DGIST Global Postdoctoral Fellowship
2025 Announcement

The DGIST Global Postdoctoral Fellowship is now accepting applications for 2025. This program aims to attract outstanding global researchers to DGIST, fostering joint research in cutting-edge fields, achieving exceptional research outcomes, and cultivating early-career researchers. By promoting international collaboration and enhancing the research environment, this program seeks to contribute to innovation, secure core technologies, and build a global network of excellence. Interested applicants are kindly requested to submit their applications in accordance with the prescribed procedures.

Feb 19th, 2025
Kunwoo Lee
President, DGIST

1. Summary of Announcement

□ **Eligibility**

Individuals who meet one or more of the following criteria:

① Korean and foreign nationals who are expected to obtain a doctoral degree abroad within three months of appointment date, or who have obtained a doctoral degree abroad within the past five years

② Foreign nationals who are expected to obtain a doctoral degree within three months of the appointment date or have obtained a doctoral degree within the past five years.

□ **Program Period**

Up to 5 (3+2) years (subject to a mid-term evaluation in the 3rd year of appointment).

□ **Support Details**

- Annual compensation: KRW 80 million.
- Research funding (direct costs): Up to KRW 100 million per year.

2. DGIST Global Postdoctoral Fellowship

□ **Program Objective**

To invite outstanding overseas scientists to domestic research and development sites, strengthening domestic R&D capabilities and establishing international collaboration

networks.

□ **Application Method**

Open call for proposals.

□ **Program Details**

o **Eligible Fields** All research fields at DGIST.

Department	Academic Fields
Department of Energy Science and Engineering	All areas in Energy Science and Engineering (ESE) related to energy conversion,storage, and conservation including but not limited to the following: - Energy materials and devices (batteries, fuel cells, solar cells, catalysts, etc.) - Semiconductor materials and devices - Device physics, fabrication, and characterization related to electronic and optoelectronic devices - Modeling, computation, and simulation - Microscopy: analytical TEM, super-resolution microscopy, tomography, simulation - X-ray spectroscopy
Department of Robotics and Mechatronics Engineering	- AI for Robotics: AI algorithm, deep learning, machine learning, motion planning, intelligent control, and other related topics - Autonomous Mobilities: computer vision, SLAM, vehicle control, intelligent transportation system, and other related research topics - Robotics: cooperative robot, industrial robot, humanoid, surgery / rehabilitation robot, exoskeleton, mobile robot, microrobot, and other related research topics - Biomedical Engineering and Healthcare in AI and Robotics (MD Recommended)
Department of Brain Sciences	- All areas in Brain Sciences (e.g., Molecular / Cellular / Systems / Cognitive / Computational neuroscience) - Advanced Techniques applicable to Brain Sciences (e.g., Neuroimaging, Neuroelectronics, Omics, Bioinformatics, and Synthetic Biology)
Department of New Biology	- Systems Biology - AI and Bioinformatics - Plant Biology - All Areas of Life Sciences for Strong Candidates
Department of Electrical Engineering and Computer Science	While applicants who have demonstrated outstanding research in all areas of Electrical Engineering and Computer Science will be considered, preference will be given to those in the following areas: - Computer Architecture, Compiler/Programming Languages, High-Performance Computing - NLP, Generative AI, AI Theory, and other related areas in AI and ML - Database/Data Mining/Big data

	- Intelligent Biomedical Imaging Systems, Ultrasound, Biophotonics, MRI, CT, PET Systems (Requirements: Ph.D. or MD), Autonomous Vehicles, 6G Communications/Networks, Radar/LiDAR Sensors and Systems, Data-Driven Control, Cyber Security (e.g., Moving Target Defense), Quantum Computing, Wearable Imaging Sensors, Brain Signal Control based on Electrical Engineering - Semiconductor Devices, Fabrication Processes and Packaging, Emerging Electronic Devices - VLSI & Digital IC Design, Power Electronics
Department of Physics and Chemistry	Chemistry - Physical Chemistry: AI and Computational Chemistry - Analytical Chemistry: Electrochemistry - Polymer Chemistry - Biochemistry - Material chemistry - All Areas in Chemistry for Exceptional Candidates Physics - Quantum Information Science (Quantum Optics, AMO, Condensed Matter) - Quantum Materials Experiments - Semiconductor Physics - All areas in physics for exceptional candidates
Department of Interdisciplinary Studies	-
Biomedical Science & Engineering	Research on Mechanisms and Treatments for Incurable Geriatric Diseases - Research on mechanisms related to aging, metabolism, immunity, and associated diseases. - Regenerative medicine research based on stem cells and organoids. - Precision medicine research for cancer diagnosis and treatment based on cancer biology. - Structure-based drug design for incurable diseases. - Development of super-resolution microscopy, single-molecule observation, and protein phase separation studies. - Signal processing and AI technology research for biomarker identification. - Research on mechanisms for treating brain diseases through brain stimulation. Neuroengineering Research for Overcoming Intractable Brain Diseases - Research on implantable electronic chips for the human body. - Development of non-invasive brain stimulation technologies.

