**KAIST NCS JOB DESCRIPTION**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Recruitment area | Research  (Post-Doc) | 분류체계 | Parent category | Sub-category | Sub sub-category | Sub sub-sub-category |
|  |  |  |  |
| Mission | ○ Korea Advanced Institute of Science and Technology (KAIST) Act  - Educating outstanding talent proficient in theory and practice as required in the fields of science and technology for industrial development  - Carrying out the nation’s mid- and long-term R&D, and basic and applied research to foster national competitiveness in science and technology  - Providing comprehensive support to research conducted by other research centers and industries | | | | | |
| KAIST’s major businesses | ○ Education: Fostering creative talent, strengthening convergence education, nurturing global leaders in science and technology, strengthening human resource capacity  ○ Research: Support for development of outstanding research projects, acquisition of specialized researchers, advancement of entrepreneurial culture, creation of high value-added intellectual property rights, promotion of technology transfer/commercialization, and development of large-scale, leading projects  ○ Cooperation: Creating a working environment to be at par with global standards, and multifaceted cooperation for global leadership  ○ Administration: Provision of administrative and technical service for international students/ faculty (Support for operation of a “Korean-English bilingual campus”) | | | | | |
| Growth engines | ○ Vision: Global Value-Creative World-Leading University  - Hub for Fostering Knowledge Creation and Global Convergence Talents  - Center for the World-Leading New Knowledge and Technology)  ○ Five innovation initiatives: Innovation in education, research, technology commercialization, globalization and future strategies  ○ 3C Leadership: Change, Communication, Care | | | | | |
| Duties and responsibilities | ○ Perform research and create knowledge as a post-doctoral researcher in the Department of Physics & Center for Lattice Defectronics at KAIST | | | | | |
| Job performance details | \* To be determined within the following topics, considering the applicant's research experience and interest.  ○ Synthesis and characterization of transition metal oxide thin films, interfaces, superlattices   ○ Investigation of emergent quantum properties in strongly correlated materials  (Measurement/analysis of physical properties in low temperatures & high magnetic fields)   ○ Exploration of nanoscale magnetic/ferroelectric/ferroelastic/multiferroic domain (wall) structures and low dimensional functional properties   ○ Examination of topological defects and electron/ion transport (for fundamental knowledge and neuromorphic devices) | | | | | |
| Knowledge required | Basic knowledge as a Ph.D. researcher in the field of condensed matter physics and materials science | | | | | |
| Required skills | \* Experience with some of the techniques below is preferred, but not necessarily required.    ○ Synthesis and characterization of epitaxial oxide thin films  ○ Scanning probe microscopy for measurement of domain (wall) structure, conductivity, and electrochemical reaction    ○ Confocal Raman spectro-microscopy    ○ Synchrotron-based X-ray scattering or spectroscopy    ○ Measurement of quantum electron transport in extreme environments    ○ Transmission electron microscope    ○ Theoretical modeling and simulation | | | | | |
| Attitude while performing duties | ○ Compliance with research ethics    ○ Active attitude and willingness to challenge | | | | | |
| Basic skills | Candidates and holders of Ph.D. degrees in science and engineering | | | | | |
| Reference site | www.ncs.go.kr, [www.kaist.ac.kr](http://www.kaist.ac.kr), physics.kaist.ac.kr, oxide.kaist.ac.kr | | | | | |