid. In order to simulate this type of emission in a laboratory-scale and in a repeatable way it was decided to set up a system consisting of a dry solid layer with an underlying wet layer. This type of investigation aims to give a scientific basis for the understanding of the factors affecting emission rates when sampling solid area sources with a wind tunnel system. This in turn is important in order to make results obtained

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