[KAERI] Study Proposal of International Admission for 2020 Fall Semester

No.	Major	Research Group (Team)	Study and Research Proposal	연구내용 및 범위(영문)
1	Accelerator and Nuclear Fusion Physical Engineering	_	Radiation Center for Ultrafast Science	 Research on the material properties based on time-resolved electron diffraction Experimental system development (solid, gas, and liquid phase specimens) Fabrication of specimen and diffraction experiment Structure reconstruction and interpretation of material properties
		_	Radiation Center for Ultrafast Science	 Research on the THz wave Generation and detection of high-power and high-efficiency THz wave based on accelerator THz wave spectroscopy Material study using THz wave
		_	Radiation Center for Ultrafast Science	 Research on the realization of extreme physical conditions Management and stabilization of ultrahigh power laser Generation and diagnosis of extreme physical conditions (ultrahigh pressure, high temperature, high magnetic field strength, and high radiation flux) based on laser-plasma interaction
2	Radiochemistry and Nuclear Non-proliferation	Radiochemistry	Radiochemistry research team	 Actinide chemistry in various phases Electrochemical spectroscopic studies of actinide and lanthanide elements Chemical separation and analysis of actinide and lanthanide elements Chemical and physical properties of actinide elements

		Radiochemistry	Radiochemistry research team	 Development of New material-based Radiation detection and measurement Synthesis and manufacturing of radiation sensing materials including quantum dots Study on radiation detection and measurement using nano crystalline materials
		Radiochemistry	Radiochemistry research team	 To develop the chemical techniques coping with severe accidents of nuclear power plants To evaluate the chemical behavior of radioactive iodine Determination of optimum chemical condition in the pool scrubber of CFVS (containment filtered venting system) Elucidation of iodine interference under high-temperature PAR condition To develop the treatment technology of tritiated water To investigate the chemical behavior of molten corium
		Nuclear Non-proliferation	Environmental Safety Assessment Research Division	 Advanced analytical techniques for ultra-trace nuclear materials in environmental samples Development of U/Pu age-dating methods Development of particle analysis method based on femto-second LA-ICP-MS Development of isotopic ratio and quantification analysis of ultra-trace amounts of nuclear materials
3	Advanced Nuclear System Engineering	Nuclear System Engineering	Advanced Nuclear System Safety Research Division	 Nuclear System Performance Validation Technology Performance Enhancement of Steam Generator Essential Component Scaling Analysis Technology for Experimental Validation Nuclear Safety System Validation Analysis Technology for System Performance and Safety Experimental Validation for Nuclear Safety System New Innovative Reactor Study Experimental Study for Flow Identification

4	Quantum Energy Chemical Eng.	Decommissioning & decontamination	Decommissioning & decontamination Research Team	 Understanding of Decontamination and Remediation technology R&D for tritium removal Characteristics of tritiated water in oxide layers Development of functional nanocomposites for detection and removal of radioactive contaminants
		Back end nuclear fuel cycle	Nuclear Fuel Cycle Research Team	 Back end nuclear fuel cycle technology Development of a process technology for enhancing the disposal stability Development of a spin off technology for the nuclear fuel cycle
5	Radiation Science and Technology	Radiation Biology	Biological team	 Biological impact assessment and human body analysis in radiation internal exposure Assessment and analysis of the effects of tritium, cesium and strontium on the human body when internal exposure occurs Deterministic and stochastic analysis of cancer risk by external and internal radiation exposure Assess and analyze the effects on the human body when exposed to various types of radiation. Development of sensitizer to increase the efficiency of cancer treatment using radiation By analyzing the signaling mechanism of cancer cells, the treatment efficiency of cancer cells with medical radiation resistance ability is improved.