Marie Curie Initial Training Network TANGO

Thermo-acoustic and Aero-acoustic Nonlinearities in Green combustors with Orifice Structures

Early Stage Researcher (short-term research training project position)
"Numerical Study of Nonlinear Dynamics of a Turbulent Combustor"

Estimated Salary: € 50000,00 per 12 months and dependent upon mobility allowance

TANGO is a Marie Curie Training Network (http://www.scm.keele.ac.uk/Tango/) coordinated by Keele University and composed of five Universities and four Companies throughout Europe and India as full partners. Under this EU-funded initiative, a position exists in Ansaldo Energia S.p.A. in Genoa (Italy) for Master's student to work on combustion instabilities. Such instabilities represent a critical problem for gas turbine engines, since they cause large amplitude pressure oscillations, which may lead to structural damage to the machine. Lean combustion systems are particularly prone to combustion instabilities.

In the Combustion Team of Ansaldo Energia S.p.A. in Genoa (Italy), a Master's project position (early-stage researcher) is offered on "Numerical Study of Nonlinear Dynamics of a Turbulent Combustor". The key duties and responsibilities of the position are the numerical investigation of the nonlinear dynamics of thermoacoustic instabilities applied to an atmospheric test rig equipped with a full scale industrial burner. The work will involve the use of a one-dimensional analytical thermoacoustic model developed at Keele University and of nonlinear flame models and flame describing functions from the literature. Data gathered during previous experimental campaigns on the atmospheric test rig will be used as reference for the assessment of the thermoacoustic model. A short secondment period at Keele University is also expected.

The position is for 12 months. The location of the job is Genoa (Italy), headquarter of Ansaldo Energia. It will be under the supervision of Federico Daccà (Federico.Dacca'@aen.ansaldo.it) and Giovanni Campa (Giovanni.Campa@aen.ansaldo.it). The combustion team at Ansaldo Energia is composed of 8 employees (engineers and physicists), 1 Master's student and 1 PhD student also involved in the TANGO Network.

Applicants are required to possess an MSc degree or equivalent in Physics, Mathematics, Computer Science or Engineering. It would be appreciated if the applicant had basic knowledge of programming, numerical methods, combustion and gas turbines. Additionally applicants should be in the first four years (full-time equivalent) of their research careers and not yet have been awarded a doctoral degree. Applicants must also satisfy the eligibility rules stipulated by the Framework 7 Guidelines of the European Commission. Applicants are also asked to undertake trans-national mobility. The eligibility criteria can be found on pages 14 and 15 of
http://www.ukro.ac.uk/mariecurie/schemes_orgs/Documents/110725_itn_specific_guide.pdf.

CV and motivation letter can be sent to:

Dr. Giovanni Campa
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Closing date: 31 March 2015