Emission & Energy reduction

Energy efficiency is a crucial factor for today's steam cracking furnaces.

Opposing factors like cost efficiency and a simultaneous **reduction of emissions** of greenhouse gases and NO_x needs to be controlled.

Innovative technologies will allow:

- ✓ to **increase energy efficiency** by at least **20%**
- ✓ to **reduce greenhouse gases** and NOx / ton ethylene produced by at least **25%**
- ✓ to **increase** the **time** on stream by a **factor 3**

PROJECT DETAILS

Duration	48 months
EU Grant	6 878 401 €

CONSORTIUM

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AVGI

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DOW

ayming | business performance consulting

CRESS

Associated partner: Emisshield

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SPIRE PROJECT

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SPIRE PROJECT

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INTEGRATED MODEL GUIDED PROCESS OPTIMIZATION OF STEAM CRACKING FURNACE

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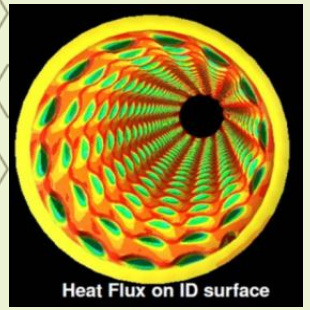
OBJECTIVE

Develop new techniques to **reduce coke formation**, use **high emissivity coatings**, and **include biogas and bio-oil as fuels** to drastically improve the energy efficiency of steam cracking furnaces in a cost effective way, while reducing emissions of greenhouse gases and pollutant emissions.

INNOVATIONS

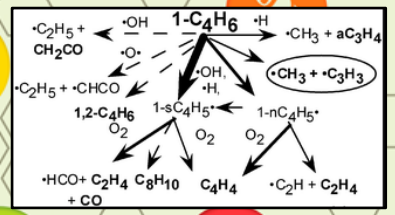


New 3D reactor design for improved process control and increased run length

Renewable fuels (biogas and bio-oil) for lower net CO_2 production

High emissivity coatings for lower fuel consumption

METHODS



Chemical kinetics for oxy-combustion and biofuels

Advanced numerical simulation

Upscaling and integration

Next generation steam cracking process

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