The Helsinki Institute of Physics (HIP, www.hip.fi) is a joint research institute of five universities – University of Helsinki, Aalto University, University of Jyväskylä, Lappeenranta University of Technology, and Tampere University of Technology. Administratively HIP is associated with the University of Helsinki. HIP has a national mandate to practise and promote basic research at international accelerator centres, to facilitate applied research and development, and to participate in graduate education in physics. HIP coordinates Finnish research at CERN and at FAIR GmbH.

The Helsinki Institute of Physics has two open positions for

**Postdoctoral researchers (up to 4 years)**

**Novel instrumentation for nuclear safety, security and safeguards**

Two postdoctoral research positions are available within the newly approved FiDiPro research project *Novel instrumentation for nuclear safety, security and safeguards (NINS3)*. This project is run by a consortium of Finnish companies, academia and authorities. It is based at the Helsinki Institute of Physics; the appointments will be at the University of Helsinki. The appointments are for a period of up to 4 years, starting with an evaluation period of 4 months.

FiDiPro - the Finland Distinguished Professor Programme (www.fidipro.fi) enables distinguished researchers from abroad to work and team up with the 'best of the best' in Finnish academic research. The NINS3 project is financed by Tekes - the Finnish Funding Agency for Innovation (www.tekes.fi) and will be led by the FiDiPro Professor Peter Dendooven from KVI-Center for Advanced Radiation Technology, University of Groningen, the Netherlands.

**Project description**

Good stewardship of nuclear materials and an adequate response to threats that potentially involve nuclear materials are essential now and far into the future. In order to perform these nuclear safety, security and safeguards tasks, suitable instrumentation is needed. The FiDiPro research project NINS3 aims at developing such state-of-the-art instrumentation and bringing it closer to commercial application.

The postdoctoral researchers will develop novel gamma-ray imaging technology for both passive tomography of spent nuclear fuel and active neutron interrogation of unknown objects. This involves the design, construction and testing of gamma-ray imaging instrumentation and image reconstruction software. The development process will be guided by detailed Monte Carlo simulations.
Requirements
Applicants should have a PhD in physics, engineering or a related field. Experience with state-of-the-art instrumentation for the detection and/or imaging of ionizing radiation is desired. Familiarity with GEANT4 or image reconstruction software is an asset. Initiative, inventiveness, and communication skills are important competences. A good command of the English language (speaking and writing) is required as the research results will be published in international peer-reviewed journals and presented at international conferences.

Conditions of employment
The salary will be based on the Finnish universities teaching and research personnel’s job requirement level 5 (post-doc). In addition, part of the salary will be based on the personal performance. The salary bracket will be approximately 3 127 - 3 641 €/month.

How to apply?
Applicants should provide a short outline of their knowledge and experience, a statement of their research interest, curriculum vitae, publication list and at least 2 written references.
Applications must be addressed to Helsinki Institute of Physics. The applications and the required enclosures should be submitted through the electronic application system. The link to the e-form can be found in www.hip.fi/fidipro. Applications may also be sent to the following postal address: Registry of the University of Helsinki, PO Box 33 (Yliopistonkatu 4), 00014 UNIVERSITY OF HELSINKI, Finland.
The deadline for sending your application is January 5, 2015.

For further information on the research project, please contact the project leader FiDiPro Professor Peter Dendooven at KVI-Center for Advanced Radiation Technology, University of Groningen (p.g.dendooven (at) rug.nl, phone: +31-50-363 3615 / 3600) or Professor Paula Eerola at the Helsinki Institute of Physics, University of Helsinki (paula.eerola (at) helsinki.fi, phone: +358 29 41 50 140 / 521).