		- Research on invasive brain signal sensing, processing, and stimulation technologies, along with the development of brain implants. - Development of both non-invasive and invasive brain stimulation and sensing technologies. - Research on high-resolution soft brain interfaces and brain stimulation technologies for implantable applications. Intelligent Medical Imaging Systems and Analysis - Research on the development of ultrasound and optics-based medical imaging systems. - Development of artificial intelligence technologies for medical image and signal analysis. - Design of hardware-accelerated circuits dedicated to medical image and signal processing. - Research on the development of multimodal imaging systems. Medical Robotics and Therapy Support Systems - Biomedical devices such as wearable and implantable sensors and stimulators. - Rehabilitation technologies utilizing robotic and exoskeleton systems. - Surgical robots, navigation systems, and medical virtual/augmented reality systems. - Artificial intelligence-based diagnostic and therapeutic technologies.
	Interdisciplinary Engineering	Intelligent Mobilities - Autonomous Driving Technology - Human Mobility Interaction - High-Performance Radar Signal Measurement Technology Emerging Materials and Components - Energy Conversion Materials & Technology - Functional Material for Carbon-neutral technology - Sensors & Packaging Technology Advanced Biotechnology - Practical Technology for Translational Medicine(Therapeutics, Diagnostics) - Convergence Technology for Quality of Life(Medical Device & Services)
	Artificial Intelligence	ML Theory - Explanable AI - Efficient AI - AI Optimization - Human-AI Interaction

	- Learning Data Optimization Vision & Imaging - Visual Recognition and Video Processing - Real-time Deep Learning Network Weakly supervised Learning - Video Inverse Problem - Medical Image Analysis AI Robotics - Robot Automation - Surgery Robot Vision System - Unstructured Data Analysis Edge Computing - Personalized Service AI System - AI Accelerator Design - Real-time Training and Inference - Cyber Physical System - AI Security ML-based Data Recovery - Brain Interface Applications : Bio, Medical, Manufacture, Industry, Smartcity
Division of AI, Big data and Block chain	Multi-Sensor Based Cognitive Technology and System - Context awareness technology research and system development based on multi-wavelength image and electromagnetic sensor information - High precision positioning/recognition technology development through multi-sensor fusion Research for Application and Practical Use of Precision Medicine - Development of service platform for precision medicine - Development of diagnostic index and AI-based drug screening technology - Development of analysis system for movement characteristics of elderly people Open Innovation & Business Model - Open innovation research based on data science and system dynamics - Development of qualitative research-based business model
Division of Automotive Technology	Development of Core Sensor and Element Technology for Smart Cars - Radar Sensor and AI technology - Computer Vision and Intellectualization technology

	- Software Platform technology - Next-generation Brake technology Development of Practical Technology for Autonomous Driving - Autonomous driving technology based on deep learning - Autonomous driving technology converged with sensor - Autonomous driving technology of driverless vehicle focusing on safety - HMI management technology for integrated drivers and vehicle state
Division of Intelligent Robot	Rehabilitation Robot and Collaborative Robot - Active rehabilitation and Smart Healthcare robot - Development of core technology, components, modules for collaborative robots Human Cognitive and Physical Augmentation - Human cognitive mechanism analysis and augmentation technology research - Human musculoskeletal motion analysis and muscle assistance technology research Intelligent Sensors - Intelligent radar system - Super-resolution/AESA radar signal processing technology - Image processing and optical sensors including medical image sensors Complex Information Processing Platform based on Life-log - Life-log Processing of Human/Robot/IoT Devices; storage, representation, intellectualization, analysis, etc. - Data-driven Personalized Coaching Service Development of Bottleneck Breaking Technology for Regional Strategic Industries - Development of human-robot collaborative technology to implement smart factory; production logistics, process automation - Development of bottleneck breaking technology for technology-invested startups
Division of Energy & Environmental Technology	Eco-friendly & High Performance Solar and Hydrogen Energy Technology - Next Generation Chalcogenide/Halide Thin-Film Solar Cell Technology - Functional Solar Cell Technology and Applications - High Efficiency Solar-Hydrogen Energy System and Fuel Cell Technology

