Requirements

Environmental safety

- Majors in environment, energy, sustainable management, safety and health, fire fighting, or corresponding major knowledge
- Knowledge and diagnostic technology related to equipment and process safety
- Technical power-based legal interpretation ability

Infrastructure Technology

- Chemicals,electrical and electronics, architecture/civil engineering, materials/metals, machinery, industrial engineering, environment/ safety, mathematics/statistics majors
- Major-related engineer certificate or corresponding knowledge
- Competency in solving engineering problems based on technical theory
- ISO9001 and IATF 16949 related knowledge and audit technology
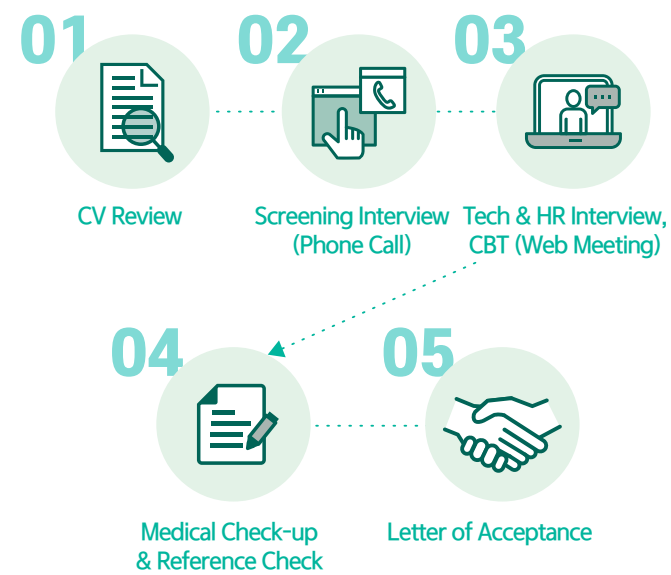
Evaluation and Analysis

- Majors in new materials, materials, chemicals/chemicals, machinery, environment, and energy, or corresponding major knowledge;
- Related knowledge and capabilities that can be used for micro-analysis of semiconductor clean rooms, environment/materials/wafer

Future Technology Development

- Engineering majors such as structure/flow/vibration/noise/ computational chemistry/chemical process/MBSE/plasma/ machine/electricity/computer, or corresponding major knowledge
- Simulation, programming, data science and data utilization/analysis capabilities and experience holders (Python, SQL, etc.)

GLOBAL MANUFACTURING & INFRA TECHNOLOGY

Recruiting Process

[Experienced workers]

01 CV Review

02 Screening Interview (Phone Call)

03 Tech & HR Interview, CBT (Web Meeting)

04 Medical Check-up & Reference Check

05 Letter of Acceptance

[Samsung Scholarship Program(PhD)]

Requirement	More than a year of PhD course (*more than 3 years of joint MD&PhD course)
Recruitment Period	1~2 times a year (May-July, September~November)

Inquiry

Contact

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Visitor Log

Samsung Electronics Device Solutions Global Manufacture & Infra Technology

SAMSUNG

"Samsung Electronics Announces Eco-friendly RE100, the New Environmental Management Strategy."

As Samsung Electronics announced 'New Environmental Management Strategy' on 15th of September 2022, we changed the paradigm of our business to eco-friendly management. We have launched a 'challenge' toward carbon neutrality, investing 7 Trillion won by 2030, for contributing to the resolution of the environmental crisis: reducing process gas, recycling discarded electronic products, preservation of water resources, and minimization of pollutants.In response, the global manufacturing & infra technology division will concentrate on the achievement of the following objectives.

Division's 3 Main Objectives

1. Zero Carbon Net Emissions by 2050 and Zero Neutrality
2. stablishing a resource circulation system, Expanding the application of resource circulation materials/parts, Zero landfilling of industrial waste
3. Development and Application of Technology to Minimize Air/Water Pollutants

Future Vision of the global manufacturing & infra technology

Establishing the World's Largest Semiconductor Plant Infrastructure

- World's largest semiconductor business infrastructure supply / quality management technology
- Development of flawless infrastructure capabilities / growth opportunities that lead to ultra-gap in semiconductors.

Global No.1 Leading Eco-friendly Leadership

- Pre-emptive response to national carbon neutrality policies and environmental laws(Green-house gas emission management, renewable energy expansion)
- Aiming for the world's best environmental safety standardization model
- the only environment &safety research institute organization in Korea(EHS research institute)

Hub of Chemical Analysis Technology in Global DS

- Supporting Wafer product mass production department, affiliates and partners based on the best chemical analysis capability
- Exchange of technology and manpower in Xi'an, China / Austin, USA

Job Description

Environmental Safety

Environment

- Carbon/water/waste/chemical reduction, water reuse, resource circulation, energy efficiency expansion, Domestic and foreign international certifications of ISO/Foot-Print/green companies, etc.
- Measures to achieve carbon neutrality, such as responding to the greenhouse gas emission trading system, reducing management, securing external packing projects, utilizing renewable energy, and expanding low-carbon processes/technology, are drawn up.
- Operation of ecological surveys of discharged rivers, environmental cleanup activities, environmental sister schools, and ecological field trip
- Response to domestic and international regulations related to environment/water quality/air/waste/chemicals
- Acquiring and maintaining certification of eco-friendly products (ISO, green enterprises, waste landfill zeros, etc.)

