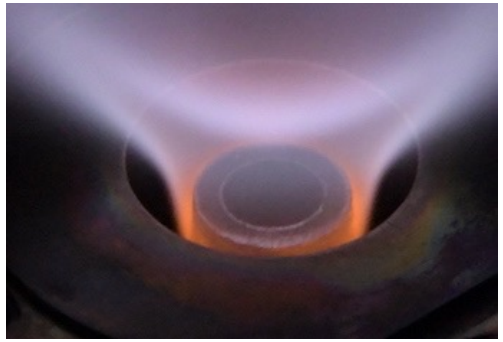
HYLON TNF: hydrogen lips temperatures

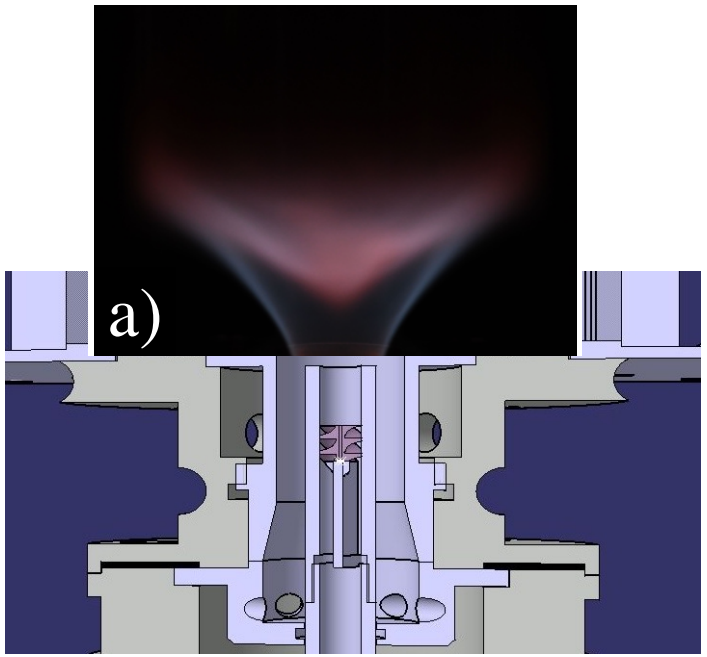
Two stabilization regimes

Marragou et al. (2022) IJHE 47:19275
Aniello et al. (2023) CNF 249:112595

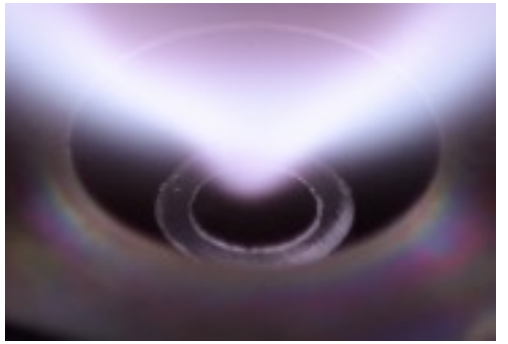
Flame A



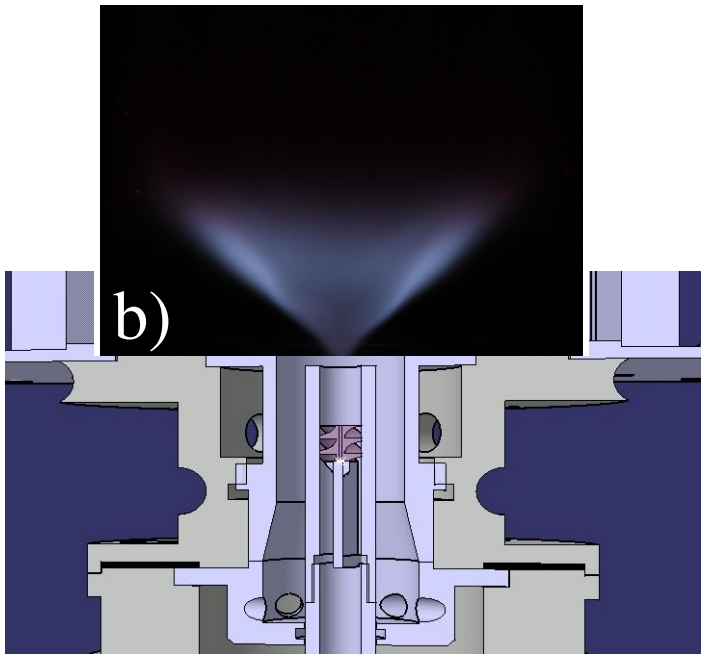
$T < 600/700°C$



Flame L



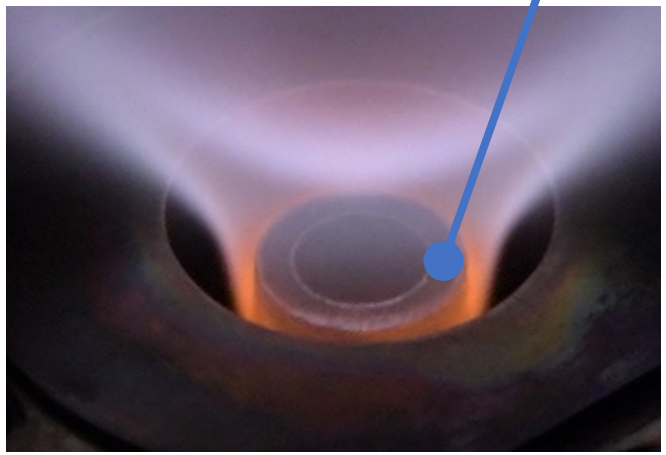
$T < 200/300°C$



Two stabilization regimes

Flame A

$T < 600°C$



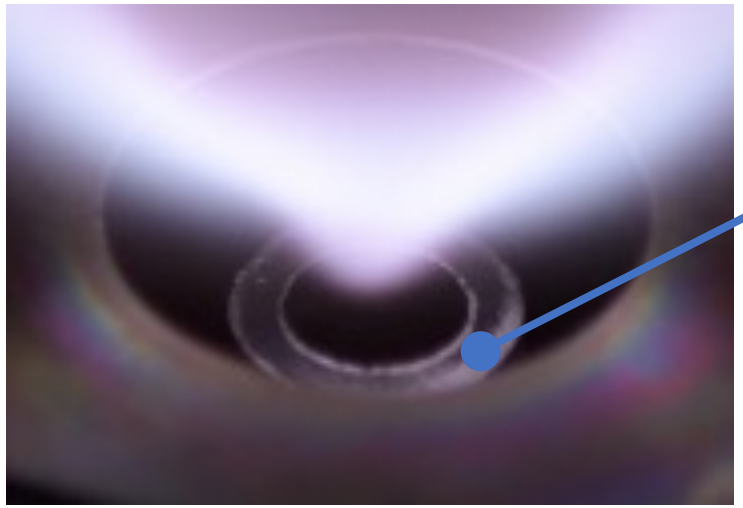
This value corresponds to an upper limit that is far from being reached. The temperature is probbaly much below 600°C because:

- u_{H2} =13.5 m/s injected at Tu=293 K
- cp_H2 = 14500 J/kg/K

Our guess based on

Two stabilization regimes

Flame L



$T < 250\ °C$

This value corresponds to an upper limit that is far from being reached. The temperature is probbaly much below 250°C because:

- u_{H2} = 34 m/s is large injected at Tu=293 K (u_a=28 m/s)
- cp_{H2} = 14500 J/kg/K,

Lip temperature barely exceeds T~ 300 K

Conlusion

Hydorgen temperature lip will be measured for Flame A and Flame L and added to TNF database