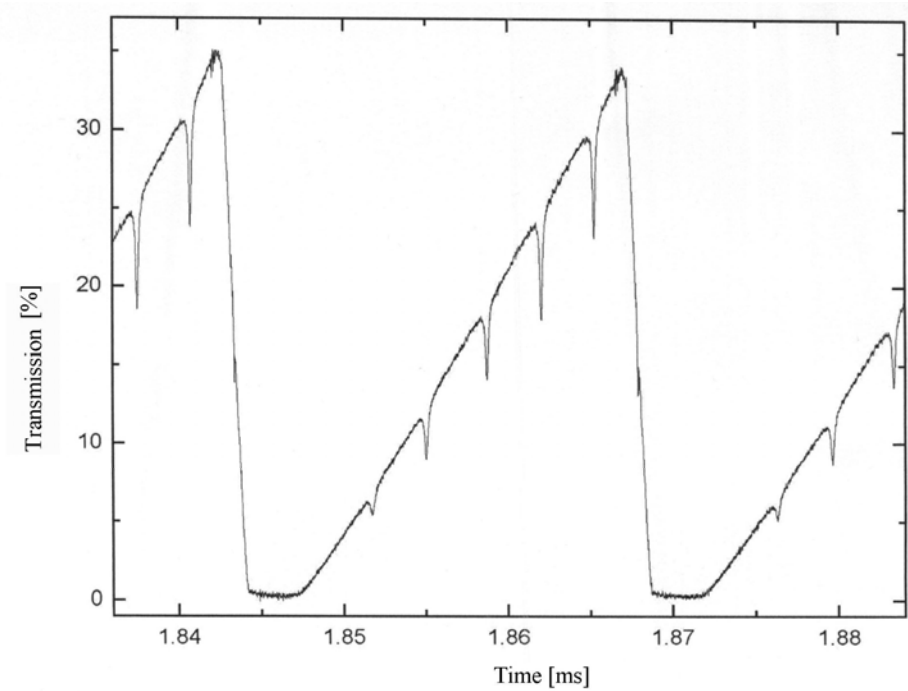
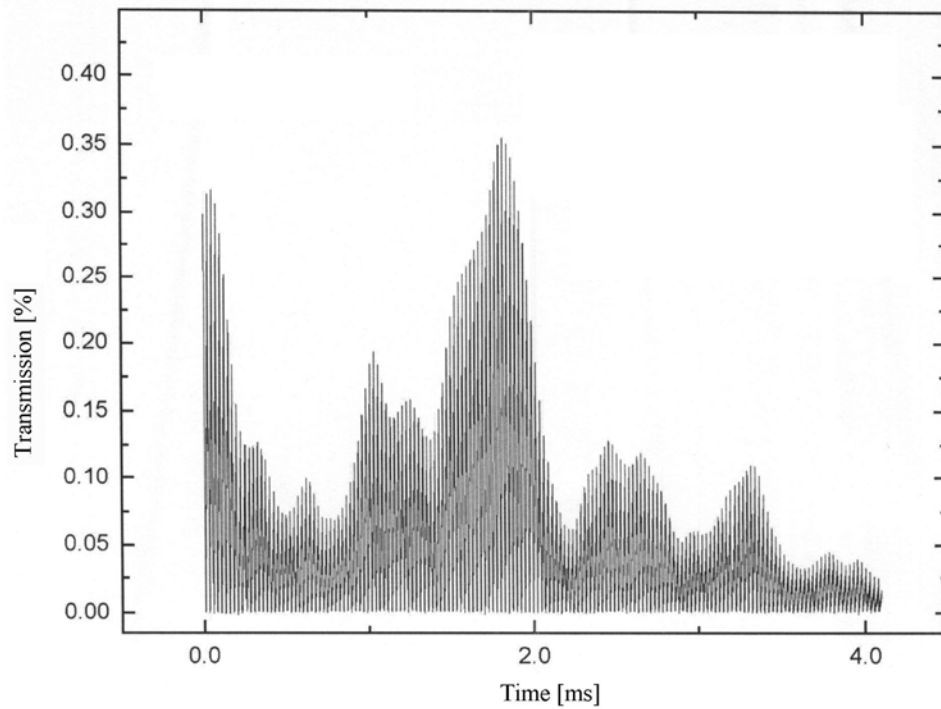
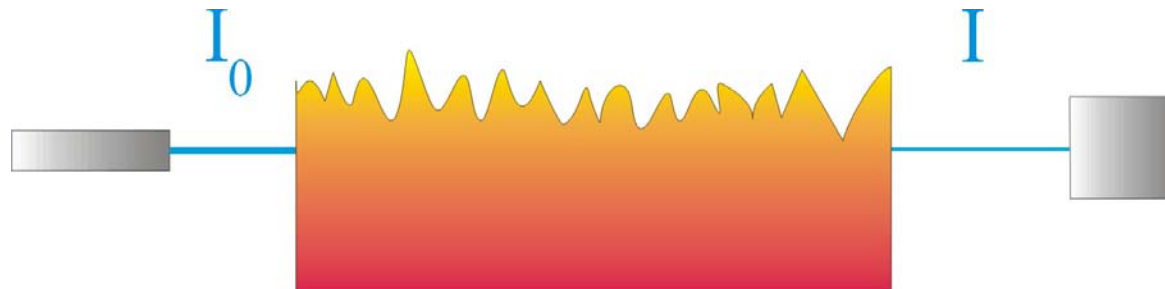




