

Particle Separator for Small Wood Fired Furnaces

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Introduction

The work presented here aimed at reducing the concentration of particulate matter within the flue gas of small wood fired furnaces. With a size of typically 80 nm to 180 nm these particles are small enough to be relevant with respect to human health. Furthermore, removing the dust from the flue gas may be a prerequisite before considering other steps of after-treatment, e.g. catalytic reduction of NO_x emissions.

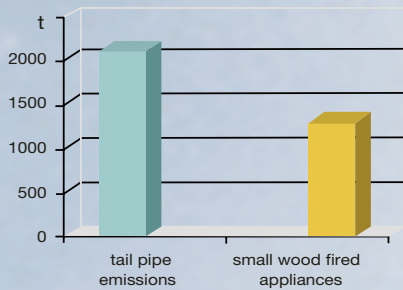
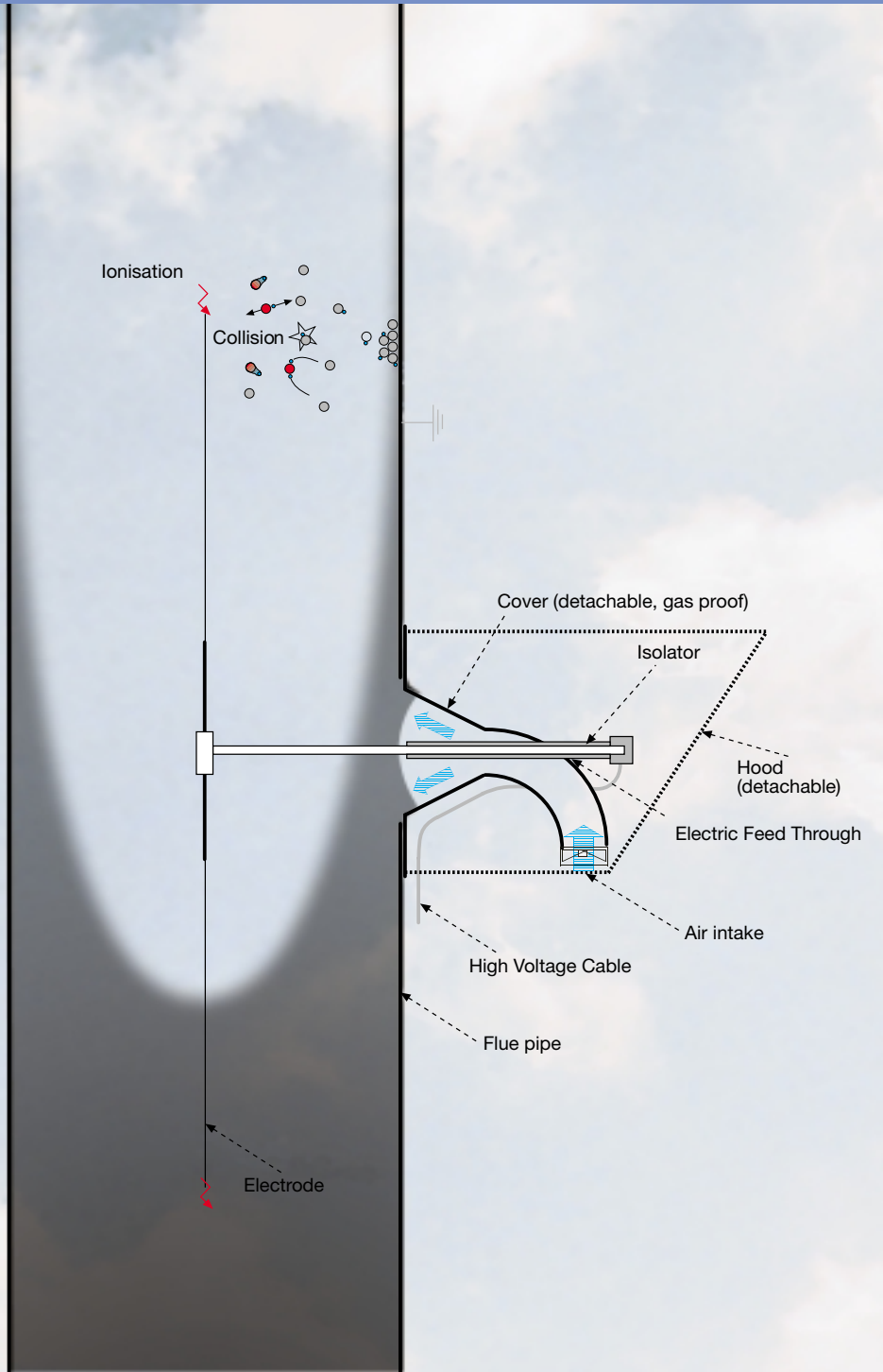
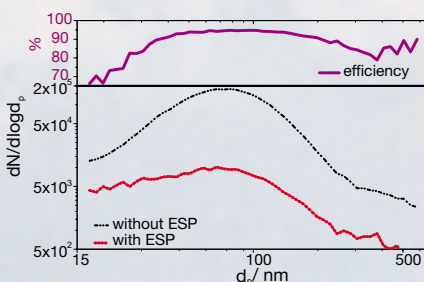
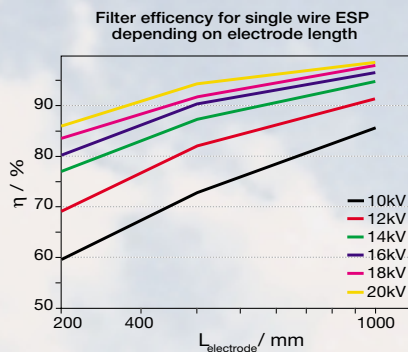


Fig.2: Dust Emission per year in Switzerland: traffic related vs. small wood fired furnaces (1995).

Technical Data / Filter Design

Principle: electrostatic precipitation
 Energy consumption: <10W
 Efficiency: approx. 80% max. 90%
 Electric feed through: Polyetheretherketone (PEEK)
 Electrode: Tungsten wire $\varnothing 0.1\text{mm}$, length 240mm
 Secondary Voltage: approx. 15kV
 Air consumption: approx. $5\text{m}^3/\text{h}$



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