

## Accelerator Physicist

- Institute for Research in Fundamental Sciences, School of Particle and Accelerator, Tehran, Iran.

The accelerator group of the Institute for Research in Fundamental Sciences (IPM) invites applications for a Post-doc position to commence on 1 July 2020 or as soon as possible thereafter. The position will be based in the School of Particles and Accelerators of IPM as part of the high energy physics research group. The appointment will strengthen the group's existing international collaboration with the CERN projects, and participate in future initiatives in the field.

### Group Description

The accelerator group at IPM aims for research and development in the field of accelerator physics through investigation on modern accelerators projects worldwide. The Accelerator investigation encompasses different studies such as lattice design, radio-frequency, beam diagnostic, magnets, vacuum, electron sources, theoretical and computational electrodynamics, and plasma physics. Since 2008, our group has been in large collaboration with CERN, the European Organization for Nuclear Research, where physicists and engineers are probing the fundamental structure of the universe. The collaboration covers many different advanced international projects including CLIC, LINAC4, AWAKE, COMPACTLIGHT, NIMMS, LEIR, *etc.* We are currently looking forward to more scientific international collaborations.

IPM is working towards training inspired scientists according to international standards to domesticate this strategic field of science in the country.

### Job Description

#### Introduction

To develop the field of accelerator physics in our country with numerous impressive applications, IPM seeks a hardworking scientist with excellent interpersonal skills to research on novel projects and ideas as a member of the team and also individually.

The design of new accelerators and performance optimization of the existing machines require the development of accurate and predictive models of the beam dynamics, both linear and non-linear, together with powerful techniques and simulation tools. The performance of modern accelerators calls for driving the machine operation according to the models established by theory and simulations. Models of this kind provide an appropriate platform for the design and development of the new generations of accelerators.

As an accelerator physicist, you will participate in one or more of the group activities related to beam dynamics studies, RF structural design, magnet design, particle in cell simulations, radiation and more specific development of new models for the studies of beam dynamic and finally construction, commissioning, and operation of conventional/novel accelerators.

The successful candidate will be experienced in the field of electrodynamics and more specifically in accelerator physics design and/or construction, beam dynamics, RF engineering, plasma physics, laser-beam interactions and free electron lasers.

If you are a highly motivated and qualified applicant to work in an exciting environment at the forefront of modern sciences, do not hesitate to send us the required documents as listed below.

## **Qualifications**

A Ph.D. in the field of Physics, or Engineering.

## **Experience:**

The experiences required for this position are:

- Experience in the field of physics or engineering with comprehensive knowledge of electrodynamics, plasma physics, and laser physics.
- Experience to work in a scientific environment preferably for the design, construction, operation of particle accelerators.
- Experience with multi-particle beam dynamics simulation codes.

The following experience would be considered an asset:

- Experience of accelerator physics, with demonstrated ability to compute beam optics.

- Experience with one of the following codes: ASTRA, PARMELA, ELEGANT, HFSS, CST, COMSOL, WARP, FBPIC, QUICKPIC, LCODE, SPECTRA, GENESIS, SRW.
- Knowledge and application of massive numerical simulations with modern simulations codes.
- Experience of experimental techniques and analysis of data from beam measurements.

**Documents:**

- A scanned copy of your latest relevant qualification (Ph.D.).
- A CV and a motivation letter (be as broad as possible).
- Three reference letters giving an overview of your academic and/or professional achievements.

If you are interested, please apply with the required documents before Jun. 20, 2020 via our application system:

<http://particles.ipm.ir/postdoc/index.jsp?ReqType=1>.

Please do not hesitate to contact us if you require any more information by:

[Particles@ipm.ir](mailto:Particles@ipm.ir); [Mojtaba@ipm.ir](mailto:Mojtaba@ipm.ir).