***In-situ* Laser Measurements of CO and CH₄ Close to the Surface of a Single Fuel Particle in a Fluidized Bed Combustor**

Max Lackner, Gerhard Totschnig, Franz Winter

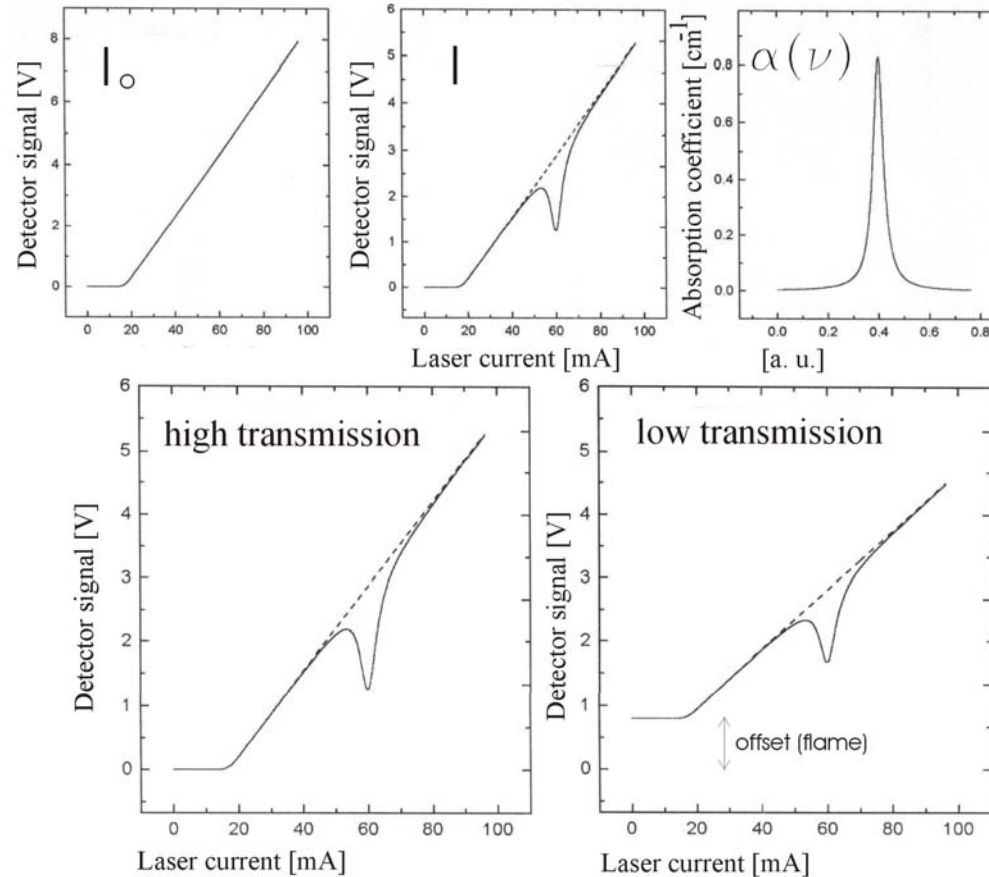
May 27th, 2002

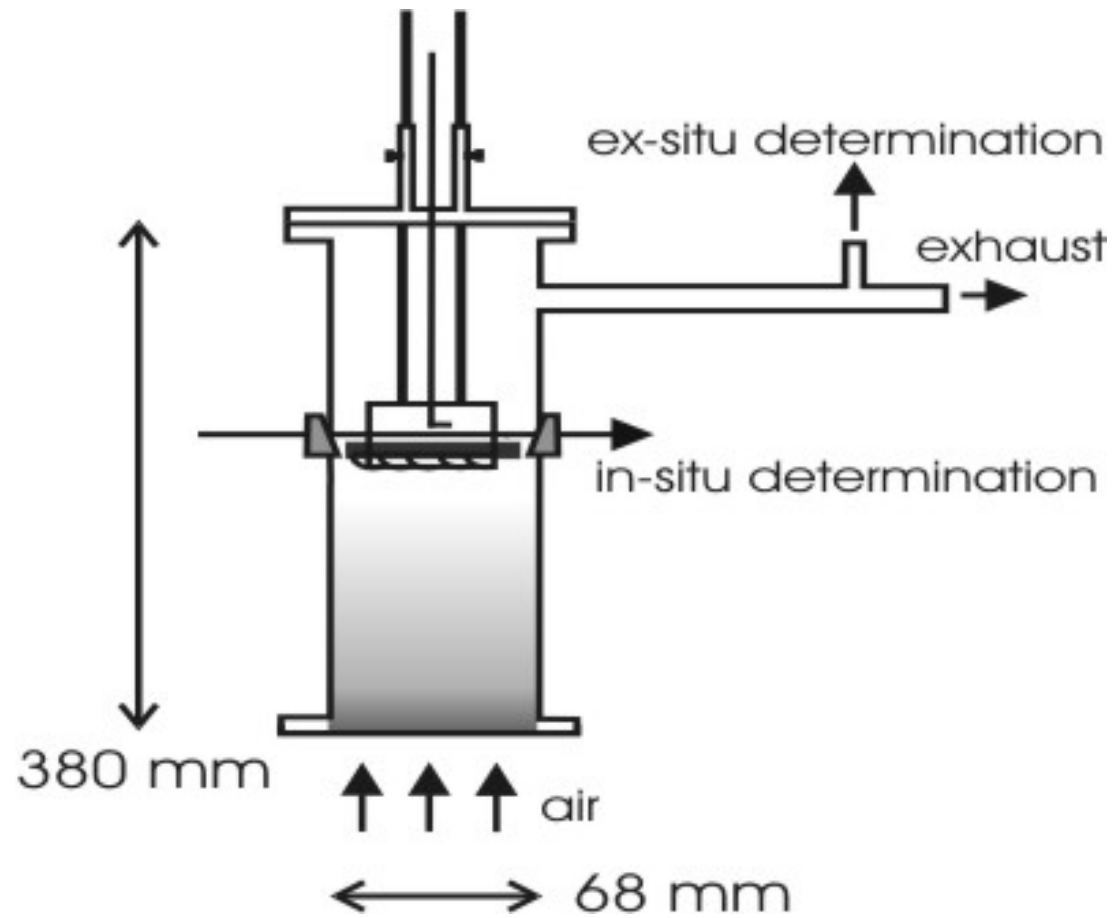




$$A = \ln \frac{I_0}{I} = \alpha(\nu)l$$

$$\alpha_{\nu} = S_i \Phi_{\nu} p x_i$$







Fuels:

