

# COMBUSTION DIAGNOSTICS FOR BURNERS DEVELOPMENT AND CONTROL

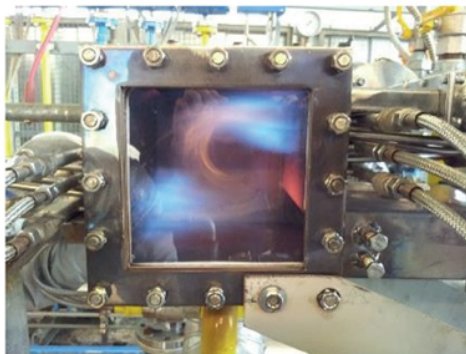
**Innovations and Benefits** - It allows accurate diagnostics as well as monitoring and control of combustion by means of the ODC (Optical Diagnostic of Combustion) system. The adopted diagnostic techniques are advanced and under ENEA patenting. They are applied for the development of control systems definitely innovative which allow to qualify the national industry "products" in terms of reliability and safety. Analyses can be performed to monitor combustion and characterize its modalities, identify precursors of instability and, eventually, integrate the sensor into a control system.

**Uses** - This kind of diagnostics can be applied to:

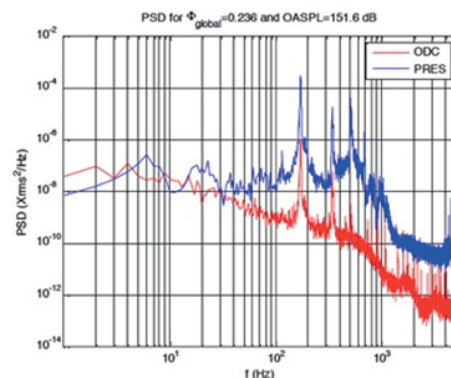
- various and different combustion technologies and devices
- innovative burners for gas turbines
- real gas turbines

ENEA patents: RM2004A000157, RM2006A000159, RM2014A000118

**Past and Present Activities** - A work funded by ANSALDO Sviluppo Energia was concluded: the aim was to perform instability diagnostics on an ANSALDO machine of ENI POWER.



Monitoring and tuning of an experimental rig



Analysis of thermoacoustic instabilities in an experimental burner

