**Application Form**

This form provides the Korea Evaluation Institute of Industrial technology (KEIT) with basic information about the applicant and the proposed project. Each applicant must complete this form. Applicants should select the project areas(PD Category/Related Technology Theme), which best fits their project. Please consult attachments for detailed descriptions of Technology Readiness Level(TRL) and R&D Programs Types

If an applicant submits multiple applications (**maximum up to 2**), each application must be for distinct project with different technology and objective.

**1. Applicant Category**

|  |  |
| --- | --- |
| **PD Survey Category*****(attachment. 1-3)*** | **(PD Category) Related Technology Theme***ex. (Robot) Programmable Automation technology that allows non-specialists to control robots easily* |

**2. Technology Overview**

|  |  |
| --- | --- |
| **Technology Title** |  |
| **Proposing Organization’s** **Name and Type**  | *ex. Seoul National University* | South Korea(○),(Specify a region & country)Asia( Japan ), Europe( Germany)America( US )Others( ) | Large Company(○), Small and Mid-sized Company( ), University( ), Research Institute( ), Others( ) |
| **R&D Programs****Type ①** | **Innovative Product Programs**(to early deployment, TRL 7~8) | ○ | **Fundamental Technology Programs**(to development,TRL 5 ) | **Royalty Generating** |  |
| **Royalty Substitute** | ○ |
| **Others**  |  |
| **Global Cooperation Track ②**  | **Global Cooperation**  | ○ |

**3. Rationale for Government Support**

|  |
| --- |
| *\* Specify a rationale for government support from market, technical perspectives.*o (Market Perspective)o (Technical Perspective)o (Reason for selecting Nature of R&D)*\* Describe reasons for selecting particular type of R&D Programs(Innovative Product Program or Fundamental Technology Programs(Preferably under 3 lines),**→ For Royalty Substitute type, specify nature of licensing-in (technology imports) and* *for Royalty Generating type, describe export possibilities of license-out(tech transfer export)* |

**4. R&D Objectives and Details**

|  |  |
| --- | --- |
| **R&D Objectives** | Oo |
| **Required Technology Components** | ooo |

**5. Domestic and Global R&D Trend in the Relevant Technology Field**

*\* Please, describe, to the best of your ability, technological and competitive landscape for the relevant technology fields in Korea and the world*

|  |  |
| --- | --- |
| **Domestic(Korean)** **R&D Trends** | OO |
| **Global R&D****Trends** | Oo*\* If you have chosen “global cooperation track”, please includes general descriptions of prospective partner countries(other than Korea) and organizations* |

**6. Expected Effects on Technological Fields and Industry**

|  |
| --- |
| o o *\* Specify intended technological and industrials effects and impacts.* |

**[Attachment 1-1]**

**< Types of R&D Programs: Technology Demand Survey for**

**Strategic Industrial Technology R&D Program>**

**□ Tech. Demand Survey (R&D Program –Sub-Program Types) ①**

|  |  |  |
| --- | --- | --- |
| **Program** | **Innovative Product Programs** | **Fundamental Technology Programs** |
| **Aim/****Features** | ◆ **(Aim)** Support development of Innovative Products or Process with commercial potential  | ◆ **(Aim)** Support development of cutting- edge fundamental technology required to produced new products and services, and/or significantly add values ◆ **(Features)** ① the world's first and/or most innovative technology with potential to lead particular fields ② Innovative technologies with potentially wide ranges of applications |
| **Sub- Program Type** |  (Not applicable) | ◆ **(Sub-Type)**  ▫ **(Royalty Generating type)** Developing the world's first and/or most innovative technology with potential to generate royalty income through licensing  ▫ **(Royalty Substitute type)** Developing core technology, to replace currently licensed technology  ▫ **(Others)** Fundamental technologies that does not come under either types. |
| **Participation Conditions** | Consortiums\* headed by business) | Consortiums\* headed either by  university, research institute or businesses |
| **Performance****Period**  | Within 3 years | 3∼5 years |
| **TRL** | Final TRL up to 7th or 8th stage | Final TRL up to 5th stage |

\* Consortiums may include university, research institute or businesses

**□ Tech. Demand Survey (Global Cooperation Track) ②**

|  |  |
| --- | --- |
|  | **Global Cooperation Track** |
| **Defini-tion** | ◆ **(Aim)** Development of technologies that needs the cooperation with foreign partners either because its needed additional research capabilities or global market perspectives.  ※ For Global Cooperation Track, participation of a foreign organizations, along with lead Korean Organization(Principal Researcher), are to be required and will be stated in the funding opportunity announcements(RFP)**◆ Both types of R&D Programs(Innovative Product/Fundamental Technology) could be designated as Global Cooperation Tracks** |

**[Attachment 1-2]**

**□ Technology Readiness Level(TRL)**

|  |  |
| --- | --- |
|  | **Description** |
| **TRL 1.** | Scientific research begins translation to applied R&D Scientific research begins to be translated into applied research and development. Examples might include paper studies of a technology's basic properties. |
| **TRL 2.** | Invention begins Once basic principles are observed, practical applications can be invented. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies. |
| **TRL 3.** | Active R&D is initiated – Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative. |
| **TRL 4.** | Basic technological components are integrated to establish that the pieces will work together. |
| **TRL 5.** | Fidelity of breadboard technology improves significantly . The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment. Examples include “high fidelity” laboratory integration of components. |
| **TRL 6.** | Model/prototype is tested in relevant environment.Representative model or prototype system is tested in a relevant environment. Represents a major step up in a technology's demonstrated readiness. Examples include testing a prototype in a high-fidelity laboratory environment or in simulated operational environment. |
| **TRL 7.** | Prototype near or at planned operational system. Represents a major step up from TRL 6, requiring demonstration of an actual system prototype in an operational environment. |
| **TRL 8.** | Technology is proven to work.Actual technology completed and qualified through test and demonstration. |
| **TRL 9.** | Actual application of technology is in its final form.Technology proven through successful operations |

