

# JRC-TÜBİTAK – CALL 2010

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## Profiles for Turkish Grantholders

### IE

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<b>JRC Institute</b>	<b>IE</b> <b>Institute for Energy</b>
<b>Location</b>	Petten, the Netherlands
<b>Reference no.:</b>	JRC.TUBITAK.1
<b>Title of profile:</b>	<b>Cleaning of raw syngases produced by gasification</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>Based on a sound knowledge of chemistry as well as practical experience of laboratory research methodologies work will be carried out on analysis of biomass and coal fuels and process residues using the range of equipment available at JRC-IE (e.g. GC-MS, FTIR) to establish chemical compositions and properties. Samples for analysis will be derived from the fuels used in the various gasification projects being carried within the Action and from products, process gases and residues produced during thermal treatment experiments. In particular, one study involves cleaning methods for syngases, including catalytic destruction of tars, and will necessarily include developing a range of detailed analysis methodologies for tracking the composition of syngases through the cleaning processes. The results will be used to select cleaning methods and to tailor the primary biomass (and coal) gasification process. The work will be carried out predominantly in the Institute for Energy, but could also be complemented by work carried out collaboratively with the host institute of the visiting post-doc.</p> <p>The work will involve learning and eventually operating process simulation and analysis equipment, collection and preparation of samples, including assisting in the development of methodologies for sample collection and preparation before analysis, the refinement of test protocols used in detailed analysis of samples and the processing, evaluation and reporting of results to the relevant project leader. Entering the test results into a database and maintaining the good order of the database will also be one of the responsibilities.</p> <p>The work will also involve assistance in the operation of various thermal treatment processes, including those represented by gasifier and the pyrolysis experimental facilities, mainly for the</p>

	purpose of understanding the needs for product/residue analysis and the possible ways good and representative samples can be taken and for general training purposes. Reference to the scientific literature will be required at various stages of the work and it is expected that the post-doc involved will be actively involved in the preparation of scientific publications.
<b>Required profile:</b>	University degree, preferably in the area of thermochemical processes for bioenergy production, chemical engineering, or chemistry. Relevant study/work experience in the above or a related R&D area is highly desirable.  An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a> Scientific contact point: David Baxter, <a href="mailto:david.baxter@jrc.nl">david.baxter@jrc.nl</a>

<b>JRC Institute</b>	<b>IE</b> <b>Institute for Energy</b>
<b>Location</b>	Petten, the Netherlands
<b>Reference no.:</b>	JRC.TUBITAK.2
<b>Title of profile:</b>	<b>Assessment of the impact of renewables on the operation of base-load power plants</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	The transition to a low-carbon economy requires the large-scale deployment of selected power generation technologies, such as renewables and carbon capture and storage (CCS). The successful candidate will look into the impact of large-scale penetration of intermittent renewable energy sources (wind and solar) on the operation and financial performance of the base-load power generation infrastructure, i.e. nuclear and CCS fossil fuel power plants, which will need to operate under partial/variable load conditions. This research activity entails analytical / stochastic modelling work with regards to the supply of electricity from wind and solar sources, the modelling and simulation of the operational behaviour of base-load plants, using process flow modelling, and an electricity production cost analysis.
<b>Required profile:</b>	University degree, preferably in the area of energy, mechanical, chemical or electrical engineering, complemented by a doctoral degree. Relevant study/work experience in the above or a related area is highly desirable.  An ability to work in a multi-national team and a very good level

	of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a> Scientific contact point: <a href="mailto:Evangelos.Tzimas@ec.europa.eu">Evangelos.Tzimas@ec.europa.eu</a>

<b>JRC Institute</b>	<b>IE</b> <b>Institute for Energy</b>
<b>Location</b>	Petten, the Netherlands
<b>Reference no.:</b>	JRC.TUBITAK.3
<b>Title of profile:</b>	<b>Assessment of ageing components in nuclear power plants</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>The project concerns the testing of fuel cells. It is to be carried out in the very dynamic, multilingual and collaborative working environment of the Cleaner Energy Unit (CEU) of the Institute for Energy of the Directorate-General Joint Research Centre (DG JRC) of the European Commission (EC).</p> <p>As part of the FCPoint (Fuel Cell Power chain integration &amp; testing) Action of the Institute, the project comprises</p> <ul style="list-style-type: none"> <li>• Execution of research projects and institutional activities related to fuel cells testing including diagnostics,</li> <li>• Development, experimental validation and benchmarking of testing procedures and test protocols for fuel cells, components, systems, and power chains using test facilities of the Institute and</li> <li>• Regular reporting of the test results in project reports and peer-reviewed scientific publications.</li> </ul>
<b>Required profile:</b>	<p>University degree in engineering, physics or chemistry. Relevant study/work experience in the above or a related R&amp;D area is highly desirable. Good knowledge in energy conversion technologies including fuel cells is required. The candidate should have good communication and inter-personnel skills.</p> <p>An ability to work in a multi-national team and a good level of spoken and written English is required (as this is the main working language at the Institute).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a> Scientific contact point: Georgios Tsotridis, <a href="mailto:georgios.tsotridis@jrc.nl">georgios.tsotridis@jrc.nl</a>

