

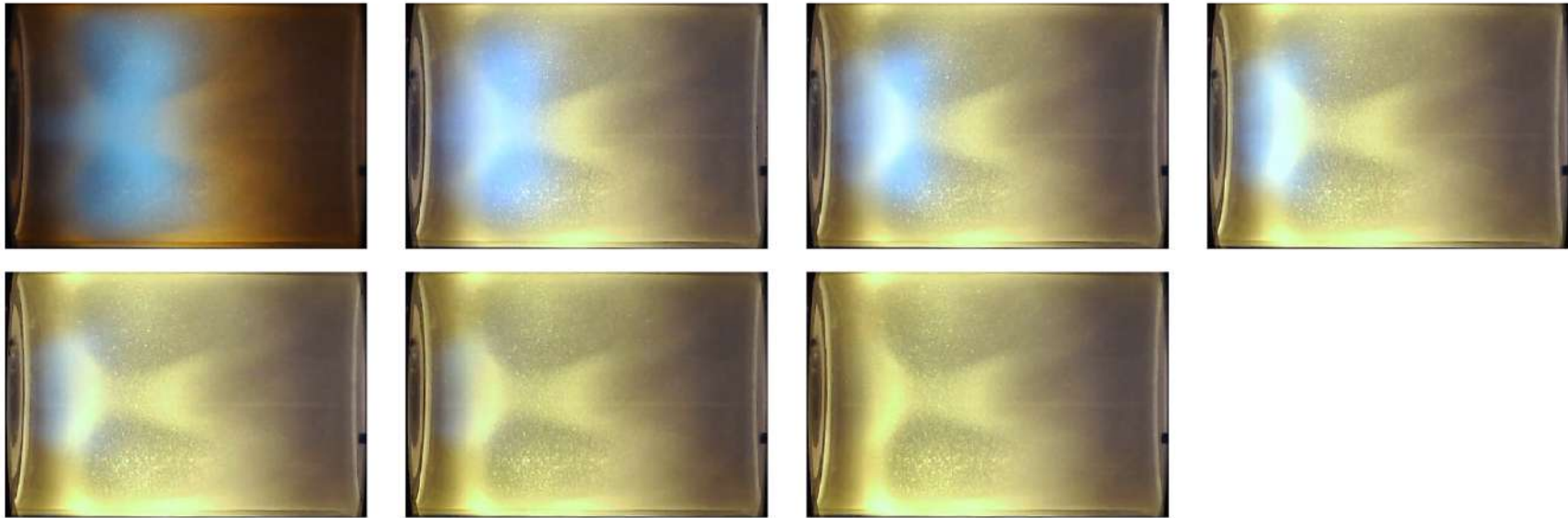


BioFlexgen TUB Combustion tests

11.03.2022



Fuel switch / H₂ combustion



- Flow from left to right
- Stepwise fuel switch from 100% natural gas (top left image) to 100% H₂ (bottom right image) in preheated air/steam atmosphere at otherwise stable operation conditions (steam ratio, equivalence ratio, preheating temperature)
 - stable combustion at all intermediate points
- With increasing H₂-content: flame moves upstream, becomes more compact (for 100% H₂ no flame in the visible spectrum)
- For these operation parameters low emission (single digit NO_x & CO-emission corrected to 15vol% O₂ in exhaust)



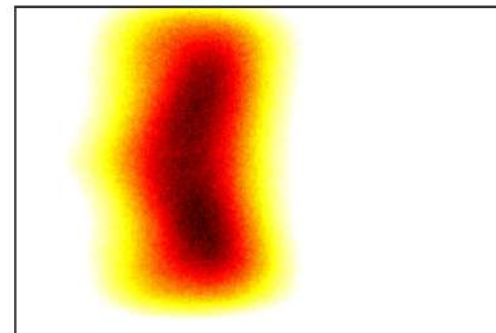
Fuel switch / H2 combustion

- Fuel switch exerts strong effect on flame position and size
 - H2 flame much further upstream and more compact
 - Stable combustion with 100% H2 @ low emissions

Visible spectrum
snapshot

Time-averaged OH* spectrum

Air/steam/natural gas



Air/steam/H2

