EFDA Goal Oriented Training Programme
Trainee Position
in
Vacuum Technologies and Pumping (VACU-TEC)

VACU-TEC is one of the Goal Oriented Training Programmes under the European Fusion Development Agreement (EFDA: www.efda.org) and its aim is to prepare engineers and scientists for activities to support the ITER project and the long-term fusion programme within the Associations, Fusion for Energy and ITER Organization. The expertise in the program is provided by a network consisting of the following five Associations: Karlsruhe Institute of Technology (KIT), Commissariat à l'Energie Atomique (CEA), Hellenic Republic/University of Thessaly (UTH), Centre de Recherches en Physique des Plasmas (CRPP), Max-Planck-Institute for Plasma Physics (IPP)

Within VACU-TEC a trainee position is available in the Work Package entitled:

Physics - Vacuum Gas Dynamics and Flow Modelling

Duration: 3 years

Host association: UTH (www.mie.uth.gr)

Associated Partners in this Work Package: KIT, CEA, CRPP, IPP

Main goal

Modelling of gas piping distribution systems and pumping equipment in DT fusion reactors under low, medium and high vacuum conditions based on advanced simulation tools

Description of the project

The trainee will obtain, by a well organised course and mentoring program, theoretical and computational skills and then will develop and implement advanced software in the simulation of vacuum gas dynamics flows for ITER and beyond. This effort will be supplemented by practical skills acquired during secondments at the laboratories and facilities of the other partners and by a series of relevant meetings and conferences to disseminate results within the fusion community. The trainee will have the opportunity to obtain a thorough and concrete background and knowledge of the most advanced state-of-the-art software for simulating vacuum gas flows in the whole range of the Knudsen number and then further expand and implement this software to the demanding gas flow and pumping systems of ITER. The researcher will spend the majority of his/her time at UTH in Volos, Greece (28 months), with short stays at the institutions of the associated partners (8 months).The outcome of the Work Package may lead to a Ph.D. degree.

Requirements

The successful candidate should have the following qualifications:

- a 5-years/Masters degree in Engineering (Mechanical or Chemical) with high standard results
- a good background in fluid mechanics and programming in Fortran and/or C++

- excellent communication skills and written/verbal knowledge of the English language
- high autonomy and adaptability skills
- previous experience in kinetic theory and/or vacuum gas dynamic would be highly beneficial

Application procedure

Applications for this position, including a Curriculum Vitae with the contact details of three referees, a covering letter, attestation of the 5-years diploma/master degree and transcript of academic records, should be sent via email, using the reference number VACU-TEC_UTH in the subject line, to:

Prof. Dimitris Valougeorgis, Department of Mechanical Engineering, University of Thessaly, Volos 38334, Greece, Tel.: ++30.2421074058, Fax: ++30.2421074085, Email: diva@mie.uth.gr

Application deadline: May 15, 2011

Expected starting date: June 20, 2011