Safety and health

- Support for on-site safety diagnosis and irrational improvement, inspection of compliance with laws and regulations, improvement of violations, and licensing management;
- Environmental/safety/health/disaster prevention simulation and technology-based prediction, accident cause investigation and analysis;
- Management of Physical/Chemical/Biological Hazard Factors and Establishment of Safe Working Environment
- Health promotion of executives and employees, promotion of activities to prevent infectious diseases, health checkups, and operation and management of medical institutions;
- Partner companies' environmental safety capacity building activities and evaluation/verification
- Establishment of advanced disaster prevention standards suitable for semiconductor production environments and response to complex disaster situations;

Infrastructure Technology

Construction technology

- FAB Optimal Size Estimation and Concept Design, New Model and Complex Planning
- Construction Project Design Review and Drawing/Cost/Construction Management
- Securing construction budget, cost strategy/planning, construction cost calculation standard system establishment and verification
- Establish PJT Master Schedule, manage execution power, and establish standard process management system
- Review construction safety regulations and conduct internal and external response tasks

Facility/Utility Technology

- Facility/Utility System(HVAC, UPW, Exhaust, Bulk Gas, Wastewater, etc.)
- Design/Construction by Identifying Elemental Conditions
- Building High Efficiency Infrastructure System through New Technology Development
- Supply quality and load rate management, irrational discovery/measure improvement
- Response to abnormal occurrence of semiconductor infrastructure systems and activities to prevent secondary accidents;
- Research on pipe/facility RBI diagnosis, new technology/new method trend, abnormal source analysis, construction standard enactment/revision

Gas/Chemical

- Gas Chemical System Infrastructure Operation/Maintenance/Repair and Safety Management Prevention Activities
- New Equipment Set-up / Retrofit / Difficulty Solution / Line Planning / Future Technology Development
- Equipment automation, system development/application, GCS material development/technology improvement
- Application of laws and regulations, such as the Chemicals Control Act, the High
- Pressure Gas Act, and the PSM (Process Safety Report)

Infrastructure QA

- Construction/Supply/Quality Assurance and Audit of Infra
- Standard management, evaluation criteria establishment and accident prevention management of Infra

Technology for infrastructure planning and facility innovation

- Technology for infrastructure planning and facility innovation
- Technical planning for infrastructure design/construction/operation
- Securing timely electricity/water and establishing optimal operation plans by securing future FAB infrastructure
- Establishment of timely supply chain for parts, efficiency of inventory operation, and establishment of standards for supply quality control

Electrical technology

- Electric power system monitoring, operation, and emergency response
- Construction, preservation, and maintenance of electric facility/plant
- Standardization in electrical specification and work
- Developing and adopting up-to-date technologies such as fault detection and diagnosis
- Safety management and energy saving

Evaluation and Analysis

Infra Analysis

- Cleanroom Technology-Cleanroom contamination monitoring and control in order to maintain quality and improve yield enhancement
- Establish standards for cleanliness and hygiene for the cleanroom environment t& manufacturing equipment
- Monitor cleanroom and manufacturing equipment quality through the use of specialized, online monitoring equipment and monitoring software
- Utilization of subminiature trace gas sensors for focused monitoring
- Utilization of artificial intelligence, machine learning, and data science techniques to identify issues early before they affect the cleanroom environment
- Optimization of HVAC (Heating, Ventilating and Air Conditioning), Contamination Control
- Explore the use of nano filtration technology for improved cleanliness
- Qualification and management of cleanroom supplies, products, and consumable apparel

Chemical Analysis Technology

- Find root cause of yield loss and provide solutions by analyzing wafer surface contamination/bulk chemical impurities
- Explore the use of automated wafer surface contamination analysis by utilizing data science techniques
- Analyze industrial emissions and effluent for best possible cleanliness for the environment
- Maintain bulk chemical quality control by monitoring for impurities that impact semiconductor products

Future Technology Development

Infrastructure and EHS R&D

- Prediction, Assessment and Control Technology for the Risk of Chemical Reactions and By-Products in Manufacturing Process
- Core Safety Technology for the Chemical Supply System/Optimization based on Simulation·Data Science
- Material, Process and Equipment Technology for Reduction of Hazardous Pollutants Emission & Implementation of Carbon Neutral Exhaust/Air Supply System
- Reduction and Recyle Technology for Hazardous Contaminants andResources in the Water Treatment Process
- Robotics and Automation Technology for Inspection, Maintenance and Logistics to Replace High-Risk, Monotonous and Repetitive Tasks
- Physical and Data-based Modeling-Simulation and, Optimum and Prediction Control Technology for the Infrastructure System
- Mid and Long-Term R&D Planning and Strategy for Infrastructure and EHS Technology

Digital Twin/Data Science

- Leading digital transformation for Implementing digital-based work environment and securing DS's future competitiveness
- Planning & Managing projects to realize Autonomous FAB/Infra in the future
- Promoting modernization of the way we work with innovation of processes and systems
- Adapting state-of-the-art and future technologies through open innovation(e.g. Simmulation, Artifical Intelligence, Robotics, Autonomous manufacturing)

R&D

Infrastructure Technology

Environmental Safety