

**붙임 1**

# 참여 연구실 및 연구 주제 소개

참여 연구실 및 연구 주제 소개				
연번	트랙	지도교수	연구실명 (영문)	Research Keyword ※상세내용은 <a href="https://gs.kentech.ac.kr/composition/참고">https://gs.kentech.ac.kr/composition/참고</a>
1	에너지 AI	김종권	INES, INtelligent Energy System	Machine Learning (DRL, GNN), SNA, Recommender System, IoT
2	에너지 AI	노영태	Intelligent Mobile Computing Lab	Intelligent Mobile Computing
3	에너지 AI	이석주	Visual Intelligence & Energy Wise (VIEW) Lab	Robotics & Computer Vision
4	에너지 AI	이현우	Energy System Security Laboratory (ESSLAB)	Network Security, Protocol Verification Applied Cryptography, AI for Security
5	에너지 AI	임혁	Secure and Sustainable AI Lab	Sustainable AI, Cyber Security, Data Networking
6	에너지 신소재	곽준섭	Information & Opto-Energy Materials (IOEM) Laboratory	Ultra-wide bandgap power semiconductors
7	에너지 신소재	두석광	Advanced Rechargeable Battery Lab(ARBL)	Next-Generation Rechargeable Battery
8	에너지 신소재	서동한	Plasma Nanoscience Lab for Sustainable Energy & Environment	Advanced Material Synthesis & Control, Plasma Nanoscience, Energy & Environment
9	에너지 신소재	송주현	Battery Software Lab	Battery multi-physics modeling, AI-based BMS algorithms, Techno-economic modeling, EVdrivingpatterns,ESSsystemoptimization
10	에너지 신소재	오상호	Electron Microscopy for Energy Materials via Environment Manipulation ( eM3 )	In-situ TEM, Operando TEM, Electron holography, 4D-STEM, Ptychography
11	에너지 신소재	윤재호	NextGen Photovoltaic Materials & Devices Lab (PMDL)	Next Generation PV materials and devices
12	에너지 신소재	이승진	Hybrid Optoelectronics Laboratory	Hybrid Optoelectronic Materials & Devices
13	에너지 신소재	장재형	Microwave Integrated Device And System (MIDAS)	Semiconductor Devices, Compound Semiconductors, Microwave, THz, Next Generation Memory
14	에너지 신소재	정의혁	THE LAB	Solution-Processible Semiconductors for Sustainable Energy
15	차세대 그리드	강병남	Center for Complex Systems	Construction of stable and decentralized power-grid networks using AI, analytical, and/or numerical approaches
16	차세대 그리드	김희태	Grid Complexity Lab	Network science, Complex systems, Power grid analysis
17	차세대 그리드	문승일	Energy System Control and Operation Laboratory (ESCO Lab)	Power Systems, DC Grids, Multi Energy Systems
18	차세대 그리드	이규섭	Energy System Control and Operation Laboratory (ESCO Lab)	Power Systems, DC Grids, Multi Energy Systems
19	차세대 그리드	이준희	Power Electronics Laboratory	Power Electronics

20	차세대 그리드	김집	Electric Grid Optimization Lab	Electric Grid Optimization, Power System Economics
21	수소 에너지	구근호	AI & Computational Materials Research Lab	AI and Computational Catalysis and Materials Science
22	수소 에너지	김창희	Water Electrolysis Lab (WE Lab)	Green Hydrogen, Water Electrolysis, HER electrode, OER electrode
23	수소 에너지	김형준	Polymer Electrolyte Membranes for Fuel Cells and Water Electrolyzers	Polymer Science and Engineering
24	수소 에너지	박진호	Hydrogen Energy And Photovoltaics Research & Technology Development Laboratory (HEART)	Photoelectrochemical-Photovoltaic Materials & Devices
25	수소 에너지	배기호	Multiscale Structuring and Characterization (MSC) Lab.	Multiscale Solid-State Energy Devices
26	수소 에너지	심옥	Nanomaterials for Energy and Environment Laboratory (NEEL)	Nanomaterials for Energy and Environment Laboratory
27	수소 에너지	이영덕	Hybrid EneRgy systems and Optimization Laboratory (HERO Lab)	Precess integration, Exergy analysis, Economic analysis, Life Cycle Analysis, SOEC-based green hydrogen production, Fuel cell power generation, Hybrid system design
28	수소 에너지	한종희	Hydrogen to Chemicals (H2X) Lab	Molten Carbonate Fuel Cells (MCFC), Molten Carbonate Electrolysis (MCEC)
29	수소 에너지	황지현	HYdrogen Liquefaction & value chain Optimization Technologies (HYLOT)	HYdrogen Liquefaction and value chain Optimization Technologies (HYLOT)
30	환경 · 기후기술	강영수	Solar Energy Conversion Chemical Laboratory	Solar Energy, Chemical Process, Conversion
31	환경 · 기후기술	김기만	Nuclear Fusion & Superconductivity Technology Lab	Design of Tokamak fusion reactor and development of fusion superconducting magnets
32	환경 · 기후기술	김우열	Solar energy application lab	Catalysis by design: Operando analysis for photo/electro-catalysis
33	환경 · 기후기술	김효원	Membrane-driven Energy & Environmental Technologies	Membrane-driven Energy & Environmental Processes
34	환경 · 기후기술	오명환	Artificial Living Systems (ALS)	Artificial Living Systems for Energy and Climate
35	환경 · 기후기술	유룡	KENTECH Institute for Environmental and Climate Technology	Nanomaterials and catalysis
36	환경 · 기후기술	이형술	Circular Bioeconomy Laboratory	Bioenergy, biofuels & Biochemicals for Carbon-neutral Circular Economy
37	환경 · 기후기술	임병수	Nuclear Fusion & Superconductivity Technology Lab	Materials for High Field Applications, Development of Nuclear Fusion Reactor
38	환경 · 기후기술	최원용	Eco-friendly Photoenergy Application Laboratory (EPA)	Photo(electro)catalysis for Solar Chemical Conversions and Energy-Environment Applications
39	환경 · 기후기술	당정증	Fusion Plasma Heating laboratory(FLASH)	Nuclear fusion engineering, Fusion plasma heating & current drive, Neutral beam injection, Negative ion source, ion beam engineering
40	환경 · 기후기술	김경모	Nuclear Innovation & Safety Laboratory (NIS Lab)	SMR safety system design, Application of AI technique for SMR digital twin, Nuclear safety analysis, Thermal-hydraulic experiments