**[Attachment 1-3]**

Specific Technology Field of PD Survey Category

|  |  |
| --- | --- |
| **PD Field** | **세부기술** |
| Nano | o High-performance Nano-optical components, Super-sensitive Nano sensors, High-heat-dissipating nanomaterials and parts, Nano Surface heating element, Electro-Magnetic Interference shielding/absorber, High Elongation Transparent Conductive Film, Nano catalyst, Carbon based Nano Material application |
| Knowledge Service | o Examples of image recognition and speech recognition technology, CPS (Cyber Physical Systems) and Dgital Twin technologyo Knowledge base construction based on data, application of AI technology to service industry, research and application of service system (or service science)o Engineering engineering design technology, engineering work related to advanced work packaging (AWP), engineering process monitoring and forecasting maintenance |
| Bio | o HTS / HCS grade organotypes & 3D bio-chip development technology, bio artificial organs development technology, non-destructive real-time 3D bio-tissue analysis technology, biotechnology for 3D printer Ink material developmento Biodegradable bio-plastic adjustment technology, PLA replacement material Technology development, life plastic function upgrading or recycling (or up-cycling) technology, alternative fermentation / microbial process development technology and material discoveryo Core compound drug formulation technology (high degree of difficulty), biopharmaceutical device Mounting optimization technology, biomedical solution problem-solving technologyo Development of advanced technology (security, communication, linkage, compensation) based on healthcare data (medical, genome, PHR, food, etc.) |
| Medical Device | o Medical devices with artificial intelligence (imaging devices, image analysis, patient monitors, etc.) |
| Smart electronics | o Next-generation convergence-type smart home service and artificial intelligence technology-based home appliance manufacturing technology |
| Robot  | o Programming automation technology that allows non-experts to use robots easilyo Biomimetic robot technology |
| Advanced equipment | o 3D printing new business (DFAM, specialized design) Demand survey for project planningo Smart production system package and ultra-high-density equipment core element technology demand survey |
| Semiconductor | o PMIC technology for mobile / smart home appliances considering energy harvestingo Sensor-integrated SoC and flat pole technology for non-invasive self-diagnosis |
| Display | o Solution material technology for display manufacturing for direct printing methodo High color purity, high efficiency luminescent material technologyo Optical materials / parts technology for AR / VRo Ultra-compact micro LED display technology |
| Electric hydrogen car | o Technology related to battery system to shorten electric car charging time (such as charge importability or charge output improvement)o Technologies related to improving the durability of hydrogen fuel cell systems (component parts for large commercial vehicles)And systems)o Climate and heat management system related technologies for improving electric / hydrogen efficiencyAir conditioning and integrated heat management technology) |
| Chemical process | o Fine chemical materialso Chemical materials for electronic componentso eco-friendly plastic technologyo Waste plastic recyclingo Plastic-based materials for light-weight vehicles, parts technology |
| Fiber | o Nanofiber structure technology to improve functionalityo Smart fiber manufacturing and application technologyo Innovation performance (strength, heat resistance) Technical textile technologyo Eco-friendly fiber technology for recycling economyo Digitization technology of textile manufacturing |
| Ceramic | o Fuel cell material and application technology for high efficiency hydrogen electric vehicleo Development of multiple multi-3D printing system capable of simultaneous manufacture of various materials and customized material design / manufacturing technology such as ceramic / metal / polymero Ceramic material technology such as high permittivity / magnetic material for 5G and Beyond 5G communication for realizing ultra high frequency / low delay / super high speed characteristicso Ceramic material technology for optics for each wavelength band essential for realizing related core performance such as image data transmission for large-scale industrial revolution |