Beech wood

Fir wood

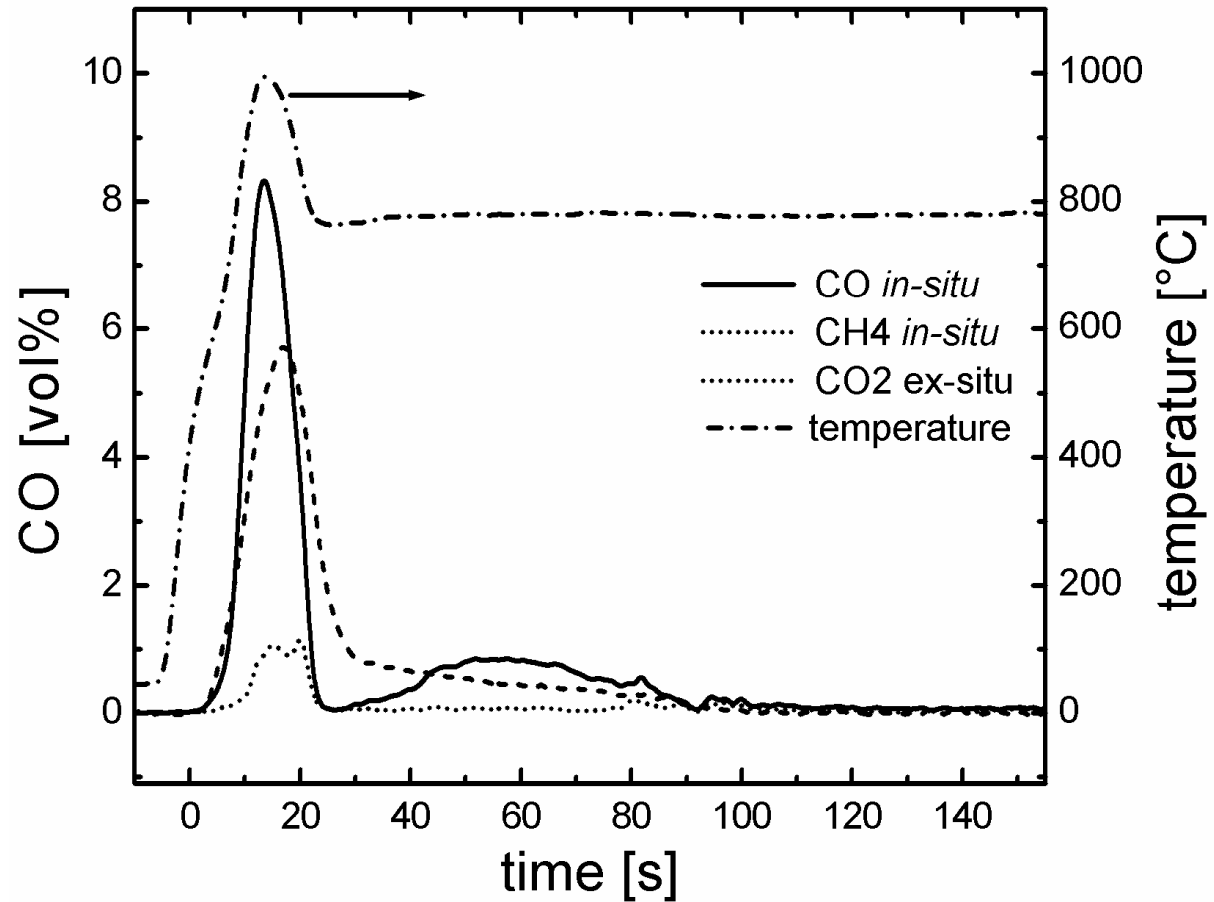
Bituminous coal

Test conditions:

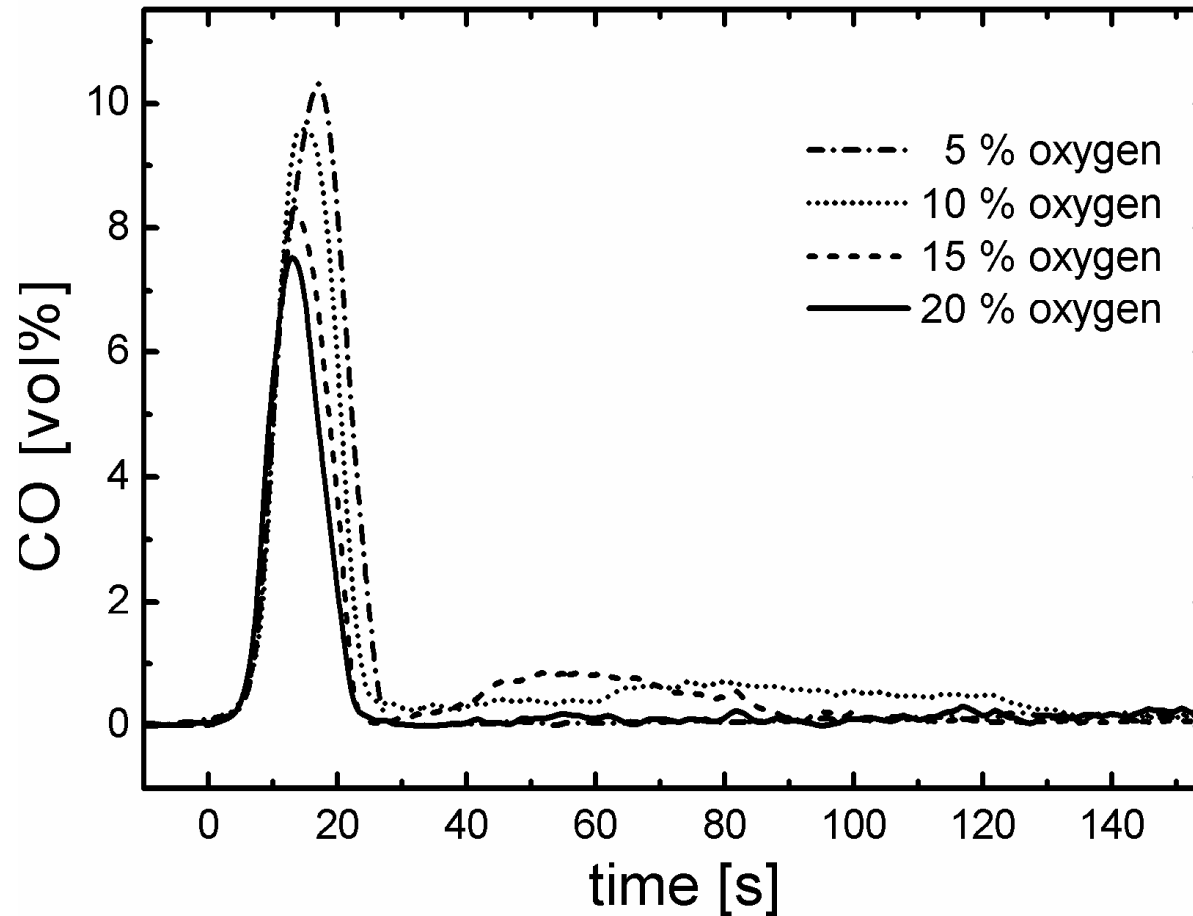
Bed temperature 700 – 900 °C

Oxygen partial pressure 5 – 20 kPa

