

【Job Description for Research Scientist(Full-time) Recruitment No.1】

Area of recruitment	Synchrotron accelerator development – Accelerator Physics (Beam dynamics)				
Academic major	Physics(Accelerator Physics), related major	Job position	Researcher	Locations	Daejeon or Ochang
NCS category	Main Category	Category		Sub-Category	
	A separate analysis was performed to prepare the following contents as the NCS has not developed job categories corresponding to the job duties				
KBSI mission	<ul style="list-style-type: none"> □ Conducting R&D on research facilities & equipment and analytical S&T, and joint research and support for promoting basic science, the foundation of the national science and technology development 				
KBSI main functions	<ul style="list-style-type: none"> □ Research support and joint research through the development and operation of cutting-edge large-scale research equipment □ Development of analytical technology and equipment through analytical science research □ In charge of general management of national research facilities and equipment □ Fostering research equipment experts and creative future talent 				
General requirements	Age and gender	Not specified			
Educational requirements	Academic Background	Doctoral degree			
Required job duties	<ul style="list-style-type: none"> □ Carry out theoretical studies to Korea 4GSR accelerator model, optimize the beam optics and simulation the non-linear beam dynamics. □ Preparing and Carry out studies to beam commissioning for Korea 4GSR. 				
Capacity and ability	<ul style="list-style-type: none"> □ Doctoral degree in an accelerator physics – beam dynamics □ Writing scientific papers / reports 				
Required knowledge	<ul style="list-style-type: none"> □ Accelerator physics □ Accelerator beam optics design □ Accelerator operation experience 				
Required skills	<ul style="list-style-type: none"> □ Experience in beam dynamics software in accelerator physics □ Programming skills of C, FORTRAN, MATLAB, Python for operating accelerator 				
Attitude in performing duties	<ul style="list-style-type: none"> □ Proactive, responsible, and diligent attitude to solve a problem □ An exploratory attitude towards new knowledge and skills □ Positive and active communication attitude □ Efforts oriented towards teamwork 				
Reference websites	<ul style="list-style-type: none"> □ www.ncs.go.kr (except for the undeveloped jobs in NCS) - The above job description was prepared through a separate analysis. □ http://www.kbsi.re.kr (KBSI website) □ https://kbsi.recruiter.co.kr (KBSI application site) 				

※ The above duties are the main duties that the applicant will perform upon employment after being selected as the successful applicant, and the applicant may perform duties other than the main job duties and the place of work may also be changed.

【Job Description for Research Scientist(Full-time) Recruitment No.2】

Area of recruitment	Synchrotron accelerator development – Accelerator Devices				
Academic major	Physics, Electrical & Electronics Engineering, Mechanical Engineering, related major	Job position	Researcher	Locations	Daejeon or Ochang
NCS category	Main Category	Category		Sub-Category	
	A separate analysis was performed to prepare the following contents as the NCS has not developed job categories corresponding to the job duties				
KBSI mission	<ul style="list-style-type: none"> □ Conducting R&D on research facilities & equipment and analytical S&T, and joint research and support for promoting basic science, the foundation of the national science and technology development 				
KBSI main functions	<ul style="list-style-type: none"> □ Research support and joint research through the development and operation of cutting-edge large-scale research equipment □ Development of analytical technology and equipment through analytical science research □ In charge of general management of national research facilities and equipment □ Fostering research equipment experts and creative future talent 				
General requirements	Age and gender	Not specified			
Educational requirements	Academic Background	Doctoral degree			
Required job duties	<ul style="list-style-type: none"> □ Korea 4GSR accelerator system development and installation □ Korea 4GSR accelerator system operation 				
Capacity and ability	[Beam diagnostics] Beam diagnostics tool development [Vacuum system] Development and operating of ultra-high vacuum system [RF] Research and development of low power high frequency control system (LLRF) [Magnet and Insertion Device] Physical design of magnets and insertion devices [Magnet Power Supply] Development of high-precision/high-voltage power supply				
Required knowledge	(Common) Basic knowledge of accelerator physics [Beam diagnostic] RF signal measurement and processing [Vacuum system] UHV system design and operation [RF] FPGA related knowledge / RF system control and measurement [Magnet and Insertion Device] Magnetic field analysis technology [Magnet supply] High efficiency converter / high-voltage DC power supply and pulse modulator topology design and optimization				
Required skills	[Beam diagnostic] RF Simulation(CST, COMSOL) / RF signal processing and measurement technology [Vacuum system] FEM simulation (structural, thermal, fluid and vibration analysis) / Design using CAD (AutoCAD, Inventor, etc.) [RF] VHDL, Verilog based FPGA logic design skills / RF related measurement equipment utilization skills [Magnet and Insertion Device] Magnetic field FEM simulation and analysis [Magnet power supply] Power supply gate driver, analog/digital controller, protection design technology / High precision/high voltage precision measurement and performance evaluation technology				
Attitude in performing duties	<ul style="list-style-type: none"> □ Proactive, responsible, and diligent attitude to solve a problem □ An exploratory attitude towards new knowledge and skills □ Positive and active communication attitude □ Efforts oriented towards teamwork 				
Reference websites	<ul style="list-style-type: none"> □ www.ncs.go.kr (except for the undeveloped jobs in NCS) - The above job description was prepared through a separate analysis. □ http://www.kbsi.re.kr (KBSI website) / https://kbsi.recruiter.co.kr (KBSI application site) 				