**[Attachment 1-4]**

Technology Field Classification

| **PD분야(20)** | **중분류(106)** | **소분류(478)** |
| --- | --- | --- |
| **바이오·의약****(Bio, Medicine)** | 의약바이오(Red BT) | 단백질의약품(Protein Drug)) |
| 항체의약품(Antibody therapeutics) |
| 백신(Vaccine) |
| 균주/효소의약품(Strain/Enzyme drug) |
| 바이오인공장기(Bio Artificial organ) |
| 세포치료제(Cell Therapy) |
| 조직재생치료제(Tissue regenerative medicine) |
| 유전자치료제(Gene therapy) |
| 원료의약품(저분자의약품)(Small molecule drug) |
| 천연물의약품(Natural durg) |
| 약효 및 안전성 평가기술(Efficacy and safety test technology) |
| 시약/진단제(Reagents/diagnostic product) |
| cGMP 생산기반기술(Technology based on cGMP Manufacturing) |
| 기타 의약바이오 제품/기술(Other Red BT products and technology) |
| 산업바이오(White BT) | 표준화 및 인증기술(Standardization and certification technology) |
| 바이오정밀화학소재(Bio precision chemical material) |
| 바이오플라스틱(Bioplastics) |
| 건강기능성식품(Health functional food) |
| 기타 산업바이오 제품/기술(Other White BT products and technology) |
| 융합바이오(Fusion BT) | 바이오진단기기(Bio diagnostic device) |
| 바이오마커 활용 기술(Technology based on bio-marker) |
| 바이오분석기기(Bio analytical equipment) |
| 기타 융합바이오 제품/기술(Other Fusion BT products and technology) |
| 그린바이오(Green BT) | 식물공장 관련 기술 (Vertical farm technology) |
| 형질전환생물체(Transgenic organism) |
| 친환경화학작물보호제(Eco friendly crop protection products) |
| 미생물작물보호제(Microorganism crop protection products) |
| 기타 그린바이오 제품/기술(Other Green BT products and technology) |
| **나노융합****(Nano Convergence)** | 나노소자(Nano Device) | 나노 기억소자(Nano Memory Device) |
| 나노 CMOS로직소자(Nano CMOS Logic Device) |
| 나노기반 전자소자(Nano Electronic Device) |
| 나노 광소자(Nano Optical Device) |
| 나노기반 유연소자(Nano Flexible Device) |
| 나노 센서소자(Nano Sensor Device) |
| 나노소재(Nano Materials) | 초경량/고강도 나노복합소재(Ultra Light and High Strength Nano composites) |
| 고전도성 나노복합소재(High Conductivity Nano composites) |
| 인쇄전자용 나노소재(Nano materials for Printed Electronics) |
| 전자파차폐흡수소재(Nano materials for Electromagnetic Wave Absorption and Shield) |
| 나노 필름소재(Nano materials for Films) |
| 나노잉크소재(Nano materials for Ink) |
| 다공성 나노소재(Porous Nano materials) |
| 나노촉매(Nano Catalyst) |
| 나노바이오(Nano Biotechnology) | 차세대 나노진단 제품 및 기기(Next-Generation Nano Diagnostic Tools) |
| 지능형 나노치료제 및 기기(Smart Nanomedicine and Medical Devices) |
| 나노웰빙제품(Nano Well-being Product) |
| 생체분자 나노분석장비(Nano Analytical Equipment for Biomolecules) |
| 나노기반 농수산식품(Nano Agricultural/Marinal/Food Product) |
| 나노에너지·환경(Nano Energy and Environment) | 나노융합 연료전지(Nano Fuel Cell) |
| 나노융합 태양전지(Nano Solar Cell) |
| 나노융합 이차전지(Nano Battery) |
| 나노융합 단열소재(Nano Insulation materials) |
| 미소에너지 하베스팅(Nano Energy Harvesting System) |
| 나노 환경촉매(Nanocatalysts for Environmental Technology) |
| 나노 흡착분리 소재(Nano adsorption or separation Materials) |
| 나노공정·측정·장비 (Nano Process, Measurement and Equipment) | 나노 박막장비(Nano Thinfilm fabricating Equipment) |
| 나노점·선 합성 및 정렬장비(Synthesis or Alignment Equipment of Nanoscale Dots or Wires) |
| 나노패터닝 장비(Nanopatterning Equipment) |
| 나노 화학·구조 분석장비(Nanoscale Chemical or Structural Analysis Equipment) |
| SPM·광융합 나노측정 장비(SPM- or Light-Based Nanoscale Measurement Equipment) |
| 나노물성측정장비(Nanoscale Property Measurement Equipment) |
| 나노 안전성(Nano Environment, Health and Safety) | 나노안전성관련 측정/분석기술(Nano Safety related Measurement/Analysis Technologies) |
| 나노물질 유해성평가 기술(Hazard Assessment Technology for Nano materials) |
| 나노물질 노출평가 및 노출저감(Exposure Assessment and Reducing Exposure of Nano materials) |
| 나노제품 안전성 기술(Safety Evaluation Technology for Nano Products) |
| **지식서비스****(Knowledge Service)** | 제품혁신지원 서비스(Product Innovation) | 스마트 제품 및 서비스(Development of smart products & services) |
| 제조업 서비스화, 서비스 제조화(Servitization of Manufacturing) |
| 프로세스혁신지원 서비스(Process Innovation) | 기획·설계혁신(Innovation of product planning & design) |
| 데이터 기반의 최적 의사결정, 공정혁신(Data based optimal decision making & process innovation) |
| 유통·물류혁신(Innovation of logistics & distribution) |
| 조직·관리혁신(Service systems for social security & disaster prevention) |
| 사회문제 해결형 서비스(Smart City) | 사회안전 및 재난예방 서비스/시스템(Service systems for social security & disaster prevention) |
| 공공서비스 혁신(Innovation of public services) |
| 공공정보 활용(Utilization of public information) |
| 인간생활 융합형 서비스(Human life Convergence) | 생활건강 케어(Life Health Care) |