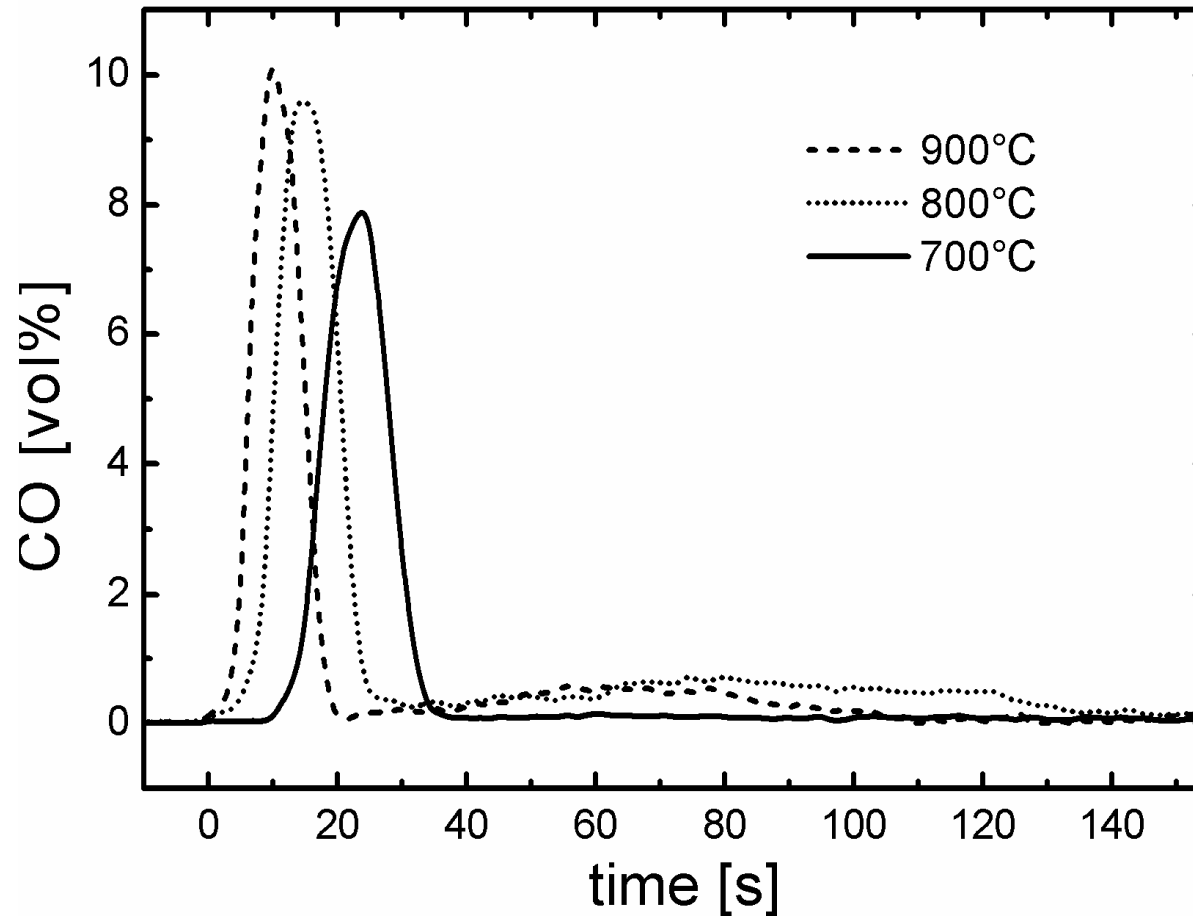
Distance laser beam \leftrightarrow particle 4- 31 mm



