



## **Research Associate Position**

### CFD of Two Phase Flow in the Pipes of an Aero Engine Bearing Chamber

#### School of Engineering and Applied Sciences

Bearing chambers in Aero Engines contain rolling elements of different types which are lubricated and cooled by aviation oil. In order to avoid an oil migration into the turbomachinery, bearing chambers are sealed with air by using advanced types of seals.

The air and oil mixture (Two-Phase flow) in the bearing chamber is removed by pumps via pipework. Depending on the operating condition of the aero engine, the orientation of the pipework and the type of seals used, different two phase flow regimes are expected.

It is expected by the applicant for this position to use three-dimensional CFD computation (commercial CFD ANSYS CFX) to simulate the two-phase flow of air and oil and the heat transfer in the pipework. The computational results will be validated by using test results from the European Research Programme ELUBSYS (Engine Lubrication System Technologies).

Strong personality is also expected by the applicant since she/he will be attending the coordination meetings within the ELUBSYS consortium throughout Europe, will be in close cooperation with the partners in the consortium and will be reporting to the supervising scientific officer within the Frederick University.

The applicant will have a MSc (submitted or obtained) in a relevant discipline or equivalent research experience. She or he, should also have strong knowledge in CFD codes and programming (C or Fortran languages) and knowledge of fluid mechanics and turbulence mechanics together with some basic knowledge in Numerical Analysis.



**FREDERICK UNIVERSITY**

It is expected and supported by the Frederick University that the applicant has a strong interest in R&D and will contribute significantly in the further development of R&D in Frederick University on a long-term basis.

The post is available from 1 July 2009 for a period of 42 months.

Salary depending on qualifications and experience

**Informal enquiries**

Dr Stratis Kanarachos

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**How to apply**

To apply for this vacancy, send your CV in pdf format to the following email address:

Dr. Stratis Kanarachos

Department Mechanical Engineering

[eng.ks@frederick.ac.cy](mailto:eng.ks@frederick.ac.cy)