| 스마트 라이프(편안/안전/퀘적/즐거움)(Smart life(convenience/safety/comfort/joy)) |
| 인적역량 강화(Education of human resources) |
| 서비스 디자인지원 서비스(Service Design) | 비즈니스 모델 개발(Creation of business models) |
| 사용자 관점 서비스 디자인, UI/UX(Customer oriented service design & UI/UX) |
| 서비스 운영기술 지원 서비스(Service Operation) | 서비스 전달체계 혁신(Innovation of service delivery systems) |
| 서비스 시스템, 최적 운영/관리(Optimal management of service systems) |
| 업종별 최적운영 지원 플랫폼(Optimal service management systems) |
| 지식서비스공통기반기술(Knowledge Creation & Management) | 지식 창출 : 인공지능, 빅데이터, 인지/감성(Knowledge creation technologies : AI, Bigdata, Cognition/Sensibility) |
| 지식관리, 지식기반 구축(Knowledge management & creation of knowledge base) |
| **엔지니어링****(Plant Engineering)** | 발전(Power Plant) | 복합/하이브리드 발전시스템 설계/운영/관리(Combined/Hybride Power Plant System design/operation/management) |
| 수처리&환경(Water purification, Environmental technology) | 담수화/정수/공정수 처리시스템 설계/운영/관리(desalination/purification/process-water treatment system design/operation/management) |
| 대기/하폐수/폐기물 처리시스템 설계/운영/관리(air/waste-water/waste matter treatment system design/operation/management) |
| 오일&가스(Oil&Gas) | 원유 정제/고도화(crude oil refining process) |
| 석유화학/고분자 공정(Petroleum chemical/polymer process) |
| 전통/비전통 에너지(conventional/unconventional energy) |
| 연료전환(Refuse-derived fuel, Fuel changeover system) |
| 육상/해상 플랜트 공정설계(overland/offshore plant) |
| 엔지니어링 공통(Fundamental common technology) | 선행설계(기본설계, FEED)(Upfront design(basic design, FEED)) |
| 해석(공정/장치/안전/신뢰성)(Analysis(process/installation/safety/reliability) |
| 프로젝트 기획(경제성/Risk)(Project planning(economic feasibility/Risk)) |
| 지능형 PM/PMC(Intelligent Project Management/Project Management Consultancy) |
| 다차원 모델링, 협업환경 구축(Multi-dimensional modeling, co-work environment) |
| 지능형 플랜트 운영/관리(Intelligent plant operation/management) |
| **미래형****자동차****(Future Vehicle)** | 전기자동차(Electric vehicle) | 전지시스템(Battery system) |
| 충전시스템(Charging system) |
| 구동/제어시스템(Drive/control system) |
| 차체/샤시시스템(Body/chassis system) |
| 연료전지자동차(Fuel cell electric vehicle) | 연료전지 스택(Fuel cell stack) |
| 운전장치 및 제어시스템(Driving unit & control system) |
| 수소저장시스템(Hydrogen storage system) |
| 전기동력시스템(Electric power system) |
| 차체/샤시시스템(Body/chassis system) |
| 하이브리드자동차(Hybrid electric vehicle) | 구동/제어시스템(Drive/control system) |
| 전력전장시스템(Power electronics system) |
| 에너지 저장시스템(Energy storage system) |
| 차체/샤시시스템(Body/chassis system) |
| 천연가스 자동차(Natural gas vehicle) | 엔진제어 시스템(Engine control system) |
| 연료분사 시스템(Fuel injection system) |
| 연료저장 시스템(Fuel storage system) |
| 클린디젤 자동차(Clean diesel vehicle) | 동력발생 및 전처리 시스템(Power generation & pre-processing system) |
| 후처리 시스템(Post-processing system) |
| 엔진제어 시스템(Engine control system) |
| 가솔린 자동차(Gasolin vehicle) | 동력발생 및 전처리 시스템(Power generation & pre-processing system) |
| 후처리 시스템(Post-processing system) |
| 엔진제어 시스템(Engine control system) |
| 자동차 안전 기술(Automotive safety technology) | 센싱시스템(Sensing system) |
| 액츄에이팅시스템(Actuating system) |
| 수동안전시스템(Manual safety system) |
| 운전보조시스템(Driving assist system) |
| 사고 예방/회피 시스템(Accident prevention / avoidance system) |
| (반)자율주행시스템((Half) Autonomous driving system) |
| 자동차 편의 기술(Automotive convenience technology) | HMI 시스템(HMI System) |
| 자동차 상태 모니터링 시스템(Vehicle condition monitoring system) |
| 운전 지원 단말 시스템(Driving support terminal system) |
| 자동차용 무선 통신 기술(Automotive wireless communication technology) |
| 모바일 오피스 시스템(Mobile Office System) |
| 융합 기반 기술(Fusion-based technology) | Eco-ITS연계시스템 (Eco-ITS linkage system) |
| In Vehicle Network 기술 (In Vehicle Network technology) |
| 자동차용 SoC 기술 (Automotive SoC technology) |
| 자동차용 임베디드 기술 (Automotive embedded technology) |
| 시험 및 표준화 기술 (Testing and standardization technology) |
| **조선해양****(Shipbuilding & Offshore plant)** | 조선(Shipbuilding) | 고효율 친환경 선박 기술(High efficient & eco-friendly ship technology) |
| 극한지 운항 선박 기술(Arctic operations ship technology) |
| 여객/레저용 선박 기술(Cruise/leisure ship technology) |
| 조선 설계/생산성 향상 기술(Ship design/productivity improvement technology) |
| 해양플랜트(Offshore plant) | 해양 플랫폼 기술(Offshore platform technology) |
| 상부 공정 시스템 기술(Topside process system technology) |
| 해저 생산 및 처리 설비 기술(Subsea product & treatment system technology) |