<b>JRC Institute</b>	<b>IE</b> <b>Institute for Energy</b>
<b>Location</b>	Ispra, Italy
<b>Reference no.:</b>	JRC.TUBITAK.4
<b>Title of profile:</b>	<b>Improved methods for characterising performance of advanced photovoltaic technologies</b>
<b>Position for:</b>	Pd.D. / Post-doctoral fellow
<b>Short description of activity:</b>	The JRC's European Solar Test Installation at Ispra, Italy, is a European reference laboratory for calibration of photovoltaic (PV) devices. ESTI's R&D work contributes to developing best practices in this field and supports the wider deployment of PV as part of the EU's goals for renewable energy. The proposed project (either a post-doc study or part of a PhD programme) will address energy rating approaches for emerging PV technologies, including indoor/outdoor testing campaigns and solar resource assessment.
<b>Required profile:</b>	The candidate should have a primary degree or Ph.D. in physics, chemistry, materials science or electrical engineering. Experience in one or more of the following is essential: photovoltaics, experimental measurement techniques, statistics, geographical information systems (GIS). The ability to work in a multi-national team and a good level of spoken and written English is essential.
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a> Scientific contact point: Nigel Taylor, <a href="mailto:nigel.taylor@ec.europa.eu">nigel.taylor@ec.europa.eu</a>

<b>JRC Institute</b>	<b>IE</b> <b>Institute for Energy</b>
<b>Location</b>	Petten, the Netherlands
<b>Reference no.:</b>	JRC.TUBITAK.5
<b>Title of profile:</b>	<b>Gas impurities effects on the long term stability of materials for storage of hydrogen</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	Hydrogen sorption in solid-state materials and systems is one of the technological options aiming at the solution of the present hydrogen storage problem, which consists principally in the difficulty to attain the required energy density and efficiency. Among other hurdles, the achievement of a long-term, cycled

	<p>stability of the storage systems is essential to the success of this technological option. On top of that gas impurities present in hydrogen, such as O<sub>2</sub>, H<sub>2</sub>O, CO, CH<sub>4</sub>, are known to reduce the material's overall storage capacity and influence their long-term stability.</p> <p>At JRC, an activity of quantitative assessment of long term stability of magnesium hydride was accomplished in 2009, by developing an ad-hoc cycling facility and assessing the influence of specific amount of O<sub>2</sub>, H<sub>2</sub>O and CO in hydrogen.</p> <p>The proposed project will build up on the previous experience, investigating the extent of gas impurity influence in relation to various concentrations and combinations of impurities and assessing the degradation mechanism by means of micro-structural and analytical techniques. The materials to be used will be initially an application-near TiFe alloy with additives, and at a later stage complex but more promising compounds such NaAlH<sub>4</sub>-based hydrides. This activity is entirely experimental building on current experience on gas impurities studies under the institutional research programme. It will exploit the IE's specialised facilities on hydrogen solid-state storage and on microstructural analysis by means of Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), X-ray and Neutron Diffraction and X-ray fluorescence (XRF).</p>
<b>Required profile:</b>	<p>University degree, preferably in the area of chemistry, engineering, materials science or physics. Relevant study/work experience in the above or a related R&amp;D area is highly desirable.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	<p>Administrative contact point:  Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a></p> <p>Scientific contact point:  Pietro Moretto, <a href="mailto:pietro.moretto@jrc.nl">pietro.moretto@jrc.nl</a></p>

