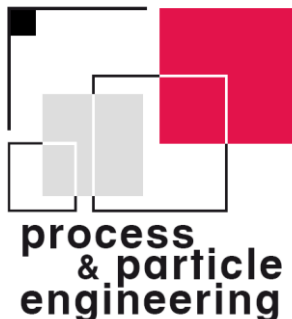


Aerosols from small-scale biomass combustion plants

Introduction

Ingwald Obernberger

IEA Bioenergy Task 32 workshop:
Aerosols from small-scale biomass combustion plants
27th January 2011, Graz, Austria

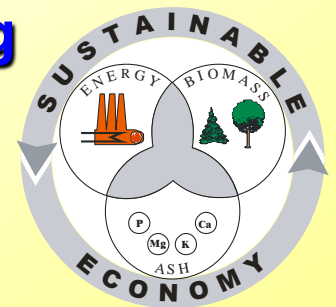


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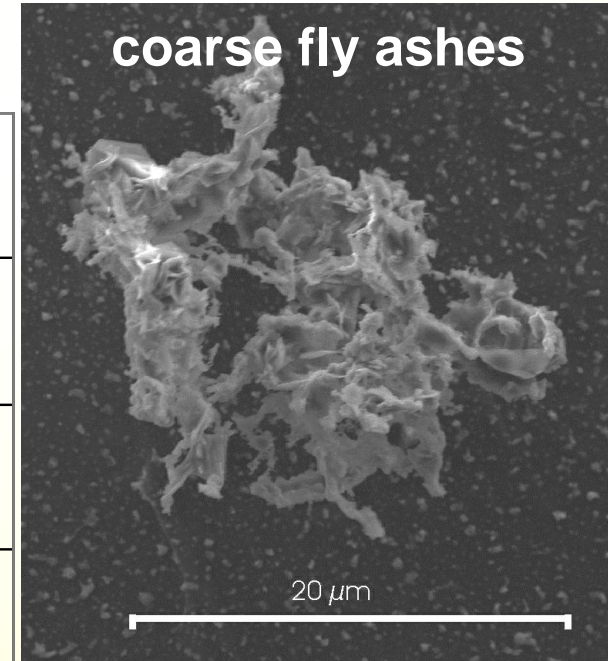
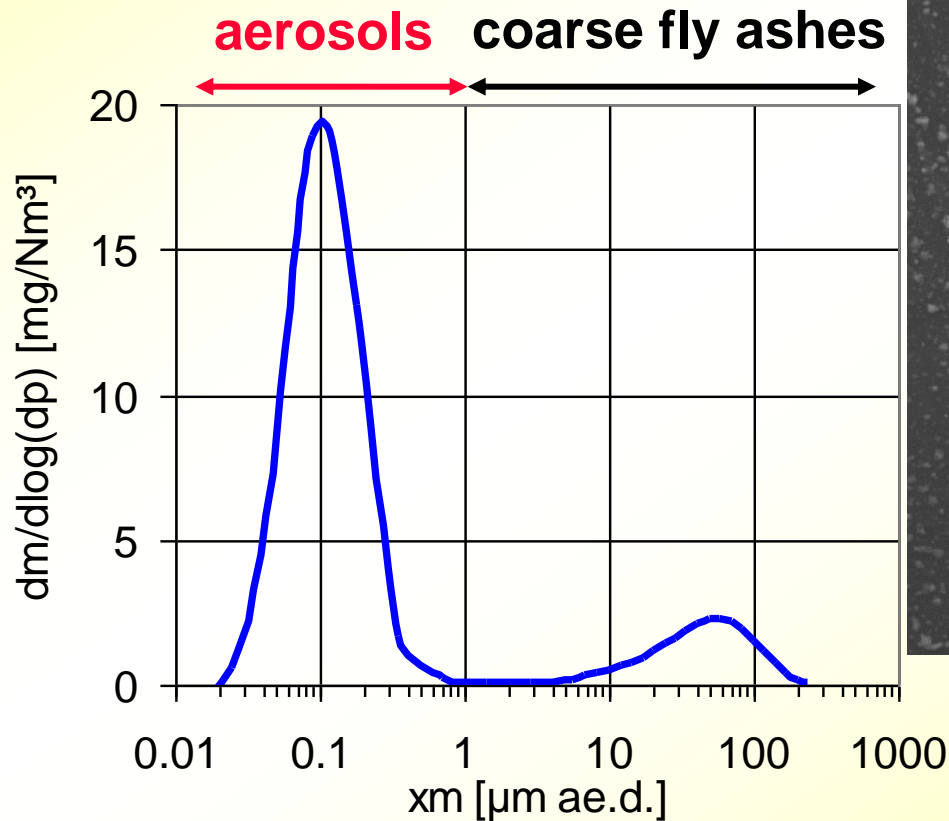
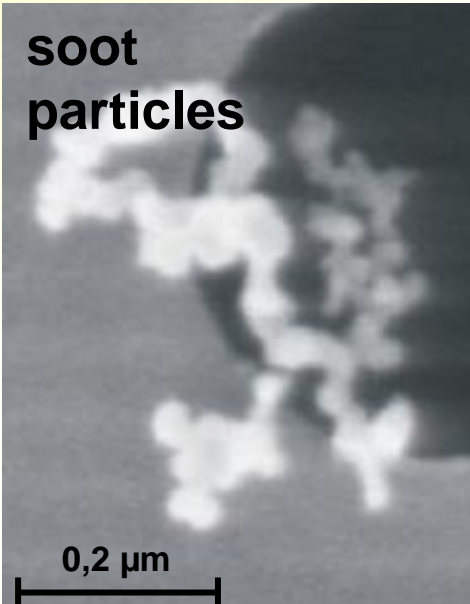
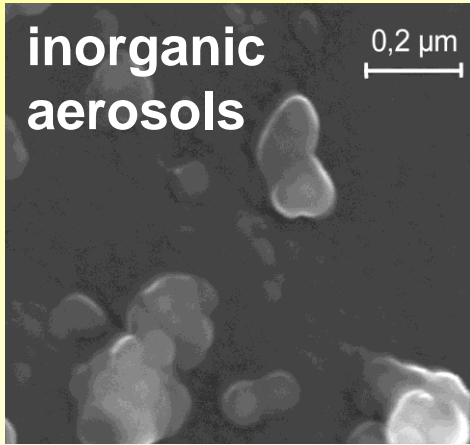
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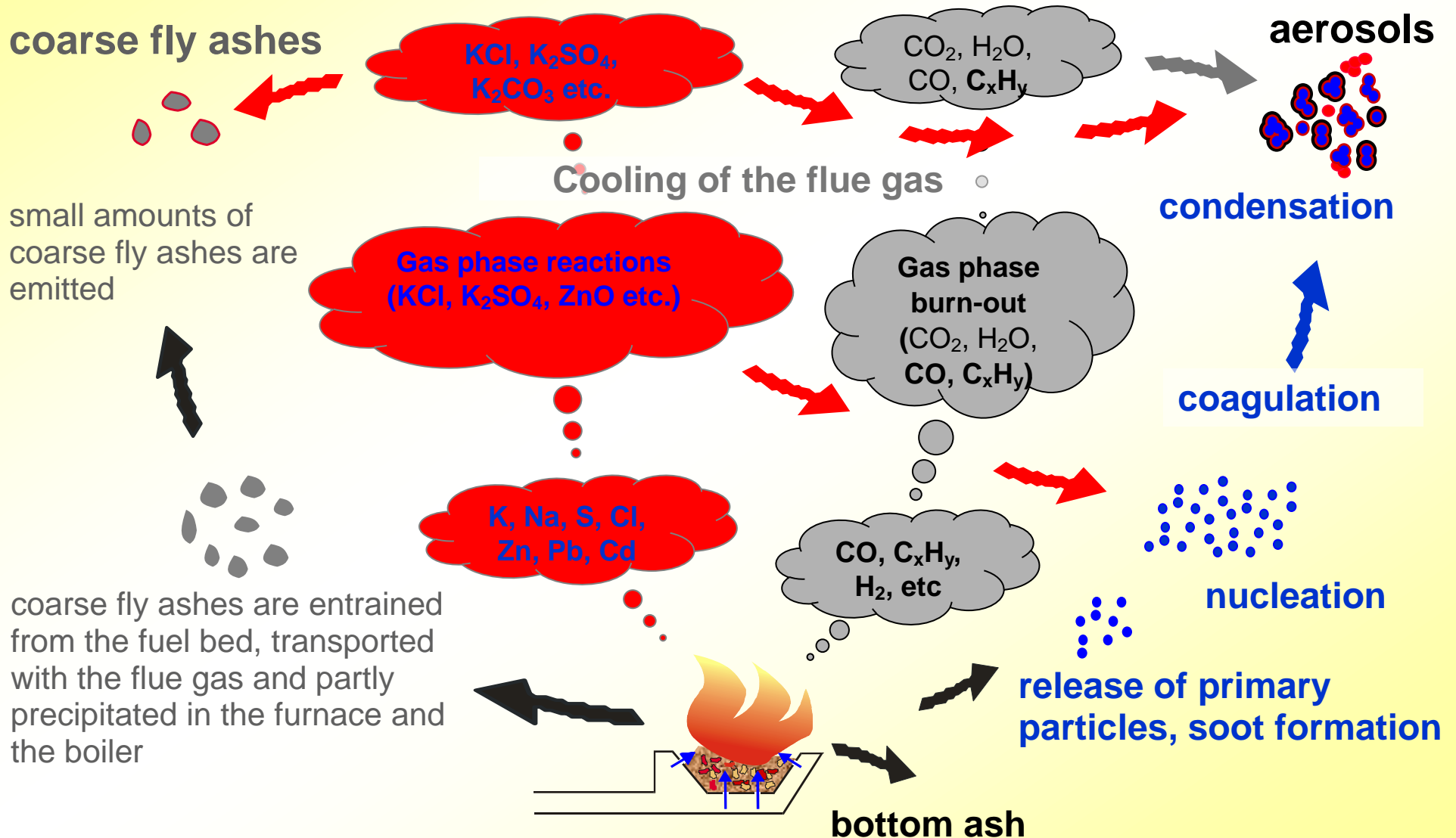