	Energy Harvesting and Storage Technology for Wearable Electronics - Functional Nano-material based Wearable Sensor Technology - Flexible Energy Storage Technology based on Carbon, Polymer and Nano-materials - Mechano-Luminescence(ML) Material Application for Textile
Division of Nanotechnology	High Performance Thermoelectric Energy Conversion Technology - Development of Bi-Te based and zintl phase thermoelectric materials - Fabrication of high efficiency thermoelectric devices - Thermoelectric energy conversion system for industrial waste heat recovery and power generation Crystal alignment and nanostructure control for energy conversion technologies - Crystal alignment technology based on materials' magnetic properties - Nanomaterial synthesis and nanostructure control - Studies on the physical and transport properties of crystal-aligned materials and nanostructures Development of Next-generation Extreme Low-power Semiconductor Materials/Device for AI Technology - Atto-Joule class next generation artificial intelligent materials/devices - Research on next generation extremely low power consumption memristor via Spin-Ion Hybridization - Investigation on the high reliability, high performance, and low power semiconductor material and devices - Investigation on the fatigue issue in the semiconductor device driving - Analysis for the heat generation & its fatigue in the semiconductor driving issue Self-luminescent Nanomaterials - Development of mechano- and electro-luminescent nanomaterials - Development of polymer-nanoparticle hybrid optical materials Colloidal Semiconductor Nanocrystals (Quantum Dots) - Synthesis and optoelectronic applications of highly-luminescent short-wave infrared quantum dots - Development of bright nano-tags for bio/medical imaging applications 3D Dirac Semimetal Physics - Detecting Dirac/Weyl Fermion

	- Quantum hall effect in 3D Dirac semimetals - Quantum devices with Dirac semimetals Functional Material Development By Nanostructure Control - Thermal dissipation substrates for high-power electronics - Thermal interface materials for flexible devices - Development of nanostructure-controlled magnetic material
Division of Biomedical Technology	Controlling And Mechanism Of Incurable Diseases - Discovery and Mechanistic Research of Disease-Related Genes - Derivation and Mechanistic Research of Disease Control Substances Biological And Computational Model For Incurable Diseases - Discovery and verification of treatments through HTS (High Throughput Screening) - Clinical and translational research - Development and validation of biological computer modeling & simulation Development Of Functional Biomaterials And Bioplastics - Fabrication of medical devices based on biocompatible polymers - Development of standard microplastics model and its risk assessment for health and environmental hazards - Development of monodisperse polymer beads for immun-diagnosis - Development of stimuli-responsive hydrogel and synthetic antibodies

o **Eligibility** Individuals who meet one or more of the following criteria:

① Korean and foreign nationals who are expected to obtain a doctoral degree abroad within three months of appointment date, or who have obtained a doctoral degree abroad within the past five years

② Foreign nationals who are expected to obtain a doctoral degree within three months of the appointment date or have obtained a doctoral degree within the past five years.

o **Program Period** Up to 5 (3 + 2) years (subject to a mid-term evaluation in the 3rd year of appointment).

o **Planned Quota** Approximately 6 individuals in total.

o **Support Details**

- Annual compensation: KRW 80 million.
- Research funding (direct costs): Up to KRW 100 million per year.
- Support for airfare and relocation expenses for overseas residents.

- Various settlement support programs for international researchers.
- On-campus housing provided, with the utility bill charged based on usage
- On-campus daycare center available for children aged 1 to 5, subject to availability
- Initial infrastructure setup funding will be provided upon appointment (subject to budget availability).
- Additional salary support may be available when securing new research projects (for participation in and execution of other R&D projects related to the DGIST Global Postdoctoral Fellowship program, with a salary allocation rate of up to 50%).