<b>JRC Institute</b>	<b>IE Institute for Energy</b>
<b>Location</b>	Petten, the Netherlands
<b>Reference no.:</b>	JRC.TUBITAK 6
<b>Title of profile:</b>	<b>Modelling the transition to a low carbon power system</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	The proposed work falls in the context of the activity on trans-European energy networks and systems of the future pursued by the European Strategic Energy Technology Plan (SET-Plan - COM(2007) 723). The scope of the research is to contribute to

	the development of a multiregional, multi-temporal, Geographic Information System (GIS) and linear programming model of capacity expansion in the European power sector up to 2050. The goal of this model is to address planning and operational issues (e.g. management of resource variability, spatial planning of generating and transmission capacities, grid requirements, load management, end-use deployment etc.) due to the transition towards increasing penetration level of variable low-carbon energy technologies such as renewable in the power sector and the increased electrification of end-use applications such as electric vehicles. The research will also comprise the making of scenarios and analysis of the economics aspects of the related modelling activity with a time horizon 2010-2050.
<b>Required profile:</b>	A candidate with a PhD in Energy or Economics or Engineering (or equivalent). Knowledge of Geographic Information System (GIS) and GAMS programming language is important. Prior Knowledge in numerical modelling of energy systems or energy infrastructure planning models or capacity expansion models or partial equilibrium models of the energy systems is a valuable asset.  An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a>  Scientific contact point: <a href="mailto:Arnaud.mercier@jrc.nl">Arnaud.mercier@jrc.nl</a>

<b>JRC Institute</b>	<b>IE</b> <b>Institute for Energy</b>
<b>Location</b>	Ispra, Italy
<b>Reference no.:</b>	JRC.TUBITAK.3
<b>Title of profile:</b>	<b>Assessment of Technologies and Policies for Improved Energy Efficiency and Renewable Energies in New Low Energy Buildings</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	Buildings consume about 40% of primary energy and offer a large energy saving potential with the introduction of very efficient technologies for lighting, HVAC, computers, etc. and effective insulation, and at the same time building allow the introduction of local renewable energy sources such as PV, solar thermal, heat pumps, biomass, etc. Buildings that consume no energy (zero energy or zero emission buildings) are already being designed, and are expected to have a considerable share of the new building market by 2020.

	<p>The research project should focus on the assessment of the technologies and associated costs for the zero energy or zero emission buildings, to assess the likely impact on energy consumption in 2020 in a few selected European countries and to assess the policy options to foster a significant penetration of the zero energy or zero emission buildings (regulations, incentives, financial schemes, etc.)</p> <p>The work will also involve assistance in the operation of the European GreenBuilding Programme, and the assessment of the applications for new non-residential buildings. Reference to the scientific literature will be required at various stages of the work and it is expected that the post-doc involved will be actively involved in the preparation of scientific publications.</p>
<b>Required profile:</b>	<p>University degree, preferably in the area of electrical engineering, mechanical engineering, materials science or building physics. Relevant study/work experience in the above or a related R&amp;D area is highly desirable.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	<p>Administrative contact point:  Francesco Scaffidi, <a href="mailto:francesco.scaffidi-argentina@ec.europa.eu">francesco.scaffidi-argentina@ec.europa.eu</a></p> <p>Scientific contact point:  Paolo Bertoldi, <a href="mailto:paolo.bertoldi@ec.europa.eu">paolo.bertoldi@ec.europa.eu</a></p>

## IPSC

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<b>JRC Institute</b>	<b>IPSC</b> <b>Institute for the Protection and the Security of the Citizen</b>
<b>Location</b>	Ispra, Italy
<b>Reference no.:</b>	JRC.TUBITAK. G09.-1
<b>Title of profile:</b>	<b>Prudential Regulations</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	Work on prudential regulations and in particular on deposit guarantee schemes and deposit protection. The candidate will work on the quantitative impact assessment supporting the legislative activity of the European Commission in the domain. Academic papers will also be attended to. For more information see JRC reports at the European Commission page:  <a href="http://ec.europa.eu/internal_market/bank/guarantee/index_en.htm">http://ec.europa.eu/internal_market/bank/guarantee/index_en.htm</a>
<b>Required profile:</b>	The candidate should have a PhD in economics or econometrics and a good knowledge of applied econometrics.  An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: <a href="mailto:JRC-IPSC-ENLA@ec.europa.eu">JRC-IPSC-ENLA@ec.europa.eu</a>  Scientific contact point: <a href="mailto:Francesca.Campolongo@jrc.ec.europa.eu">Francesca.Campolongo@jrc.ec.europa.eu</a>

<b>JRC Institute</b>	<b>IPSC</b> <b>Institute for the Protection and the Security of the Citizen</b>
<b>Location</b>	Ispra, Italy
<b>Reference no.:</b>	JRC.TUBITAK. G02-4
<b>Title of profile:</b>	<b>Computational Linguist</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	The candidate will be integrated in the Open Source Information Text Mining and Analysis (OPTIMA) action whose activities include automatic multilingual text analysis. Typical examples of topics currently under development in the action are automatic event extraction, automatic entity recognition and cross-language clustering. Related techniques are eventually applied in several operational applications, such as EMM and Medisys developed in the action. The successful candidate would contribute to these activities and applications by means of enhancing the Turkish language processing component.

