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The Total Solution Creator

Samsung Electronics Device solutions

Create the Future You Imagine

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Memory Business

Business Field: DRAM (DDR, RDD, XDR, GDDR, UDRAM, OneDRAM), Flash Memory (NOR, NAND), Flash Solution (OneNAND, SSD, Card), MCP SRAM (Low Power SRAM, High Speed SRAM), New Memory

Major Technology

- Hardware Design
  · DRAM (DDR / Mobile / Graphic), Flash memory (Nor / Nand), PRAM, Analog & Digital Circuit
  · Memory Card Controller: RTL Coding, Synthesis, Static Timing Analysis, AMBA-based bus protocol & ARM-based SOC chip design, DFT Implementation, SATA, SAS, PCIe, USB2.0 / 3.0, SD / MMC interface, ARM-based embedded SW development & HW validation, System Verilog Verification, FPGA Implementation & Verification, Signal Processing Algorithm Development for Memory & Storage System, Channel Codes (Error Detection / Correction Codes) Design & HW / FW IP Design

- Software Design

- Device Process
  · Oxidation, Photo Resist, Photolithography, Etch, Diffusion, Cleaning, Thin Film, Ion Implantation, CVD, Metallization, Device Isolation, Transistor, Capacitor, Dielectric, SiO2 / SiON Gate Dielectrics, High-K / Metal Gate, Device Analysis

- Manufacturing Technology
  · Yield Enhancement, Metrology (Pattern Process Inspection, Critical Dimension Measurement)

- Quality & Reliability Technology

- Engineering Statistics, Reliability Engineering (Component & System), Data Mining & Operations Research
Recruitment Fields of Samsung Electronics Device Solutions

**System LSI Business**

- **Business Field**:
  - SOC Solution (Mobile CPU, Multimedia SOC, Power management IC, Wireless connectivity, etc),
  - LSI Solution (Display Driver IC, CMOS Image Sensor, Smart Card, MCU)
  - ASIC / Foundry

- **Major Technology**
  - **Design**:
    - Digital design, Analog circuit design, Chip Implementation, RF, Image pixel design,
    - Multimedia IP design (Graphics, Audio, Video), Design verification, High speed I / F,
    - Wireless connectivity, Memory controller, Chip evaluation, Back-end design (Layout),
    - Algorithm (Security, Image processing, Storage) etc.
  - **Software**:
    - Embedded S / W (OS, Middle ware, Application), Firmware solution, S / W Engineering,
    - SQA, S / W Infra, Security, Solution Development
  - **Device / Process**:
    - Technology Development (28nm, 32nm, 45nm), Unit Process (Lithography, Etch, Diffusion, Thin Film, CMP, Cleaning, Ion Implantation, Metal), Process Architecture, Device / Process Integration, Optic, Optoelectronics, Transistor, Capacitor, Dielectric
  - **CAE**:
    - Device Modeling, Process Modeling, CAD, TCAD, Design for Manufacturing
  - **PE / Test**:
    - Pattern Inspection, Image Processing
  - **Yield Enhancement**:
    - Defect Reduction, Contamination Evaluation, Particle Detection, Chemical Analysis
  - **Manufacturing**:
    - Simulation, APC, MSPC / FDC, Logistics / Scheduling, MIS, SCM
  - **Strategic Marketing**:
    - Market Research/Analysis, Biz Development, Market Strategy, Product(line) MKT, Overseas Sales, Product Planning, Foundry MKT (Tech. MKT), Customer Engineering (Tier 1 Customer)
  - **Planning**:
    - Biz Strategy / Research, Contract/Law Case, M&A / Venture Investment

**LED Business**

- **Business Field**:
  - Light Emitting Diode (for General Lighting, Back Lighting and Automotive Lighting),
  - LED Light Engine (Ambient Light, Down Light)
  - LED Lamp (Bulb, MR, PAR, LED Tube)

- **Major Technology**
  - **LED Device/Next Generation LED**:
  - **LED Lighting Development**:
    - Indoor / Outdoor Lighting Design & Molding Design, LED Lighting Optics Design,
    - Lighting Quality Evaluation & Quality Control, LED Lighting Heat Sink Design, Heat Sink,
  - **Material Development**:
    - New Phosphor Synthesis & Evaluation for LED, Phosphor Coating for LED,
    - Analysis of Quenching Mechanism for Powder Phosphor
  - **Manufacturing Technology**:
    - MES Scheduler, FAB/PKG Process & Equipment Engineering,
    - CAE Analysis(Structure Analysis)
  - **Quality**:
    - Customer Satisfaction of Lighting Biz(Prefer experienced in the set-maker), LED Lighting Quality Planning & Quality Management for OEM/ODM, LED Module Reliability Analysis, Accelerated Life Test, Highly Accelerated Stress Test)
Business Field: Semiconductor Advanced Process and Device Technology

