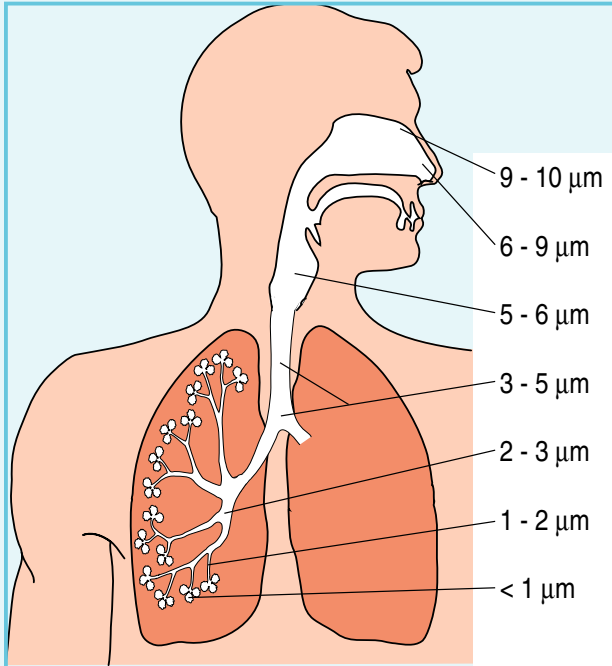
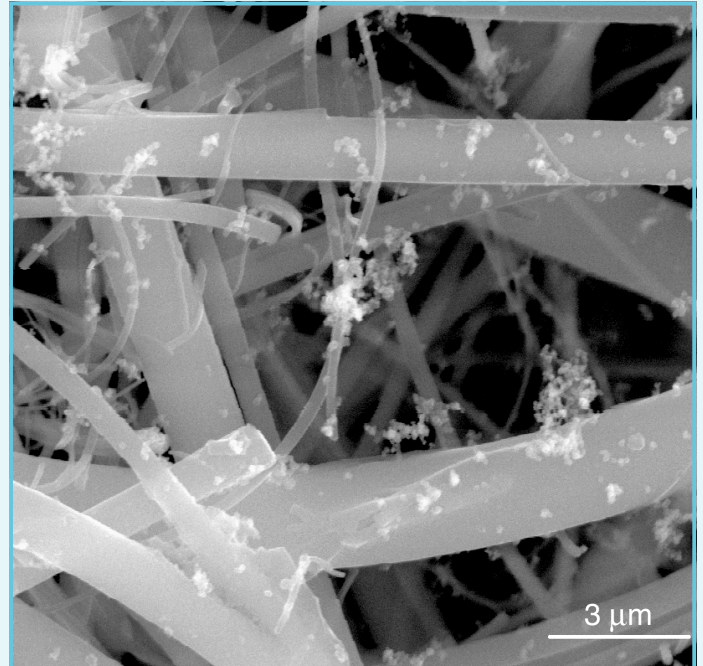


Emissions of small particles from Biomass Combustion



Health effects are correlated to the particle size.



Example of emissions of particles from biomass combustion.

Sources of small particles

Primary particles (directly emitted to the atmosphere)

- Combustion
- Traffic
- Wind blown soil
- Sea spray

Secondary particles

Formed by secondary reactions in the atmosphere or by condensation of vapours/gases, for instance inorganic salts from oxidation of SO₂ and NO_x.

Mechanisms of particulate formation

Soot

- Pyrolysis of hydrocarbons producing smaller fuel molecules
- Formation of aromatic species
- Molecular growth
- Particle inception
- Surface growth
- Collision and coagulation
- Agglomeration
- Aggregation

Implications for small scale biomass combustion

- Emissions of PM₁₀ are not known quantitatively or qualitatively.
- Emissions of both soot and ash particles are important.
- More knowledge is necessary to support development of efficient combustion techniques with low emissions.

Ash