<b>Required profile:</b>	Background in computational linguistics or computer science  An ability to work in a multi-national team and a very good level of spoken and written English and Turkish is required.
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: <a href="mailto:JRC-IPSC-ENLA@ec.europa.eu">JRC-IPSC-ENLA@ec.europa.eu</a>  Scientific contact point: E van der Goot ( <a href="mailto:erik.van-der-goot@jrc.ec.europa.eu">erik.van-der-goot@jrc.ec.europa.eu</a> )

<b>JRC Institute</b>	<b>IPSC</b> <b>Institute for the Protection and the Security of the Citizen</b>
<b>Location</b>	Ispira, Italy
<b>Reference no.:</b>	JRC.TUBITAK. G02-3
<b>Title of profile:</b>	<b>Tsunami Analysis</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p><b>“Expert on fluid dynamics modelling”</b> The candidate will be integrated in a research group working on natural disaster modelling and in particular tsunami early warning systems.</p> <p><u>Brief research plan</u> The work programme includes the analysis of Tsunami scenarios related to the Hellenic Arc and the Anatolian fault both from a historical perspective and Early Warning point of view. Pending availability of bathymetric data during the research activity, risk analyses and inundation calculations on selected scenarios will be performed.</p> <p><u>Research background</u> The research activity will focus on selecting a number of potential earthquake scenarios in the area indicated above, development of nodalisation schemes and running the scenarios with several computer codes (SWAN, TUNAMI, MOST, HyFlux2 or other codes if available) to identify the merits of the various codes. Special attention will be given to the use of advanced numerical and solution schemes such as quad-3 or refinement of nodalisation close to geographical discontinuities.</p> <p>The objective is the evaluation of the performance of fast running methods for early warning systems in comparison with detailed analytical methods which can be used in post-event analyses.</p> <p>The activity can benefit from the contacts that we have with Prof. T. Taymaz from Istanbul Technical University and with Prof. A. Yalçınır from Middle East Technical University.</p>

<b>Required profile:</b>	<p>The candidate should demonstrate experience in the field of fluid dynamics numerical modelling. Knowledge of tsunami and natural disaster related problems is an advantage.</p> <p>Background in engineering, mathematics, numerical modelling, or fluid dynamics. Knowledge of programming languages will be necessary (Fortran or C).</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	<p>Administrative contact point:  <a href="mailto:JRC-IPSC-ENLA@ec.europa.eu">JRC-IPSC-ENLA@ec.europa.eu</a></p> <p>Scientific contact point:  A. Annunziato (<a href="mailto:alessandro.annunziato@jrc.ec.europa.eu">alessandro.annunziato@jrc.ec.europa.eu</a> )</p>

<b>JRC Institute</b>	<b>IPSC</b> <b>Institute for the Protection and the Security of the Citizen</b>
<b>Location</b>	Ispira, Italy
<b>Reference no.:</b>	JRC.TUBITAK. G06-5
<b>Title of profile:</b>	<b>Global Navigation Satellite System (GNSS) Security</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>The <b>post-doctoral scientist</b> will join a small team focusing on a vulnerability assessment of both mass market and professional global navigation satellite system (GNSS) receivers. The candidate will carry out measurements using a laboratory test-bed specifically designed to assess the robustness of GNSS receivers to both intentional and unintentional interferences (e.g., CW carrier, DVB-T harmonics, spoofing). Countermeasures for the spoofing attacks will be designed and tested in the laboratory facility.</p>
<b>Required profile:</b>	<p>The position requires proven knowledge of GNSS systems. Particularly, knowledge of the most common interference and spoofing mitigation techniques presently in use. Knowledge of software defined GNSS platforms and practical experience in the implementation of ad-hoc mitigation techniques is a plus. Knowledge of software defined radio is desirable.</p> <p>The candidate is also required to have experience with tools as advanced digital signal processing with Matlab, and basic knowledge of Java/C/C++ programming. Experience with the design and operation of real-time software GNSS receivers under a Linux platform is a plus. Proficiency in real-time embedded software design on FPGA platforms is desired.</p> <p>Having a good record of publications in IEEE/IEE journals will</p>