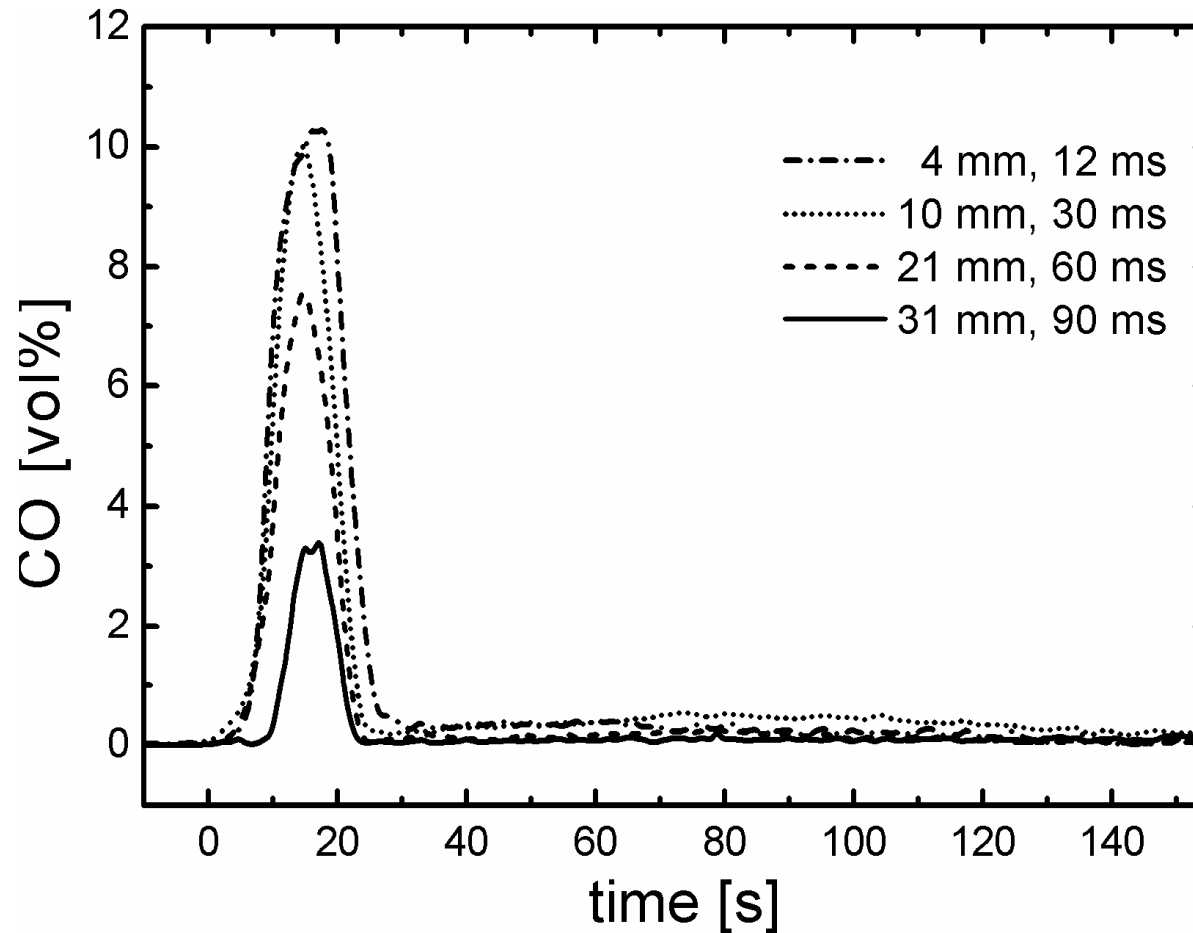
800°C, 15kPa O₂, 10 mm distance, 0.5 g beech wood, Ø 4mm