□ **Application Procedure and Document Submission**

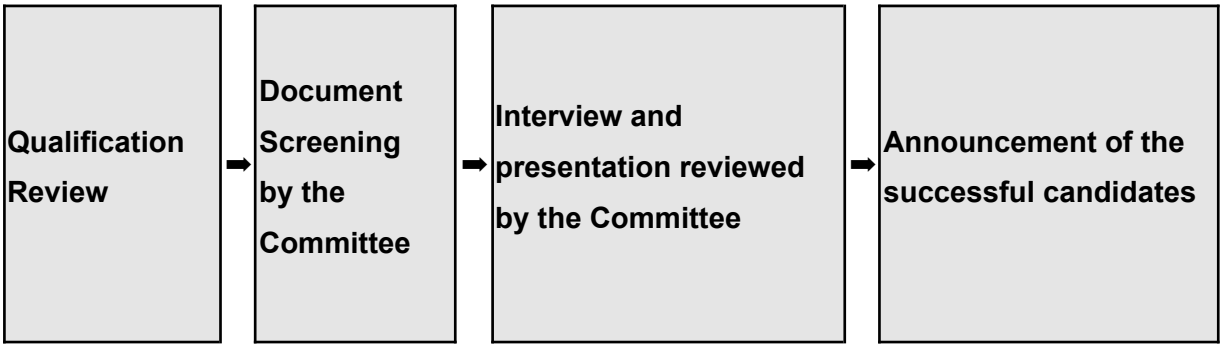
o **Application Period** Feb. 19th, 2025(Wed) – Mar. 21st, 2025(Fri) (KST)

o **Submission Procedure** Complete and submit all required documents via email.

- Email : d-rnd@dgist.ac.k

□ **Evaluation Method**

o **Evaluation Process**



- **Qualification Review** : Review of applicant qualifications based on submitted documents.
- **Document Evaluation** : Written evaluation conducted by a review committee for each field.
- **Presentation evaluation** : Comprehensive evaluation by the review committee through a presentation assessment, considering the applicant's research plans, achievements, and contributions.
- **Final Selection** : Final selection and notification of successful candidates upon approval by the DGIST President.

o **Evaluation Items and Scoring Criteria**

Evaluation Item	Evaluation Criteria	Score

Research Plan	• Proactiveness of the applicant's motivation. • Excellence and originality of the research plan. • Validity and feasibility of the proposed joint research goals and metrics.	30
Research Competence	• Excellence of research performance. • Outstanding achievements within the last five years, including publications, patents, and academic activities.	30
Research Impact	• Potential impact and applicability of research outcomes. • Possibility of promoting international collaboration through global network building.	20
Collaborative Capacity	• Potential for linking and collaborating on R&D project outcomes domestically and internationally. • Plans for maintaining a sustainable network after the research period.	20
Total		**100**

□ **Schedule (Tentative)**

Date and Period	Details
Feb. 19th, 2025 (Wed.) – Mar. 21st, 2025 (Fri.)(KST)	Application Period.
February – March 2025	Qualification review and documents screening
March 2025	Interview and presentation (10 days after the announcement of document screening results).
April 2025	Announcement of successful candidate
July 1st, 2025 (Tue.)	Appointment and start of research activities.

※ The above schedule is subject to change depending on the progress of the program

□ **Notes on Application and Participation**

o Final candidates must arrive at Korea and begin their research activities by July 1, 2025. Exceptions may be made in cases of global disasters, natural calamities, or other necessary circumstances.

o Research funds can only be used after the appointment and commencement of research activities. However, airfare and relocation expenses incurred upon entry may be reimbursed

if these costs are covered in advance by the overseas researcher (only applicable to those entering after the final selection notification)

o If a final candidate withdraws from the appointment without a valid reason, they may face disadvantages in future applications for this program.

o Support will be terminated (early termination) if the researcher is appointed as a tenure faculty member or a Permanent·Associate researcher at DGIST during the program period.

o Applicants subject to participation restrictions or sanctions under the National R&D Innovation Act and its Enforcement Decree may be ineligible to apply.

□ **Document Submission**

⬭ **Required Documents**

- DGIST Global Postdoctoral Fellowship Application Form(form)
- Scanned Copy of a Certificate of (Expected) Ph.D. Degree
- (if any) Residency certificate or equivalent document issued by a recognized government in the overseas jurisdiction of residence

⬭ **Notes on Document Submission**

- All submitted documents must be written in Korean or English. For documents in other languages, a notarized translation in Korean or English must be provided
- All submissions, including the research plan, must adhere to the designated formats. Missing plans or required documents may result in disqualification during the qualification review.
- Ambiguities in research purpose or content, as well as errors or omissions in the application, may lead to disadvantages during the evaluation process.
- If any false information is found in the documents, the selection may be canceled even after the final decision.

□ **Contact Point**

⬭ **DGIST Research Promotion Team**

- E-mail : d-rnd@dgist.ac.kr
- Tel : +82-53-785-1932, 1934

※ For inquiries, please use email if phone inquiries are not handled smoothly