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【Job Description for Research Scientist(Full-time) Recruitment No.3】

Area of recruitment	Synchrotron X-ray Research & Development (X-ray Spectroscopy)				
Academic major	Physics, Chemistry, Materials Science, related major	Job position	Researcher	Locations	Daejeon or Ochang
NCS category	Main Category	Category		Sub-Category	
NCS category	A separate analysis was performed to prepare the following contents as the NCS has not developed job categories corresponding to the job duties				
KBSI mission	<ul style="list-style-type: none"> □ Conducting R&D on research facilities & equipment and analytical S&T, and joint research and support for promoting basic science, the foundation of the national science and technology development 				
KBSI main functions	<ul style="list-style-type: none"> □ Research support and joint research through the development and operation of cutting-edge large-scale research equipment □ Development of analytical technology and equipment through analytical science research □ In charge of general management of national research facilities and equipment □ Fostering research equipment experts and creative future talent 				
General requirements	Age and gender	Not specified			
Educational requirements	Academic Background	Doctoral degree			
Required job duties	<ul style="list-style-type: none"> □ Synchrotron X-ray Research Development using spectroscopy analysis (ARPES or XES) □ Advancement of analysis techniques and development of measurement devices (Participation in 4GSR construction project) □ Performing R&D using spectroscopy analysis techniques 				
Capacity and ability	<ul style="list-style-type: none"> □ Spectroscopy (ARPES or XES) analysis and research capabilities □ Spectroscopy analysis technique development and device construction/operation capabilities □ Experience in experiments/analysis using synchrotron X-ray □ Collaborate research and international cooperation capabilities 				
Required knowledge	<ul style="list-style-type: none"> □ Research knowledge related to X-ray spectroscopy (ARPES or XES) analysis □ Expert knowledge related to spectroscopic techniques □ Expert knowledge in developing and utilizing Synchrotron beamline □ Research knowledge in the fields of physics/chemistry/materials using spectroscopic techniques 				
Required skills	<ul style="list-style-type: none"> □ Spectroscopy (ARPES or XES) analysis technique □ Device design and measurement skills related to spectroscopy analysis □ Software skills related to spectroscopy analysis 				
Attitude in performing duties	<ul style="list-style-type: none"> □ Proactive, responsible, and diligent attitude to solve a problem □ An exploratory attitude towards new knowledge and skills □ Positive and active communication attitude □ Efforts oriented towards teamwork 				
Reference websites	<ul style="list-style-type: none"> □ www.ncs.go.kr (except for the undeveloped jobs in NCS) - The above job description was prepared through a separate analysis. □ http://www.kbsi.re.kr (KBSI website) □ https://kbsi.recruiter.co.kr (KBSI application site) 				

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