| **기능성섬유****(Technical Textile)** | 패션섬유(Textiles for Clothing and Fashion) | 프리미엄 패션의류(Premium Fashion Product) |
| 제조공정혁신(Manufacturing Innovation) |
| 의류·생활용테크니컬 섬유(Technical Textiles for Clothing and Living Environment) | 친환경·고감성·고기능 섬유(Aesthetic, Eco-friendly, High-Performance & Functional Textiles) |
| 보호용 섬유(Protective Textiles)  |
| 스마트 섬유(Smart Textiles) |
| 인테리어·웰빙 섬유(Textiles for Interior Design and Well-living) |
| 스포츠 레저 용품(Textile Goods for Sports & Leisure) |
| 산업용테크니컬 섬유(Technical Textiles for Industrial Applications) | 수송·해양용 섬유(Textiles for Transportation & Marine Application) |
| 에너지·환경 산업용 섬유(Textiles for Energy & Environmental Industry) |
| 바이오·메디컬 섬유(Textiles for Bio & Medical Industry) |
| 산업자재(생산설비/토목건축용)(Textiles for Production Line & Construction) |
| **세라믹****(Ceramics material)** | 광전자소재 (Optical/Electronic ceramics) | 유전ㆍ절연 세라믹(Dielectric·Insulating ceramics) |
| 압전 세라믹(Piezoelectric ceramics) |
| 센서 세라믹(Sensor ceramics)  |
| 자성 세라믹(Magnetic ceramics) |
| 광기능성 세라믹(Optical ceramics) |
| 도전성 및 반도성 세라믹(Conducting·Semiconducting creamics) |
| 기타 광ㆍ전자 세라믹(Other optoelectronic ceramics) |
| 에너지·환경소재(Energy∙environmental ceramics) | 에너지 저장ㆍ변환 세라믹(Energy storage·conversion creamics) |
| 분리ㆍ유해성분 제거기능 세라믹(Separation function·Hazardous substance removing ceramicss) |
| 재활용 기능성 세라믹(Recycling functional ceramics) |
| 기타 에너지ㆍ환경 세라믹(Other energy·environment materials) |
| 기계·구조소재(Mechanical-engineering ceramics) | 내화ㆍ내열 세라믹(Refractory·Heat-resistant ceramics) |
| 구조 및 기계가공성 세라믹(Structural and machinable ceramics) |
| 절삭ㆍ연마ㆍ연삭용 세라믹(Ceramics for cutting, grinding and machining tools) |
| 극한환경용 세라믹(Ceramics for extreme environment) |
| 세라믹/탄소섬유 및 기타 복합 소재(ceramic matrix composites) |
| 바이오소재(Bio ceramics) | 조직재생용 세라믹(Tissue regeneration ceramics) |
| 체외진단용 세라믹(In vivo diagnostic ceramics) |
| 뷰티케어용 세라믹(Beauty-care ceramics) |
| 기타 산업바이오 세라믹 (Other industrial bioceramics) |
| 생활세라믹(Living ceramics) | 도자기․타일․벽돌(Pottery․tile․brick) |
| 시멘트․콘크리트(Cement.Concrete) |
| 유리ㆍ법랑(GlassㆍVitreous Enamel) |
| 기타 생활세라믹 소재(Other living Ceramics) |
| 세라믹공정기술(Ceramic processing technology) | 분체 및 원료합성기술(Powder and raw materiasl synthesis) |
| 성형ㆍ소성ㆍ가공기술(forming · Ceramic sintering · processing) |
| 결정성장 기술(crystal growth) |
| 박막 및 코팅기술(Thin film and coating) |
| 기타 세라믹공정 및 부품ㆍ모듈화 기술(Other ceramic processing, parts & module) |
| **금속재료****(Metallic Materials)** | Mobile Metal | 자동차(Automobile) |
| 철도(Railway) |
| 우주항공(Aerospace) |
| 조선(Shipbuilding) |
| Safety-Infra Metal | 건설토목(Construction/Civil Engineering) |
| 원자력(Nuclear Power) |
| 인프라 안전/편의(Infra Safety/Convenience) |
| 국방안보(National Defense Security ) |
| SoC(SoC Material) |
| Energy Metal | 발전플랜트(Electric Generation Plant) |
| 해양플랜트(Offshore Plant) |
| 에너지 네트워크(Energy Network) |
| 비전통 에너지(Non-Traditional Oil and Gas Related Energy) |
| 신재생 에너지(New Renewable Energy) |
| 수소 에너지(Hydrogen Energy) |
| Smart Metal | 바이오(Bio Material) |
| 정보통신(IT Network Material) |
| 전략희소 금속소재(Strategic Rare Metal) |
| 3D 프린팅소재(3D Printing Material) |
| Green Process | Zero emission(Zero Emission) |
| 4R (Reduce, Reuse, Recycle, Replace) |
| CO2 삭감 기술(CO2 Reduction Technology) |
| 에너지 절감(Energy Saving) |
| 원료사용(Usage of Raw Material) |
| **화학공정****소재****(Chemical Process/Material)** | 에너지·자원 효율 공정산업(Energy/resource process) | 탄소소재(Carbon Materials) |
| 기초유분(olefin) |
| 대체원료(Alternative feed stocks) |
| 공정고도화(Process Networking and Intensification) |
| 정보전자소재(ICT material) | Touch Panel 소재(touch panel material) |
| 편광판 소재(film material) |
| BLU 소재 및 OLED 소재(BLU material or OLED material) |
| 차세대 디스플레이 패널 소재(Next-generation display panel) |
| 반도체용 공정소재(semiconductor material) |
| 산업ㆍ수송용 고분자소재 (Polymer materials for transporation & industrial application) | 산업용 고분자 소재 (Industrial polymer materials) |
| 구조용 고분자 소재 (Structural polymer materials) |
| 수송용 고분자 소재(Polymer materials for transportation) |
| 표면기능소재(Fine Chemical) | 점/접착 소재(adhesive material) |
| 염/안료 소재(dye/pigment material) |
| 도료/기능성코팅소재(paint/functional coating material) |
| 화장품소재(cosmetic material) |
| 환경에너지 화학소재(Eco-material) | 환경소재(Environmental material) |
| 에너지소재(Energy material) |