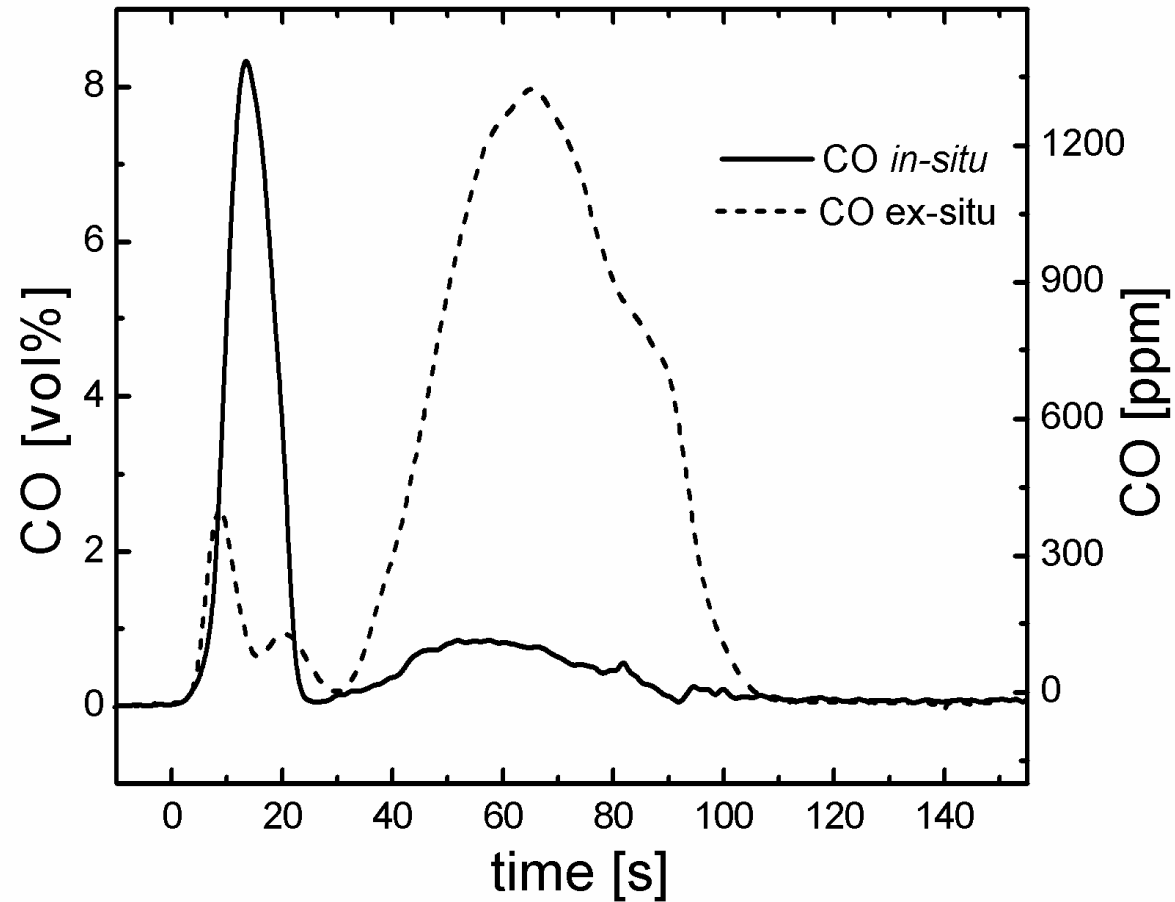
800°C, 10 mm distance, 0.5 g beech wood, Ø 4mm