	<p>be considered as an advantage.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	<p>Administrative contact point:  <a href="mailto:JRC-IPSC-ENLA@ec.europa.eu">JRC-IPSC-ENLA@ec.europa.eu</a></p> <p>Scientific contact point:  <a href="mailto:Pravir.Chawdhry@jrc.ec.europa.eu">Pravir.Chawdhry@jrc.ec.europa.eu</a></p>

<b>JRC Institute</b>	<b>IPSC</b> <b>Institute for the Protection and the Security of the Citizen</b>
<b>Location</b>	Ispra, Italy
<b>Reference no.:</b>	JRC.TUBITAK. G09-2
<b>Title of profile:</b>	<b>Indicators</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>Work on the methodology for constructing composite indicators. The work will entail both applicative work on indicators development projects with international organizations such as the European Commission, the UN, the OECD and others as well as methodological developments. For more information on ongoing projects in the domain see:</p> <p><a href="http://composite-indicators.jrc.ec.europa.eu/">http://composite-indicators.jrc.ec.europa.eu/</a></p>
<b>Required profile:</b>	<p>The candidate should have a PhD Statistics or Econometrics and a good knowledge of applied statistics or econometrics</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	<p>Administrative contact point:  <a href="mailto:JRC-IPSC-ENLA@ec.europa.eu">JRC-IPSC-ENLA@ec.europa.eu</a></p> <p>Scientific contact point: <a href="mailto:Michela.Nardo@jrc.ec.europa.eu">Michela.Nardo@jrc.ec.europa.eu</a></p>

<b>JRC Institute</b>	<b>IPSC</b> <b>Institute for the Protection and the Security of the Citizen</b>
<b>Location</b>	Ispra, Italy
<b>Reference no.:</b>	JRC.TUBITAK. G07-6
<b>Title of profile:</b>	<b>Natech risk mapping</b>
<b>Position for:</b>	Post-doctoral fellow

<p><b>Short description of activity:</b></p>	<p>Recent major natural disasters, such as e.g. the 1999 Kocaeli earthquake, the 2002 summer floods in Europe, or the 2005 hurricanes in the US to name a few, have highlighted the emergence of a new type of risk that occurs when the natural and technological worlds collide. This is of particular concern when the natural event impacts a chemical facility where it may lead to the release of hazardous materials with possibly severe consequences for man, the natural or built environment. This kind of chemical accident is referred to as “Natech” accident. Natech risk is expected to increase in the future due to climate change and the increasing vulnerability of our society.</p> <p>In order to be able to prevent, prepare for or respond to Natech accidents authorities need to identify Natech-prone areas in their respective countries. This requires knowledge of the location of the natural hazards, of the chemical hazards within natural-hazard areas, and the interrelation between both hazards. A recent study has shown that hardly any Natech risk maps exist within the EU or OECD, thus hampering effective Natech risk management. Moreover, Natech hazard maps – where they exist – are usually created by simply overlaying the natural and technological hazard layers but they do not consider any site-specific features, such as e.g. the type of industrial facility, expected release scenarios under natural-disaster conditions, safety measures implemented, etc. In order to bridge this gap this project aims at developing a methodology for realistic Natech risk mapping and includes the following tasks (for selected natural hazards):</p> <ul style="list-style-type: none"> <li>• Development of a methodology for Natech risk mapping and its implementation in a GIS environment;</li> <li>• Assessment of the interrelation of natural and technological hazards for creating realistic Natech scenarios;</li> <li>• Ranking of industrial sites with respect to Natech hazard potential by considering natural-hazard risks, site features, failure and release scenarios (fire, explosion, toxic release), secondary effects (e.g. domino effect) and risk receptors.</li> </ul> <p>The developed methodology will be validated for selected case-study areas e.g. in Turkey and/or EU Member States. The choice of the case-study areas will depend on data availability.</p>
<p><b>Required profile:</b></p>	<p>Ph.D. in engineering or physical sciences and demonstrated experience in the field.</p> <p>The successful candidate should have good knowledge of spatial analysis and modeling tools for industrial risk assessment and mapping. Experience in GIS programming is requested. Experience in the design, development and testing of software packages (including web applications) in the field of industrial risk analysis and emergency management is an advantage. Familiarity with the characteristics of Natech accidents is an asset.</p> <p>An ability to work in a multi-national team and a very good level</p>

	of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: <a href="mailto:JRC-IPSC-ENLA@ec.europa.eu">JRC-IPSC-ENLA@ec.europa.eu</a> Scientific contact point: Elisabeth Krausmann, <a href="mailto:elisabeth.krausmann@jrc.ec.europa.eu">elisabeth.krausmann@jrc.ec.europa.eu</a>