| **뿌리기술****(Fundamental Technology)** | 주조(Casting) | 사형주조기술(Sand Casting)　 |
| 금형주조기술(Permanent Mold Casting)　 |
| 다이캐스팅기술 (DieCasting)　 |
| 특수주조기술(Special Casting)　 |
| 주조재료기술(Casting materials)　 |
| 금형(Molding) | 플라스틱금형기술(Plastic Mold Technology)　 |
| 프레스금형기술(Press die Technology)　 |
| 특수금형기술(Special Mold Technology)　 |
| 소성가공(Plastic working) | 단조기술(Forging technology)　 |
| 압출/인발성형기술(Extrusion/Drwaing technology)　 |
| 판재성형기술(Sheet metal forming technology)　 |
| 압연기술(Rolling technology)　 |
| 특수성형기술(Special forming technology)　 |
| 열처리(Heat treatment) | 침탄기술(Carburizing)　 |
| 질화기술(Nitriding)　 |
| 전경화기술(Total Hardening)　 |
| 국부경화기술(Local Hardening)　 |
| 표면처리(Surface treatment) | 도금기술(Plating tech.) |
| 도장기술(painting tech.)　 |
| 건식코팅기술(dry coating tech.)　 |
| 습식코팅기술(wet coating tech.)　 |
| 용접접합(Welding and Joining) | 용접공정기술(Welding process)　 |
| 용접기자재기술(Welding equipment)　 |
| 용접재료기술(Welding consumable)　 |
| 칩레벨접합기술(Chip level joining)　 |
| 표면실장접합기술(Surface mount joining)　 |
| **첨단장비****(Advanced Manufacturing Equipment)** | 정밀가공시스템(High-Precsion Machining System) | 고속/복합 가공시스템(High-Speed & Multi-Tasking Machining System) |
| 초미세 가공시스템(Ultra-Precision Machining System) |
| 하이브리드 가공시스템(Hybrid Machining System) |
| 대형 절삭/성형시스템(Large-Scale Cutting & Forming System) |
| 3차원 적층제조시스템(Additive Manufacturing System) |
| 재구성 유연 생산시스템(Reconfigurable/Flexible Manufacturing System) |
| 사출성형시스템(Injection Molding System) |
| 디지털 생산운영/서비스 솔루션(Digital Manufacturing Management & Service Solutions) |
| 마이크로/나노 생산시스템(Nano & Micro Scale Manufacturing System) | 기능성 마이크로/나노 구조체 생산시스템(Functional Nano & Micro Scale Hybrid Structure Manufacturing System) |
| 롤투롤 연속 생산시스템(Roll to roll Continuous Manufacturing systems) |
| 융복합 디바이스 생산시스템(Convergence Device Manufacturing systems) |
| 고속/대면적 측정/검사 시스템(High Speed/Large Area Measurement/Inspection systems) |
| 섬유기계(Textile Machinery) | 방사/방적/사가공기(Spinning Texture Machinery) |
| 제직/편직기(Weaving/Knit Machinery) |
| 염색/가공설비(Dyeing & Finishing Machinery) |
| 편성/자수 시스템(Knitting/Embroidery Machinery) |
| 부직포 및 산업용 제조설비(Non-Woven Fabric & Industrial Manufacturing Machinery) |
| **첨단기계****(Advanced Machine)** | 건설기계(Construction Machinery) | 친환경 고효율 동력전달시스템(Eco-Friendly & High-Efficiency Power System) |
| 지능형 작업시스템(Intelligent Work System) |
| 극한작업 및 특수목적용 건설기계(Extremely Dangerous Environment & Special Purpose Construction Machinery) |
| 농업기계(Agricultural Machinery) | 고성능 고효율 농업용 동력기계 시스템(High Performance Agricultural Power Machinery System) |
| 지능형 융복합 농업용 자동화 시스템(Intelligent & Fusion-Based Agricultural Automation System) |
| 농작업기계 및 부품(Agricultural Equipment and Parts) |
| 승강기(Elevator) | 친환경 승강기 시스템(Eco-Friendly Elevator System) |
| 지능형 운영시스템(Intelligent Operating System) |
| 초고속, 초고층용 승강기 시스템(High-speed, High rise building Elevator System) |
| 분석장비(Analysis Equipment) | 광 분석장비(Photo Analysis equipment) |
| 화학 분석장비(Chemical analysis equipment) |
| 융합 분석장비(Integrated analysis equipment) |
| 기타 분석장비(other-types of analysis equipment) |
| 계측장비(Measuring Equipment) | 광 계측장비(Photo measuring equipment) |
| 전자 계측장비(Electrical/electronic measuring equipment) |
| 융합 계측장비(Integrated measuring equipment) |
| 기타 계측장비(other-types of measuring equipment) |
| 시험장비(Testing Equipmnet) | 재료물성 시험장비(Material property testing equipment) |
| 기후환경 시험장비(Environmental testing equipment) |
| 전기계측 시험장비(Electrical/electronic testing equipment) |
| 기타 시험장비(other-types of testing equipment) |
| **지능형로봇****(Smart Robotics)** | 로봇제품군 (Robot Products) | 중소기업 제조로봇 (Industrial Robots for small and medium enterprises) |
| 첨단제조로봇 (Industrial Robots for cutting edge technology) |
| 생활지원로봇 (Life care Robot) |
| 교육문화로봇 (Robot for Education and Culture) |
| 농축수산로봇 (Robot for Agriculture, livestock farming and Fishing) |
| 건설교통해양로봇 (Robots for Construction, Transport and Marine) |
| 의료로봇 (Medical Robot) |
| 국방안전로봇 (Robots for Defense and Security) |
| 기타 융합 제품, 서비스 (Other Robot, Services) |
| 공통기술 (Core Technology) | 인식 지능 (Sensing Technologies) |
| 판단 지능 (Thinking Technologies) |
| 동작 지능 (Acting Technologies) |
| 부품 (Parts) |
| 플랫폼 (Platform) |
| 기타 관련 기술 (Other technologies) |
