A research positions is available in the Applied Research on Energy Systems (ARES) Research Unit at Bruno Kessler Foundation, Center for Materials and Microsystems.

Workplace

The scientific activities of the “ARES” unit are focused on developing new energy systems and technologies based on renewable sources, for multi energy generation, particularly for distributed energy applications. The main fields of research are those of concentrated solar power and of hydrogen storage.

FBK is one of the most renewed research stakeholders at European level in the small-scale concentrated solar power. It is full member of the European Energy Research Alliance. At the same level in the topic of hydrogen storage technologies, where at EU level is member of research grouping N.ERGHY within the JTI FCH.

Job Description:

The research position offered concerns the research on energy systems and technologies, particularly applied in the topic of modelling and numerical simulation of solutions and components for energy storage and generation:

- Design and modelling of components and systems for energy micro cogeneration based on thermodynamic cycles (ORC, Stirling). Particularly of interest will be skills oriented to nano and micro turbine design;
- Design and development of storage components and systems for hydrogen in solid state materials, particularly tanks, integration with fuel cells and electrolyzers, etc.;
- Development, prototypation and validation of above mentioned energy systems for hydrogen storage and/or energy poli generation from renewable energy sources.

The work will be carried out in the framework of the European project STAGE STE, one of the three larger world initiatives on concentrated solar power, in the EU project EDEN, coordinated by FBK, and in the EU project BRICKER, participated by FBK as a partner.

In such project, the activity will be focused on developing ideas and concepts for energy generation from a medium scale CSP technology, looking to the improvement of the concepts and technologies developed within the FP7-Digespo project (www.digespo.eu).

Furthermore, the candidate will support design and development of components within EDEN project, a coordinated EU project by FBK – ARES (www.h2eden.eu), particularly design of hydrogen tank and integration issues with a solid oxide fuel cell.
Finally, the candidate will work within the EU project BRICKER, dedicated to the development of a poly-generation energy system for large public buildings, looking to the integration between concentrated solar power (PTC systems), biomass boiler, ORC system, a chiller. The work in FBK will be concentrated on modelling of energy system using lumped analysis.

**Job requirements:**
- Master Degree in Industrial Engineering, Energetic Engineering or related fields;
- solid technical skills on energy modelling, analytical and numerical evaluation of energy problems, and energy and mass balance;
- solid skills to model heat transfer, fluid dynamic, thermodynamic and multiphysic problems (Comsol or Ansys are required);
- solid skills in technology design;
- good knowledge of written and spoken English;
- availability for travelling;
- skills in problem solving.

**Additional requirements:**
- PhD Degree in Industrial, Energetic Engineering or other related fields will be positively evaluated;
- ability to work in a collaborative environment, with a strong commitment to achieve assigned objectives;
- good knowledge of using Comsol or Ansys are preferred
- use of Modelica / Dymola will be positively evaluated;
- ability on 3D CAD drawing;
- ability to perform interdisciplinary research and cooperation with academic and industrial partners;
- good level of spoken and written Italian language;
- ability to meet deadlines, even under pressure and strong organizational skills;
- ability to work in a multidisciplinary environment and in team.

Due to FBK’s attempt to promote equal opportunity and gender balance, in case of equal applications, female candidates will be given preference.

**Optional**

Short description concerning the exploitation of his/her own competences in relation to the proposed research work.
Employment:

Type of contract: collaboration contract
Number of positions: 1
Annual gross salary: from 33,300 to 38,000 €, depending on technical background and expertise in the field (Including meal vouchers or work canteen and welcome office support for visa formalities, accommodation, social security, etc.)
Start date: April 2014
Duration: 3 years
Place: Povo, Trento (Italy)

Application:

To apply online, please send your detailed CV with cover letter (pdf. format), a list of publications, statement of research interests, letter of motivation and the name of at least one referee
Please include in your CV also your authorization for the handling of your personal information as per the Italian Personal data Protection Code, Legislative Decree 196/2003.

Applications must be sent to jobs@fbk.eu
Emails should have the following reference code: ARES_Res2014
Application deadline: 30th March 2014

For further information, please contact the Human Resources Service at jobs@fbk.eu.

Those candidates who will pass the preliminary curricula screening will be contacted shortly for an interview. Those applicants who will not be selected, will be notified of the exclusion at the end of the selection process.

During the selection process, in addition to job interviews, candidates may be asked to fill in questionnaires, tests or take part in assessment centers.

Please note that FBK may contact those candidates admitted to evaluation within a period of 12 months for selection of similar vacancies.

For transparency purposes, the names of the selected candidates, if they have accepted the position, will be published on the FBK website at the bottom of the selection notice.