

# COMOTI

ROMANIAN RESEARCH & DEVELOPMENT INSTITUTE FOR GAS TURBINES

## Premixed swirled combustion chamber

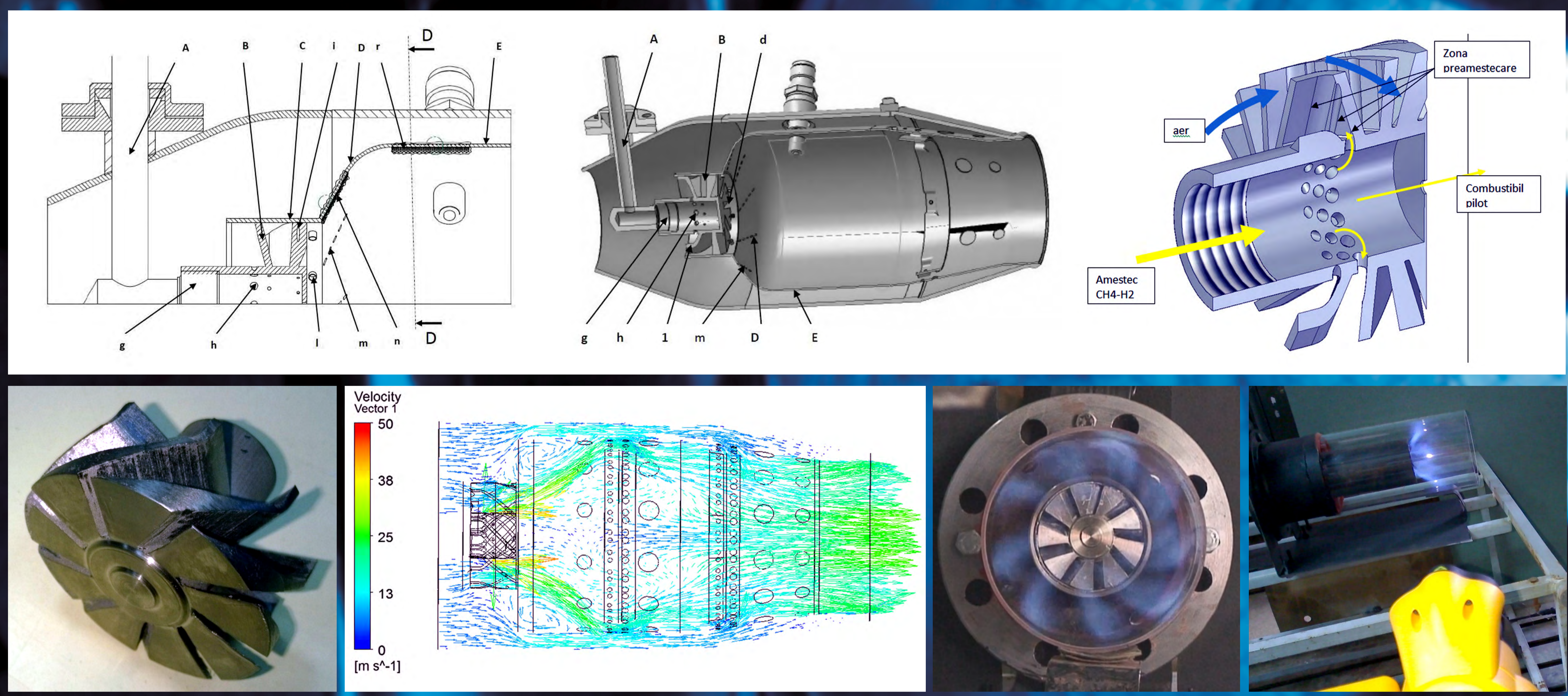
Research project RO 76/2014: COMOTI - UPB - GE

Industrial Partener GENERAL ELECTRIC Aviation



### Description:

The invention relates to a premixed and swirled combustion chamber which is used in the field of gas turbines operating on gaseous fuels, especially for the case when the gaseous fuel is a mix of gases with high burning velocity like hydrogen.



### Novelty:

- The swirled injector with helical flared flow channels and convergent nozzle.
- Sectorial jets with optimization of the dosage.
- Counter-flow cooling effusion jets in opposite direction to the swirl.

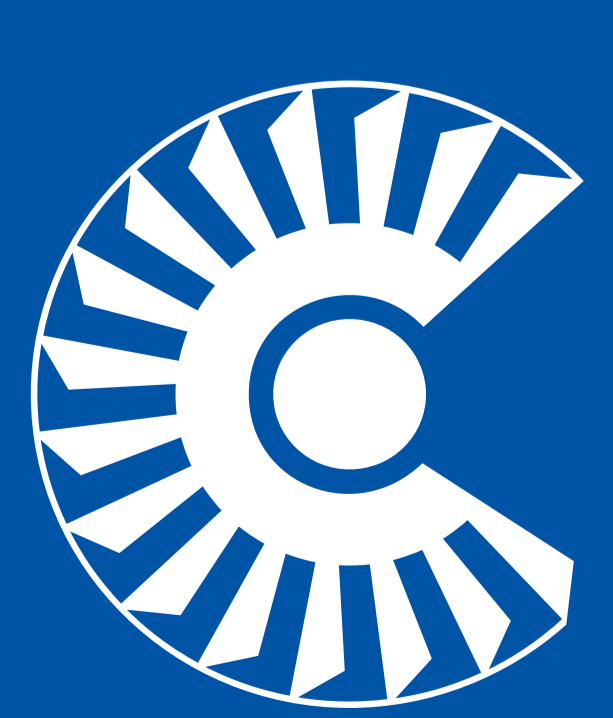
### Advantages:

- The axial helical flow sections of the swirled injector are formed by convergent nozzles – this eliminates the risk of flame flashback phenomenon.
- The elongated parallelogram slot holes at the exit of the vortex allow the adjusting of the optimal dosage.
- The disposal of the orifices as layout and angle on the fire tube removes the effusion cooling on the boundary layer zone, eliminating the possibility of freezing chemical reactions.

Gold Medal - PRO INVENT 2016



Gold Medal - Geneve 2016



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