| 로봇화 기술 (Robotization Technology) | 로봇화 기술 (Robotization Technology) |
| **메디칼****디바이스****(Medical Device)** | 치료기기(treatment device) | 수술/중재적 치료기기(Surgical / Interventional treatment device) |
| 방사선/초음파/광 치료기기(X-ray / ultrasound / laser treatment device) |
| 인공장기(Artificial organ) |
| 한의학기반치료기기(Oriental medicine treatment device) |
| 융복합 및 기타 치료기기(Convergence & Other treatment device) |
| 생체현상계측기기(Biomedicalmeasurement device) | 생체신호 측정/진단기기(Biomedical signal measurement / diagnostic device) |
| 임상화학 및 생물분석기기(Clinical Chemistry and Biological analyzer) |
| 분자유전진단기기(Molecular genetic diagnostic device) |
| 한의학기반진단기기(Oriental medicine diagnostic device) |
| 영상진단기기(Imaging diagnostic system) | 초음파 영상진단기기(Ultrasound imaging system) |
| X선 영상진단기기(X-ray diagnostic system) |
| MRI(MRI system) |
| 핵의학영상진단기기(Nuclear medicine imaging system) |
| 광학영상진단기기(Optical imaging system) |
| 융복합 및 기타 영상진단기기(Convergence & Other imaging system) |
| 재활 및 복지기기 rehabilitation & welfare device | 감각/운동 기능 재활훈련기기(Sens / motor function rehabilitation training device) |
| 이동/생활 지원기기(Moving / Life support device) |
| 신체/인지/감각기능 지원기기(Body / Recognition / Sens function support device) |
| 기타 재활 및 복지관련 기술/기기(Other rehabilitation and welfare related technology / devices) |
| 의료용재료(Biomaterial) | 구조 복원용 재료(Materials for restoration) |
| 생체재료(Biomaterial) |
| 기타 체내삽입형 재료(Other Implantable materials) |
| 의료정보 및 기기관리(Medical Information & Device Management System) | 원격 및 재택 의료기기(Telemedicine & home medical devices) |
| 의료정보 시스템 및 U-HER(Medical(Hospital) Information System and U-HER) |
| 평가 및 안전관리(규격/품질/평가/안전)(Evaluation and Safety Management (Standard / Quality / Evaluation / Safety)) |
| **산업융합****(Industry Convergence)** | 주력산업 IT융합(IT Convergence with Traditional Industries) | 차량 IT 융합 기술(IT Convergence with Automobile) |
| 조선해양 IT 융합 기술(IT Convergence with Shipbuilding & Marine Engineering) |
| 항공 IT 융합 기술(IT Convergence with Aircraft) |
| 섬유 IT 융합 기술(IT Convergence with Textile) |
| 에너지 IT 융합 기술(IT Convergence with Energy) |
| 산업간 융합(Cross-Industries Convergence) | IT-BT-NT 융합(IT-BT-NT Convergence) |
| 의료, 헬스 융합(Medical & Healthcare Convergence) |
| 커머스, 유통, 금융 융합(Commerce-Delivery-Financial Convergence) |
| 교통, 건설, 공공, 안전 융합(Transportation-Construction-Public-Safety Convergence) |
| 주력산업 고도화 (Industry Evolution) | 제품/제조-서비스 융합(Product/Manufacturing-Service Convergence) |
| O2O 서비스 융합(O2O Convergence) |
| 유연/맞춤형 생산(FMS(Flexible Manufacturing System)) |
| 예측 유지보수 서비스(Predictive Maintenance) |
| 주력산업 지능화/자동화 (Industrial Intelligence & Automation) | IT 융합 서비스 플랫폼, Open API, PaaS/SaaS, DevOps(IT Convergence Service Platform, Open API, PaaS/SaaS, DevOps) |
| 인공지능, 가상/혼합 현실, CPS(Artificial Intelligence, Virtual/Augmented/Mixed Reality & CPS(Cyber-Physical System) for Industrial Application) |
| IoT, 멀티모달 센싱, 데이터 퓨전(IoT, Multimodal Sensing, Data Fusion) |
| 주력산업 빅데이터(Big data for Industry) | 주력산업 제조/공정 빅데이터(Manufacturing/Process Big Data for Industry) |
| 주력산업 제품/사용자 빅데이터(Product/User Big Data for Industry) |
| 빅데이터 처리, 분석, Offloading(Big Data Processing, Analytics & Offloading) |
| 에너지 관리 및 하베스팅 (energy management & harvesting) | 에너지 하베스팅(Energy Harvesting) |
| 에너지/전원 자립형 초저전력 구동(Self-powered Dynamic System) |
| 무선 전력 전송(Wireless power transmission) |
| 웨어러블(Wearable) | 웨어러블 입력, 출력, UI/UX, 처리, 전원 기술(Wearable Input, Output, UI/UX, Processing, Power) |
| 웨어러블 신체 착용/부착/이식형 기술(Wearable Portable/Attachable/Implantable) |
| 웨어러블 소재/부품/센서/반도체, 유연/신축 디스플레이/전지/기판(Wearable Materials/Parts/Sensors/SoC, Flexible/Stretchable Display/Battery/Substrate) |
| 웨어러블 SW 플랫폼 및 개발환경, 웨어러블용 보안기술/클라우드/빅데이터/인공지능(Wearable SW Platform & Development Environments, Security/Cloud/Big Data/AI for Wearable) |
| **차세대****디스플레이****(Next Generation Display)** | LCD | LCD 모듈(LCD module) |
| LCD용 장비(Equipments for LCD) |
| LCD 소재부품(LCD materials/parts) |
| OLED | 소형 AMOLED 모듈(Small-sized AMOLED module) |
| 대형 AMOLED 모듈(Large-sized AMOLED module) |
| AMOLED용 장비(Equipments for AMOLED) |
| AMOLED 소재부품(AMOLED materials/parts) |
| 플렉시블 디스플레이(Flexible display) | 플렉시블 디스플레이 모듈(Flexible display module) |
| 플렉시블 디스플레이용 장비(Equipments for flexible display) |
| 플렉시블 디스플레이 소재부품(Flexible display materials/parts) |
