

Job Opportunity

Research Domains		Research Areas
Device & System	① Processor Architecture HW	<ul style="list-style-type: none"> - Neural Processor HW · RTL,VHDL, Verilog HDL, Verilog-A, SOC · Processor, VLSI design for image and video processing · VLSI C-Modeling, Simulation, Compiler design - Mobile Processor HW design and implementation · Mobile or wearable platform, embedded system design · FPGA/ASIC/SOC, Low power high competency digital circuit design · HW design and verification - Analog to Digital signal processing · ADC/DAC signal conversion, PMIC (LDO, DC-DC conversion, etc.) design, · Analog front end (Amp, Filter, etc.) design, Mixed signal processing · MATLAB, Cadence, HDL, Verilog, CAD / board level system implementation
	② Computer Vision & Recognition	<ul style="list-style-type: none"> - Computer Vision, Augmented Reality · Computer graphics, photo-realistic rendering, 2D/3D Image processing · 3D Modeling , 3D Map Construction, Scene Understanding, Computational imaging · Pattern Recognition, Visual Tracking, Object Recognition, Detection, Emotion Recognition, Motion estimation, Classification and Clustering · De-noising, de-blurring, - Vehicle driving and control algorithm & system design · Sensor Fusion, Localization, SLAM · ADAS, Autonomous driving algorithm · Path Planning, Real-Time Embedded System Development
	③ Deep Learning & Information Theory	<ul style="list-style-type: none"> - Deep Learning, Artificial Intelligence, Statistical Machine Learning, Reinforcement Learning, Deep generative model · Bayesian, Variational, Monte Carlo, MCMC Interface/Deep neural network algorithm analysis (CNN, RNN) - Large-scale Mathematical Analysis and Algorithms - Speech Recognition and Machine Translation · Natural Language Understanding, Dialog Management, Question Answer, Language Modeling , Audio signal processing, Speech signal processing

Research Domains		Research Areas
Device & System	④ Meta- Photonics/ Photonic device	<ul style="list-style-type: none"> - Active metasurface theory, simulation & Experiment · Active metasurface design for phase modulation, optical device simulation <ul style="list-style-type: none"> SW (ex. FDTD, FEM, RCWA, TCAD, Sentaurus, etc.), optimization · Knowledge on elctro-optic materials (TCO, PCM, TMD, III-V etc.) · experience in optical design - Silicon photonics device design <ul style="list-style-type: none"> · Waveguide optics simulation, Optical device simulation/Evaluation, Diffractive optics - Experience in TOF Sensor optical system design, Laser optics, optical system <ul style="list-style-type: none"> design using laser diode, photo detector - Experience in metamaterials, plasmonics, photonic crystal, spectroscopic system, micro spectroscopic sytem, and nanophotonics
	⑤ Graphene Device	<ul style="list-style-type: none"> - Thin Film Deposition <ul style="list-style-type: none"> · ALD, Sputter, CVD · 2D growth experience including Graphene, TMD (ex MoS2), h-BN · Experience in epi-growth of III-V semiconductor compound (ex. GaN) - Organic synthesis <ul style="list-style-type: none"> · Total Synthesis capability · Experience in C-C bond formation reaction research · Experience in synthesis of Electronic/Medical materials, polymer, dendrimer · CNT, Graphene functionalization experience
	⑥ Radar Imaging SW, HW	<ul style="list-style-type: none"> - SAR base imaging <ul style="list-style-type: none"> · High resolution radar imaging · Imperfect SAR(Synthetic Aperture Radar) imaging improvement - Electro magnetics wave radiation <ul style="list-style-type: none"> · high frequency antenna & board line design (mmWave, 79GHz) · mmWave, MIMO antenna design & implementation · Antenna, RF, Digital chip module, board circuit design - Radar digital HW & RF System design <ul style="list-style-type: none"> · Radar, communication related FPGA/MCU design - Radar Signal processing <ul style="list-style-type: none"> · Fronted radar signal processing

Research Domains		Research Areas
Material	① Inorganic Materials	<ul style="list-style-type: none"> - Nano structured materials and applications <ul style="list-style-type: none"> · Quantum dot, Metal, inorganic nano structure synthesis/characterization and Device Fabrication - Development & fabrication of inorganic powder
	② Organic Materials	<ul style="list-style-type: none"> - Polymer chemistry and physics - Reaction kinetics, monomer design & synthesis - Organic emitting and charge transporting material design/synthesis
	③ Functional Polymer	<ul style="list-style-type: none"> - Organic Material synthesis - Polymeric Materials for optical applications - Polarization and retardation materials - Organic-Inorganic Hybrid, - Curing Chemistry
	④ Battery Materials	<ul style="list-style-type: none"> - Battery Cell/Pack <ul style="list-style-type: none"> · Li-ion Battery Materials · Organic materials design and synthesis (polymer and ionic liquid) · xEV Battery Pack Design, BMS HW Architecture & System SW
Platform Technology	① Computational Science	<ul style="list-style-type: none"> - Materials Design, Data Analysis and Optimization Using Machine Learning · New material design algorithm Development based Machine Learning · High Performance Computing Application <ul style="list-style-type: none"> → computational/data driven system research via algorithms, optimization, and related high performance computation method, SW parallel computing & Optimization · Platform contracture & development for Machine Learning
	② Analytical Science	<ul style="list-style-type: none"> - Time-resolved spectroscopy <ul style="list-style-type: none"> · Femtosecond laser spectroscopy including multidimensional/absorption/Raman/IR/PL · Optical Microscopy - Structural analysis using Electron Microscopy & Diffraction · Strong Background in Crystallography · Microstructural/compositional/chemical Analysis of Organic/Inorganic Materials & Devices