Major Technology
- Advanced Process Development
  - Photolithography (including EUV, e-beam, OPC / RET) Photo Resist, Oxidation, Cleaning & CMP, Diffusion, Thin Film, CVD, Ion Implantation, Metallization, Metrology & Inspection, etc.
  - OPC: Optical Proximity Correction (Comput. Litho)
- Module Development
  - Device Isolation, Transistor, Capacitor, Dielectric
  - High-K / Metal Gate, SiO2 / SiON Gate Dielectric / Low-K, Interconnect, etc.
- FEOL / BEOL Process Integration (DRAM / Flash / Logic, etc.)
- New Memory: PRAM, STT-MRAM, ReRAM, etc.
- TCAD / ECAD
  - Process & Device Modeling, Material Modeling
  - Circuit Compact / Reliability Modeling, Circuit Simulator Development
  - System-level Modeling / Simulation, Virtual platform, HW / SW Co-design
  - Simics, CoWare, SOC Designer user
  - Memory Controller, Memory Architecture, SSD research experience
- Advanced CMOS Image Sensor (CIS) Development
- Logic Design Infra Development
  - Process design kit development, Design rule generation, Test pattern generation, Layout assembling, Logic digital design, analogy design, circuit simulation.
- Package Development
  - Flip Chip/Wafer level PKG, Thining and PKG/Chip Warpage control, Vibration and Noise control
  - Polymer properties & failure Analysis and Development, Thermal and electrical engineering
- Material Development & Environment Contamination Control
  - Material(Wafer, PR, Gas, Chemical, Thin Film) Development
  - FAB Environment Contamination Monitoring & Control
  - Material & Environment Failure Analysis and Quality Guarantee
Recruitment Fields of Samsung Electronics Device Solutions

Test & Package Center

- **Business Field**: Device Packaging, Module/SSD, Signal Processing & Test

- **Major Technology**
  - **Package**
    - 3D Package, Flip Chip/Wafer Level Package (WLP/TSV etc.), Package Material (Film, PCB, Solder, etc.)
    - Particle/Contamination/Void Control, Package Reliability Analysis, Package Warpage Control
    - Thermal Distortion Control, Micro Solder Bump, Welding Reliability
    - Vision/Laser Application (Cutting, Marking, Inspection), Plasma Application
  - **Test Technology & Software**
    - Signal Processing & Test: High Speed Circuit Design, Power System
    - Test Software: Database Design/Optimization, Software Optimization, Embedded (Firmware) Programming, Job Scheduling Algorithm
  - **Equipment Development**
    - CAE Analysis: Structure, Dynamics, Thermal, Fluid Analysis/CFD
    - Control: Motion/Vibration Control, High Accuracy Control, Thermal Compensation Algorithm
    - Optics & Inspection: Precision Optical System Design, Image Processing Algorithm
      - 2D/3D Image based Measurement, X-ray Computed Tomography
    - Software: Embedded System Programming, Intelligent SW Architecture, Real-time OS Programming
    - Mold: Injection Mold Design, Molding Technology, Press Die Design/Mold Materials
  - **Quality & Reliability**
    - Data Analysis & Statistic Analysis, SPC (Statistical Process Control), Data Mining Application, FDC, APC, VMS Logic Development, Advanced Quality System Design, Design For Reliability, Measuring Sensor Development, Monitoring Method/Tool Development
  - **Automation**

Infra Technology Center

- **Business Field**: Manufacturing System, Facility Planning / Operating (Electric Power, Water, Gas, Chemical, Green Technology, Clean Room), system Technology (SCM, PLM, EES, MOS, YMS, MIS, MSS, MES, APC)

- **Major Technology**
  - **Materials**: Fab Material Development Technology (Material Design / Quality / Analysis and Optimization Technology / Optimization of Fabrication Process Application Material)
  - **Control of Environmental Contamination**: (Clean Room Pollution Control), Control of Contaminated Headwater originated from Fabrication Process (Productivity Enhancement of Mass Production Facility / Improvement of Fault, FOUM / EREM Pollution Control)
  - **S/W**: SE, SQA, Firmware
Manufacturing Technology Center

**Business Field**: Thin-Film Process, Inspection/Signal Process, Robot, Manufacturing Optimization S/W Technology

**Major Technology**
- **Device Packaging**: High rigidity/High-precision, High accuracy align algorithm, Thermal compensation algorithm, vibration control algorithm, Thin-wafer/die Handling Technology, Multi-chip stack mounting/bonding Technology
- **Diagnostic S/W**: Database Technology (DB design & optimization), Data Mining Algorithm, Optimization algorithm, Statistical Analysis, Information Visualization, Web Programming, Sensor Technology
- **Signal Processing & Test**: High-speed Circuit Design, ATE(Automatic Test Equipment) System Design, DFT(Design for Test)
- **Power System & Control**: Power Electronics, Electrification
- **Patterning**: Printable Electronics, Inkjet Printing, Nano Imprinting, Roll Printing
- **Precision Mechanism & Stage**: Precise Moving Element Design
- **Materials**: Inkjet material, Printing material
- **Optics**: Precision Optical System Simulation, Lens Design considering Assembling and Testing, Development of Assembling Process/Optical Testing Process
- **CAE Analysis**: MCAE (Structure/Dynamics/Thermal/Fluid Analysis/CFD),
- **Inspection**: Image Processing Algorithms, Optical Design for 2D/3D Image based Measurement, Electron Beam based Inspection & Metrology
- **Control & S/W**: Motion Control, Vibration Control, Sensor & Actuator Technology