| 신기능 디스플레이(New-fuction display)  | 공간형 디스플레이(space display) |
| 프로젝션 디스플레이(Projection display) |
| 투명 디스플레이(transparent display) |
| 반사형 디스플레이(reflective display) |
| 입력장치 및 UI/UX(Input device and UI/UX) |
| 기타 신기능 디스플레이(other-types of New display) |
| 융합 디스플레이(Convegence display) | 수송기기용 디스플레이(display for Transport Device) |
| 교육용/퍼블릭 디스플레이 (Educational/Public Display) |
| 기타 융복합 디스플레이 (other Convergence display) |
| **지능형****반도체****(System Semiconductor)** | 반도체 소자(Semiconductor devices) | 메모리소자 (Memory Devices) |
| 로직 소자 (Logic Devices) |
| 아날로그 및 혼성 반도체 소자 기술 (Analog & Mixed signal device) |
| 전력반도체 (Power MOSFET) |
| 기타 소자 (Other Devices) |
| 반도체 공정(Semiconductor process) | 전공정 기술 (Front-end process) |
| 후공정 기술 (Back-end process) |
| 측정/분석 및 테스트 기술(Metrology/Inspection & Test 기술) |
| 반도체 장비(Semicoductor Manufacturing Equipment) | 전공정 장비 (Equipments for Front-end of Line) |
| 후공정 장비 (Equipments for Back-end of Line) |
| 측정/분석/검사 장비(Equipments for Metrology/Inspection&Test) |
| 반도체 소재/PCB (Semiconductor materials/PCB) | 반도체 소재 및 가공기술 (Semiconductor Materials & Processing Technology) |
| Gas 및 Chemical (Gases/Wet chemicals) |
| PCB (Printed Circuit Board) |
| 시스템반도체(System on Chip(SoC)) | 고주파 반도체(RF Semiconductor Device) |
| 디스플레이 반도체(Display SoC) |
| 멀티미디어 반도체 (Multimedia SoC) |
| 바이오/의료기기 반도체(Bio/Medical SoC) |
| 센서반도체(Sensor Semiconductor Device) |
| 스토리지 반도체(Storage SoC) |
| 자동차 반도체 (Automotive SoC) |
| 전력/에너지 반도체 (Power/Energy Semiconductor Device) |
| 통신/방송 반도체(Communication/Broadcasting SoC) |
| 프로그래머블 로직 반도체(Programmable Logic Semiconductor Device) |
| 프로세서(Processor) |
| SoC 공통기술(SoC Common Technology) |
| **스마트전자****(Smart Electronics)** | 홈플랫폼(Home Appliance Platform) | 정보가전 미들웨어 (Information Home Appliance Middleware) |
| 홈클라우드 (Home Cloud) |
| 홈빅데이터해석(Home Big Data Analysis) |
| 유무선 통신(Wired/Wireless Communication) |
| 실감형 가전(Realistic Appliance) | 3D 카메라(3D Cameras) |
| 3D 스캐너(3D Scanners) |
| 실감 TV 및 모바일 디스플레이(Realistic TV & Mobile Display) |
| 실감형 헤드마운트 기기(Realistic Head-mounted Devices) |
| 홀로그램 프린팅(Hologram Printing) |
| 지능형 융합 가전(Smart Convergence Appliances) | 미디어가전(Media Home Appliances) |
| 케어가전(Life care Appliances) |
| 보안가전(Security Home Appliances) |
| 냉난방가전(Heating & Cooling Appliances) |
| 환경 및 에너지가전(Environment & Energy Appliances) |
| 주방가전(Household Home Appliances) |
| 소형가전(Small Home Appliances) |
| 3D 프린터(3D Printing,Additive Manufacturing) | 광중합형(Photo-Polymerization (PP) type) |
| 재료압출형(Material Extrusion (ME) type) |
| 접착제분사형(Binder Jetting (BJ) type) |
| 재료분사형(Material Jetting (MJ) type) |
| 분말적측용융형(Powder Bed Fusion (PBF) type) |
| 고에너지직접조사형(Direct Energy Deposition (DED) type) |
| 3D 프린팅 공정 최적화 기술(Optimal Process Technology for 3D Printing) |
| 3D 프린팅 후처리 기술(post processing technology for 3D printing) |
| LED 광소자 | LED 제조장비(LED manufacturing Equipment) |
| 기판 및 원료(wafer and material) |
| 비가시광 LED(invisible light LED) |
| 가시광 LED(visible light LED) |
| 패키지 소재(packaging material) |
| 패키지 공정(packaging process) |
| LED 융합 | LED 융합엔진(LED Convergence engine) |
| LED 메디바이오 융합(LED medical & bio Convergence) |
| LED 수송융합(LED transportation Convergence) |
| LED IT 융합(LED IT Convergence) |
| LED 해양 융합(LED marine Convergence) |
| LED 농생명 융합(Agricultural & Life Convergence)  |
| LED 문화관광 융합(LED culture & tourist industry Convergence) |
| 기타(etc.) |
| LED/OLED 조명 | LED 조명 엔진/부품(LED lighting Engine/component) |
| 실내외 조명기구(interior & exterior lighting fixtures) |
| 스마트 조명 시스템(smart lighting system) |
| OLED 조명 소재/부품(OLED lighting material/component) |
| OLED 조명용 공정 장비(OLED lighting process equipment) |
| OLED 광원기술(OLED light source technology) |
| 광소재 | 광학부품(optical component) |
| 광소재(optical material) |
| 광계측 및 센서 | 광계측(optical measurement) |
| 광센서(optical sensor) |
| 가공용 레이저 | 매크로 프로세싱(macro processing) |
| 마이크로 프로세싱(micro processing) |
| 의료용 레이저 | 레이저 치료(laser treatment) |
| 레이저 진단(laser diagnosis) |
| 통신용 레이저 | 텔레콤 광모듈(telecom optical module) |
| 데이터콤 광모듈(datacom optical module) |
| 컴퓨터콤 광모듈(computercom optical module) |
| IT 컨슈머 | 정보입출력기기(information input & output device) |
| 정보저장기기(information storage device) |
| 영상표시기(image display device) |