



## DEPARTMENT OF AEROSPACE ENGINEERING

### Marie Curie Initial Training Network TANGO

#### Thermo-acoustic and Aero-acoustic Nonlinearities in Green combustors with Orifice structures

#### Early Stage Researcher (Master's project position)

#### "Experimental Study of Nonlinear Dynamics of a Turbulent Combustor"

**Estimated Salary: 21 000 € (1.5 Million Rupees) dependent upon mobility allowance and Euro/Rupee exchange rates**

#### Fixed term for 8 months

TANGO is a Marie Curie Training Network (<http://www.scm.keele.ac.uk/Tango/>) coordinated by Keele University (UK) and composed of nine Universities and eight Companies throughout Europe and India. Under this EU-funded initiative, a position exists at IIT Madras, for master's student to work on combustion instabilities. Such instabilities represent a serious problem for combustion-driven devices, such as gas turbine engines and domestic burners, since they cause large-amplitude pressure oscillations, which in turn may lead to catastrophic damage. Clean combustion systems are particularly prone to combustion instabilities.

At the Department of Aerospace Engineering, Indian Institute of Technology Madras, a Master's project position (early-stage researcher) is offered on "Experimental Study of Nonlinear Dynamics of a Turbulent Combustor". The key duties and responsibilities of the position are to investigate the nonlinear dynamics of thermoacoustic instabilities experimentally in a turbulent bluff-body combustor. The work will involve optical flow diagnostics techniques such as high speed PIV and high speed chemiluminescence imaging.

The position is for 8 months. It will be under the supervision of Professor R. I. Sujith ([sujith@iitm.ac.in](mailto:sujith@iitm.ac.in); [www.ae.iitm.ac.in/~sujith](http://www.ae.iitm.ac.in/~sujith)), who has a strong track record of research in the area of combustion instabilities. A large group (8 PhD students, 2 Masters students) work with him in this area with state of the art facilities.

Applicants should ideally be a Master's student (or a 5 year integrated undergraduate-cum-Masters degree) in Aerospace, Chemical or Mechanical Engineering or in Physics, working for their Master's thesis. The master's thesis can be credited at the candidate's home university, with a thesis defense as per the rules of the home university. Applicants must also satisfy the eligibility rules stipulated by the Framework 7 Guidelines of the European Commission. These can be found on pages 14 and 15 of [http://www.ukro.ac.uk/mariecurie/schemes\\_orgs/Documents/110725\\_itn\\_specific\\_guide.pdf](http://www.ukro.ac.uk/mariecurie/schemes_orgs/Documents/110725_itn_specific_guide.pdf) In particular, applicants must be mobile and at an early stage of their career.

**Further information is available from the project leader,**

**Professor R. I. Sujith**

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**Closing date: March 17, 2014**