

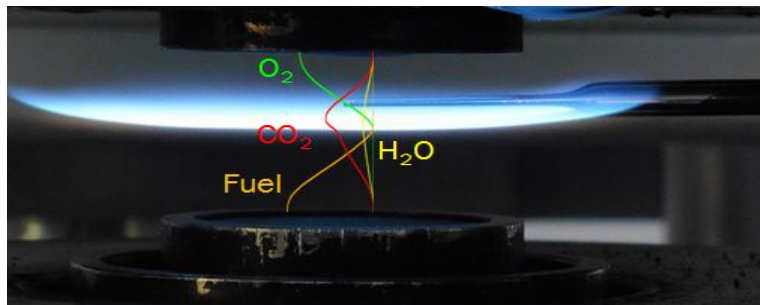
## Experimental Bachelor/Master thesis on oxy-fuel technology applied to biomasses

**Oxy fuel combustion** is seen as one of the most promising technologies for capturing CO<sub>2</sub> from the thermal power industry. In oxy-fuel combustion fuel is burnt in a mixture of oxygen and recycled fuel gas (mainly CO<sub>2</sub> and H<sub>2</sub>O) instead of air, to yield a CO<sub>2</sub>-rich flue gas stream, which is ready for sequestration after purification and compression.

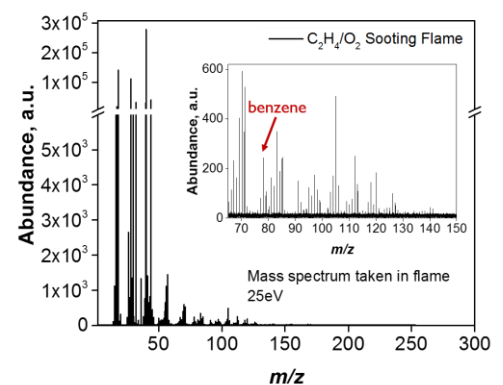
Under these conditions, kinetic, thermal and transport properties of chemical species are different and affect the overall combustion behavior. Our goal is to evaluate these effects on **biomass tar** with a particular focus on the reaction kinetics and formation of **soot precursor species**.

### Your activities:

- experimental measurements of species profiles with a Time-of-Flight mass spectrometer testing conventional and oxy-fuel atmosphere
- analysis of the flame structure through the use of a 1D code which simulates the flames that you measure in the lab and comparison with experimental results (for master thesis)



Probe measurements in the flame



### What you will learn:

- you will gain a good understanding of the structure of a flame and of the thermal, chemical and transport processes that need to be considered
- you will operate one of the very few test rigs of this type which exist in the world

### The ideal candidate should:

- have basic thermodynamic and combustion knowledge
- ready to work in an experimental environment