Particulate matter (PM) emissions from fixed-bed biomass combustion systems – definitions



Data related to dry flue gas and 13 vol.% O_2 ;
ae.d. ... aerodynamic particle diameter;
results from tests runs with a modern small-scale pellet boiler

PM emission formation in fixed-bed biomass combustion systems

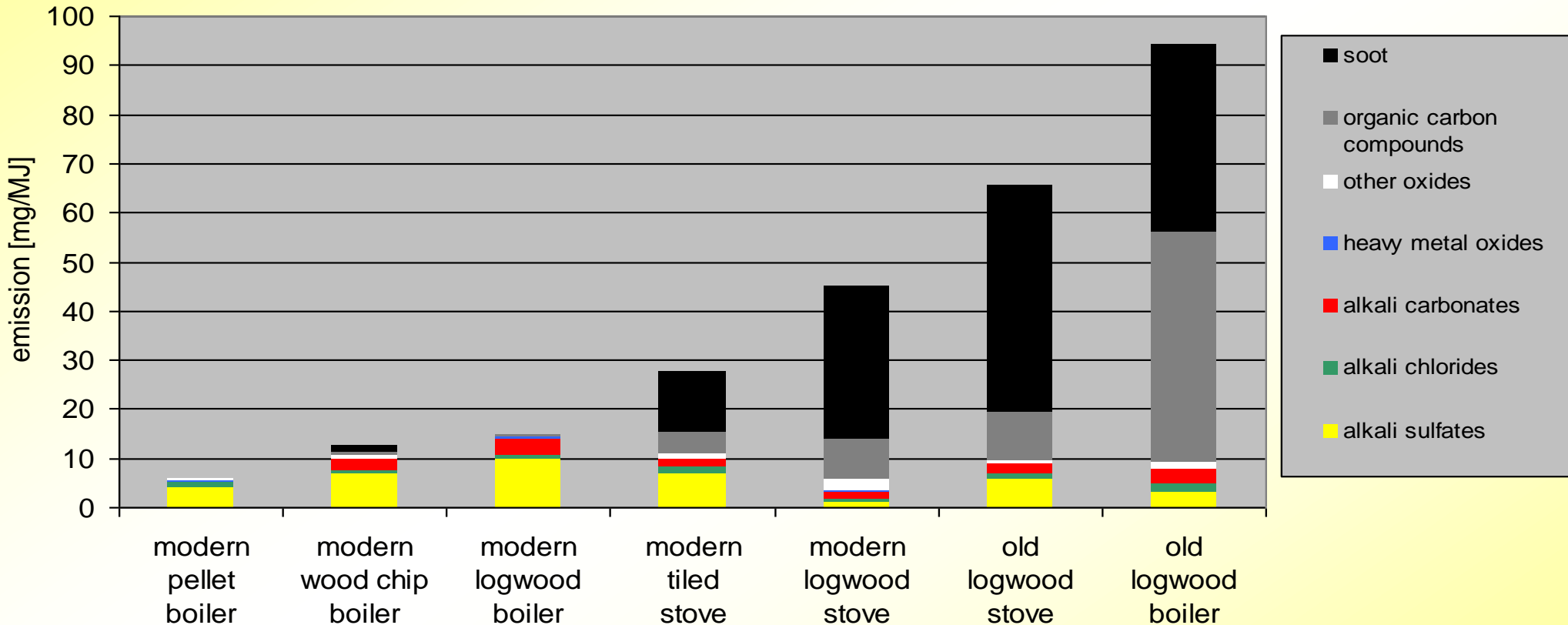




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Amounts and chemical compositions of PM_{10} emissions from old and modern residential biomass combustion systems



Results of analyses of PM_{10} samples taken over whole day operation cycles from the respective systems



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Relevant R+D topics and relation to the workshop programme (I)

Low-dust technologies

- ***Jorma Jokiniemi***
The effect of gasification-combustion technology on emissions
- ***Thomas Brunner***
Primary measures for low-dust combustion – relevant findings
- ***Linda S. Bäfver***
Reduction of particle emissions by using additives



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Relevant R+D topics and relation to the workshop programme (II)

Small-scale precipitators

- ***Ole Schleicher***
Evaluation of small-scale precipitators in Denmark –
results of lab- / field tests
- ***Hans Hartmann***
Electrostatic precipitators for small-scale wood combustion
systems - results from lab and field tests
- ***Thomas Nussbaumer***
Characterisation of particles from wood combustion with
respect to health relevance and electrostatic precipitation



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Relevant R+D topics and relation to the workshop programme (III)

Health effects

- ***Volker Lenz***
Development of a measurement method for health effects of PM emissions from biomass combustion and evaluation of results achieved
- ***Thomas Brunner***
Influence of combustion conditions on the genotoxic potential of fine particle emissions from small-scale wood combustion
- ***Maija-Riitta Hirvonen***
Health related toxicological effects of aerosols from small-scale biomass combustion systems