Chemiluminescence of hydrogen enriched biogas mixtures

Nuno Rocha

Laboratory of Thermofluids, Combustion and Energy Systems
Center for Innovation, Technology and Policy Research IN+

IN+ GET TOGETHER

Supervisor(s): Prof. Edgar Caetano Fernandes

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Biogas is a BAD fuel

- Variable Composition
- Bad combustion properties

Hydrogen is a GREAT fuel

- Just a small of $H_2$ greatly increases the flammability of Biogas

But exactly how much $H_2$ should we add to get the best burning conditions?
Using **Chemiluminescence** to monitor flames in real time

- **BIOGAS** (constant feed)
- **Air**
- **H₂** (variable H₂ feed)

Flame Spectrum

Calibration curve

Light intensity (a.u.)

- OH⁺
- CH⁺
- C₂⁺
- CO₂⁺

Variable H₂ feed

Controller

Radicals Intensities