# IRMM

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<b>JRC Institute</b>	<b>IRMM</b> <b>Institute for Reference Materials and Measurements</b>
<b>Location</b>	Geel, Belgium
<b>Reference no.:</b>	JRC.TUBITAK.1
<b>Title of profile:</b>	<b>Comparison and Characterisation of ELISA test kits for the determination of mycotoxins</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	Assessing the performance of various ELISA test kits for the determination of aflatoxins and trichothecenes in food and feed products and their application in official food control.
<b>Required profile:</b>	<p>The ideal candidate has a PhD in analytical chemistry or comparable field with good practical skills and should have a strong interest and willingness to translate discussed strategies into experiments. A good background in chromatography and immunological methods (ELISA), knowledge and practical experience in this field, is an asset.</p> <p>The candidate must be self motivated and able to work independently as well as in a team. The candidate must be capable to work with standard office programs and be able to work him/herself into technical programs to operate laboratory equipment (under supervision) and be able to gather/compile/summarize analytical results by suitable programs (e.g. MS Excel). Knowledge in the statistical evaluation of results is a strong asset.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Noemi Vankrunkelsven: <a href="mailto:noemi.vankrunkelsven@ec.europa.eu">noemi.vankrunkelsven@ec.europa.eu</a>

# ITU

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<b>JRC Institute</b>	<b>ITU</b> <b>Institute for Transuranium Elements</b>
<b>Location</b>	Karlsruhe, Germany
<b>Reference no.:</b>	JRC.TUBITAK.4
<b>Title of profile:</b>	<b>Scenarios analyses of advance nuclear fuel cycles</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>A new user friendly version of the fuel cycle analysis code KORIGEN has been developed and incorporated into the JRC's nuclear science web portal NUCLEONICA (<a href="http://www.nucleonica.net">www.nucleonica.net</a>). In addition to providing a powerful, easy to use software tool for nuclide depletion calculations in PWRs, BWRs and fast reactors, this development provides a model approach to preservation of nuclear knowledge and competence transfer between the generations.</p> <p>The present project concerns the development of a scenario analyses module to analyse nuclear fuel cycle material requirements for both once through and recycling options for use in Nucleonica and the implementation of libraries for new reactor types (CANDUs etc.). This module will allow the estimation of long-term material requirements including evaluations of the actinide and fission product accumulations. The scope of the calculations will range from reactors parks based on existing commercial reactors and fuel types through to advanced designs with once through, thermal and fast recycle. The module should be integrated into Nucleonica and work interactively with existing modules. Depletion calculations will be based on the webKORIGEN module.</p> <p>The successful candidate will work in a multidisciplinary team environment in close collaboration with various groups in the Institute. Potential collaboration with the IAEA is foreseen.</p>
<b>Required profile:</b>	The candidate should have a PhD in materials science, nuclear/mechanical engineering, metallurgy, chemistry, physics, etc. Knowledge of nuclear physics, nuclear engineering, P&T fuel cycles, and computational modelling would be an advantage. An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Kristzina Varga, <a href="mailto:kristzina.varga@ec.europa.eu">kristzina.varga@ec.europa.eu</a> Scientific contact point: Joseph Magill, <a href="mailto:joseph.magill@ec.europa.eu">joseph.magill@ec.europa.eu</a>

<b>JRC Institute</b>	<b>ITU</b> <b>Institute for Transuranium Elements</b>
<b>Location</b>	Karlsruhe, Germany
<b>Reference no.:</b>	JRC.TUBITAK.5
<b>Title of profile:</b>	<b>A virtual research environment for nuclear science experiments</b>
<b>Position for:</b>	Ph.D / Post-doctoral fellow
<b>Short description of activity:</b>	<p>The position is to help with the planning and development of a highly challenging virtual research environment ("Hot-Cells") within the Nucleonica nuclear science portal. Nucleonica's "Hot-Cells" is a virtual research environment in which students and scientists can create and share web-based nuclear science applications directly related to their research.</p> <p>In contrast to traditional web-based programming and scripting languages, where programming skills are required, Hot-Cells applications are created by combining already existing modules in a browser "canvas" through essentially drag and drop operations. The applications work by enabling users to "pipe" information from one module to another and by using rules on how the output should be modified (through filtering for example).</p> <p>The approach is based on inquiry based learning, and in particular allows the user to concentrate on the science rather than on the computing. This highly modular, user friendly approach to building "experiments" ensures that the learning times are kept to a minimum and is particularly suitable for education and training purposes.</p>
<b>Required profile:</b>	The candidate should be a skilled programmer with experience in a variety of programming languages. In particular experience with .NET, visual studio, xml, and web services would be an advantage. A background in physics, chemistry, etc would also be of benefit. An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Krisztina Varga, <a href="mailto:krisztina.vargal@ec.europa.eu">krisztina.vargal@ec.europa.eu</a> Scientific contact point: Joseph Magill, <a href="mailto:joseph.magill@ec.europa.eu">joseph.magill@ec.europa.eu</a>