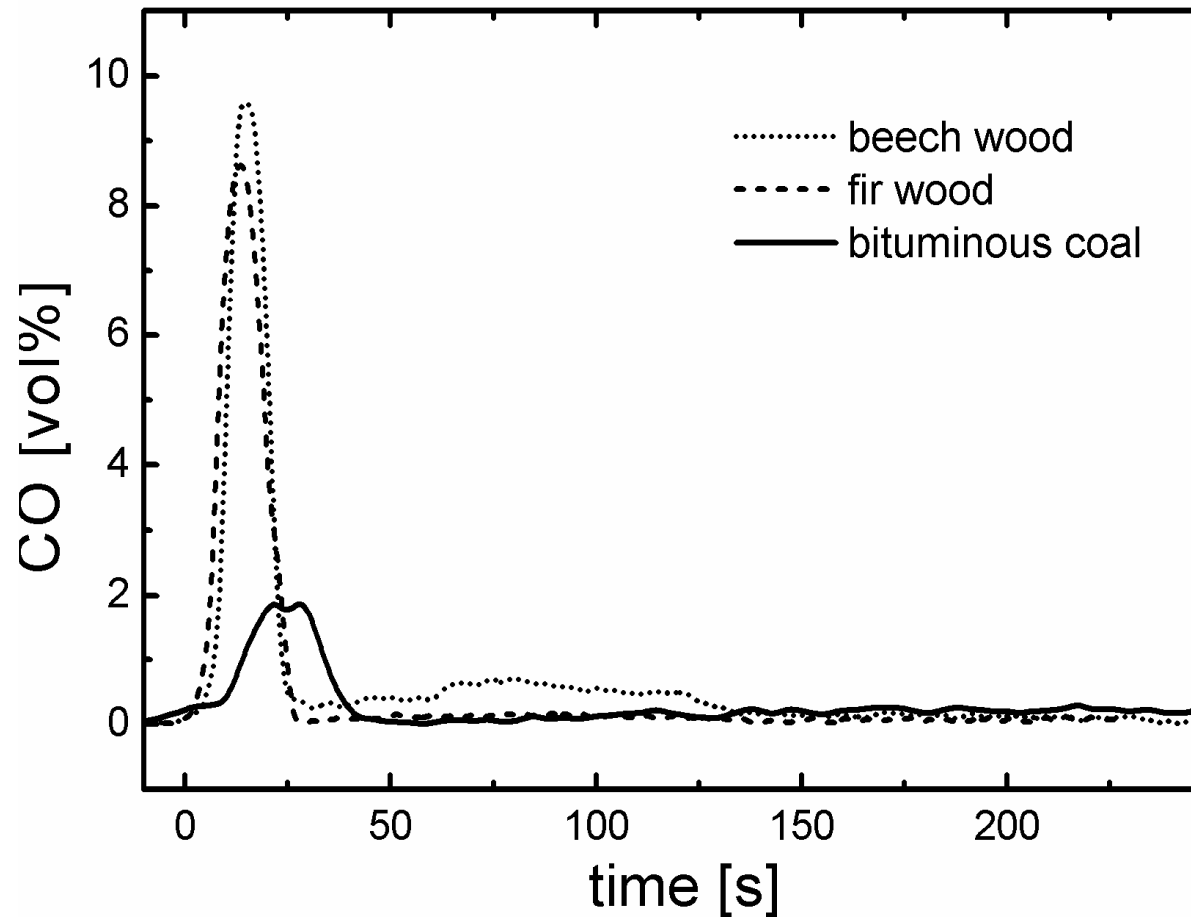
10kPa O₂, 10 mm distance, 0.5 g beech wood, Ø 4mm



800°C, 10kPa O₂, 0.5 g beech wood, Ø 4mm



800°C, 15kPa O₂, 10 mm distance, 0.5 g beech wood, Ø 4mm



800°C, 10kPa O₂, 10 mm distance, sample mass 0.5 g wood, 1.0 g coal