<b>JRC Institute</b>	<b>ITU</b> <b>Institute for Transuranium Elements</b>
<b>Location</b>	Karlsruhe, Germany
<b>Reference no.:</b>	JRC.TUBITAK.6
<b>Title of profile:</b>	<b>Degradation of UO<sub>2</sub> in presence of corroding iron</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	Electrochemical study of surface reactions occurring at UO <sub>2</sub> -, Simfuel- and spent fuel- electrodes in contact with steel under inert gas and hydrogen atmosphere. The objective is to clarify the mechanism of UO <sub>2</sub> corrosion reactions under the influence of hydrogen. In the study, analytical in-situ methods sensitive to surface reactions (electrochemical corrosion testing and impedance measurements) are used as well as ex-situ techniques like SEM/EDS and solution analysis (e.g. ICP-MS, ICP-OES).
<b>Required profile:</b>	University degree in chemistry or physics, good knowledge in electrochemistry, knowledge in radiochemistry would be an advantage as well as experience with ICP-MS, ICP-OES  An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: <a href="mailto:Irmgard.HENZEL@ec.europa.eu">Irmgard.HENZEL@ec.europa.eu</a>  Scientific contact point: <a href="mailto:Detlef.Wegen@ec.europa.eu">Detlef.Wegen@ec.europa.eu</a>

# IPTS

<b>JRC Institute</b>	<b>IPTS</b> <b>Institute for Prospective Technological Studies</b>
<b>Location</b>	Seville, Spain
<b>Reference no.:</b>	JRC TUBITAK
<b>Title of profile:</b>	Quantitative Analysis of Agricultural Markets
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>The successful candidate will be working in a project on economic analysis of Turkey's agricultural markets, which is focused on the understanding of implications of future EU Enlargements on European agricultural markets. The research aims at the development and application of adequate methodologies for analysing European agricultural policies in the context of an enlarged EU market.</p> <p>Specific responsibilities include:</p> <ul style="list-style-type: none"> <li>- Identification and analysis of main policy issues related to agricultural markets in Turkey;</li> <li>- Collection and validation of agricultural data in Turkey at regional level in order to incorporate them to existing agricultural sector models;</li> <li>- Expansion of the Institute's agricultural modelling research and networks;</li> <li>- Preparation of reports for policymakers, publication of scientific articles and technical reports, participation to scientific conferences, validation and evaluation of research results and publications.</li> </ul>
<b>Required profile:</b>	<p>The candidate should have a track record of research in the area of agricultural statistics and (market) policies for Turkey, with some experience in economic modelling and quantitative analysis. The candidate should also be familiar with agricultural trade models, respective methodologies and databases as well as with the associated trade policy issues in the European context. Knowledge of the recent developments in the EU agricultural policy and World Trade Organisation negotiations and their implications for the competitiveness of European agriculture is an advantage.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Gesa Auf der Heyde, <a href="mailto:jrc-ipts-recruitment@ec.europa.eu">jrc-ipts-recruitment@ec.europa.eu</a>

	Scientific contact point: Robert M'Barek, <a href="mailto:robert.m'barek@ec.europa.eu">robert.m'barek@ec.europa.eu</a>
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<b>JRC Institute</b>	<b>IPTS</b> <b>Institute for Prospective Technological Studies</b>
<b>Location</b>	Seville, Spain
<b>Reference no.:</b>	JRC-TUBITAK
<b>Title of profile:</b>	<b>IPPC (Integrated Pollution Prevention and Control) Best Available Techniques</b>
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>Overall purpose:</p> <p>To contribute to the identification and assessment of an exchange of technical information on "best available techniques" within the framework Integrated Pollution Prevention and Control Directive of the European Union and document the results in one or more reference documents.</p> <p>* IPPC – Integrated Pollution Prevention and Control</p> <p><a href="http://eippcb.jrc.es/">http://eippcb.jrc.es/</a></p>
<b>Required profile:</b>	<p>A good candidate for the will typically have the following profile:</p> <ul style="list-style-type: none"> <li>- education in one of the following domains: Chemistry, Engineering, Physics</li> <li>- a good understanding of process engineering, environmental issues and regulation of industry;</li> <li>- particular knowledge and understanding of a target industry sector according to the work program;</li> <li>- understanding of environmental policy;</li> <li>- thorough knowledge of the IPPC Directive and the concepts within;</li> </ul> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	Administrative contact point: Gesa Auf der Heyde, <a href="mailto:jrc-ipts-recruitment@ec.europa.eu">jrc-ipts-recruitment@ec.europa.eu</a> Scientific contact point: Luis Delgado, <a href="mailto:luis.delgado@ec.europa.eu">luis.delgado@ec.europa.eu</a>

<b>JRC Institute</b>	<b>IPTS</b> <b>Institute for Prospective Technological Studies</b>
Location	Seville, Spain
Reference no.:	JRC.TUBITAK.7
Title of profile:	<b>Sustainable Production and Consumption : Environmental Techno-economic analysis</b>
Position for:	Post-doctoral fellow
Short description of activity:	<p>The Sustainable Production and Consumption Unit has a vacancy for a post-doctoral researcher to work in the field of clean technologies and products and environmental economics. The research will focus on the analysis of environmental and economic aspects of consumption and production patterns and relevant policy implications. It will also cover the analysis of environmental policies and related regulatory instruments.</p> <p>The successful candidate's main tasks will consist of conducting, formulating and coordinating techno economic studies, the management and monitoring of research tasks, analysis and summary of results and preparation of reports for policy makers.</p>
Required profile:	<p>He/she should have an academic and professional background in environmental sciences or engineering and in applied economics or environmental economics, with experience in environmental assessment. He/she should have a good overview of the different environmental problems and main industrial sources. Candidates should have a good understanding of relationship between economy, technology, environment and consumption and production patterns. Knowledge of quantitative tools, i.a, LCA tools, environmental impact assessment methods, environmentally extended input output analysis and economic environmental models, is an advantage. Experience in the acquisition, management and monitoring of research projects are required along with very good communication skills.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
Indicative duration:	12 months
JRC Contact	<p>Administrative contact point: Ms. Gesa Auf der Heyde, <a href="mailto:jrc-ipts-recruitment@ec.europa.eu">jrc-ipts-recruitment@ec.europa.eu</a></p> <p>Scientific contact point: Mr. Luis Delgado, <a href="mailto:luis.delgado@ec.europa.eu">luis.delgado@ec.europa.eu</a></p>

<b>JRC Institute</b>	<b>IPTS</b> <b>Institute for Prospective Technological Studies</b>
<b>Location</b>	Seville, Spain
<b>Reference no.:</b>	JRC TUBITAK
<b>Title of profile:</b>	Quantitative Analysis of Farm-Household Economics and Rural Development
<b>Position for:</b>	Post-doctoral fellow
<b>Short description of activity:</b>	<p>The successful candidate will be working in a project on economic analysis of Agricultural Holdings with focus on Acceding and Candidate Countries, which is focused on the understanding of implications of future EU Enlargements on farming and rural areas in selected regions. The research aims at the development and application of adequate methodologies for analysing the economic impact of agricultural policies.</p> <p>Specific responsibilities include:</p> <ul style="list-style-type: none"> <li>- Identification and analysis of main policy issues related to agriculture and rural areas</li> <li>- Collection and processing of agricultural data, including farm-household and regional level;</li> <li>- Expansion of the Institute's agricultural quantitative research and networks;</li> <li>- Preparation of reports for policymakers, publication of scientific articles and technical reports, participation to scientific conferences, validation and evaluation of research results and publications.</li> </ul>
<b>Required profile:</b>	<p>The candidate should have a track record of research in the area of agricultural economics and policy, with good experience in quantitative analysis and modelling. Knowledge of the recent developments in the agricultural policies at EU and national level, and their implications for the farming sector and rural development in required.</p> <p>An ability to work in a multi-national team and a very good level of spoken and written English is required (as this is the main working language).</p>
<b>Indicative duration:</b>	12 months
<b>JRC Contact</b>	<p>Administrative contact point: Gesa Auf der Heyde, <a href="mailto:jrc-ipts-recruitment@ec.europa.eu">jrc-ipts-recruitment@ec.europa.eu</a></p> <p>Scientific contact point: Sergio Gomez y Paloma; <a href="mailto:Sergio.gomez-y-paloma@ec.europa.eu">Sergio.gomez-y-paloma@ec.europa.eu</a></p>