

Research Associate (Etch Process) Nanyang Technological University

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Posted Jul. 9, 2024, set to expire May 6, 2025

Job Title	Research Associate (Etch Process)
Department	Temasek Laboratories@NTU
Institution	Nanyang Technological University Singapore, , Singapore
Date Posted	Jul. 9, 2024
Application Deadline	Open until filled
Position Start Date	Available Immediately
Job Categories	Professional Staff
Academic Field(s)	Electrical and/or Electronics Engineering - Other
Job Website	https://ntu.wd3.myworkdayjobs.com/en-US/Careers/details/Research-Associate--Etch-Process-_R00017724

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Job Description

At Temasek Laboratories@NTU, our mission is to undertake cutting-edge research in defence science and technology, driving new solutions and advancements across various research areas, including Microsystems Technology, Hardware Assurance, Signal Processing, Advanced Materials, Advanced Laser Technology, and Emerging Technologies.

Microsystems Technology Development Centre (MTDC) at TL@NTU is having ISO certified III-V Wafer Fabrication Line up to 100-mm diameter wafers with strong industrial/academic experienced Technical Specialists/ Engineers/ Scientists. We are a fast-paced research facility that designs, develops, and

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manufactures integrated chips, i.e. heterogeneous system in package modules, for defence and commercial applications.

We are looking for a hands-on Etch process Research Associate who demonstrates a positive attitude, collaborates well in a team, and possesses strong technical abilities along with sound problem-solving skills.

Key Responsibilities:

- Develop and implement new dry (plasma)/wet etch processes (ICP-RIE, RIE, ashing, wet chemical etching/cleaning etc.) of thin films (e.g. GaAs, SiC, Si, GaN, AlN, SiN, SiO_x, SiON, TaN, Au, Ti, Ni, Pt and etc...) advanced opto-electronic devices.
- Develop and optimize etch parameters to achieve desired etch profiles, precise etch rates and uniformity, ensuring compatibility with specific application requirements and project objectives.
- Identify and troubleshoot process issues, implementing innovative solutions to enhance yield, performance, and reliability.
- Utilize a range of characterization techniques, including optical microscopy, FE-SEM, EDX, AFM, ellipsometry, reflectometry, and profilometry.
- Engage external service provider to do analytical characterizations (e.g. FIB, TEM, SIMS and etc...)
- Analyze experimental data and provide insights to our collaborators and team members.
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Maintain detailed documentation of processes, experimental setups, and results for future reference and knowledge transfer.

- Oversee the operation of laboratory equipment and ensure proper functioning. Work with the equipment vendor to conduct routine maintenance, troubleshooting, and calibration of equipment to minimize downtime.
- Work with the University's procurement team to source and acquire necessary equipment. Evaluate and select vendors, ensuring equipment aligns with research requirements and budget constraints.
- Adhere to laboratory safety protocols and ensure compliance with University and regulatory standards.
- Collaborate with interdisciplinary teams, including collaborators, researchers, scientists, and faculties.
- Communicate effectively with team members, providing updates on project progress, challenges, and solutions.

Job Requirements:

- Diploma in Engineering (e.g. Microelectronics, Electrical & Electronics Engineering, Material Engineering) with 8 years of relevant hands-on experience or Bachelor's degree in engineering (e.g. Microelectronics, Electrical & Electronics Engineering, Material Engineering) with 5 years of relevant hands-on experience or Master's degree in engineering (e.g. Microelectronics, Electrical & Electronics Engineering, Material Engineering) with 3 years of relevant hands-on experience.
- Hands-on experience in a semiconductor fabrication/cleanroom environment, with a primary

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emphasis on dry etch processes for materials such as Si, SiO_x, SiN, Metals, GaN, GaAs, and SiC.

- Experience in wet bench processes, particularly wet etching/cleaning, solvent stripping, and lift-off techniques, is necessary.
- Familiarity with metrology tools including optical microscopes, SEM, EDX, AFM, ellipsometry, reflectometry, and profilometry is essential.
- Advanced knowledge and practical application of Statistical Process Control (SPC) and Design of Experiments (DOE).
- Proficiency in data analysis tools such as JMP for in-depth analysis and interpretation.
- Basic understanding of III-V compound semiconductor and/or silicon CMOS devices is required.
- Strong communication skills, with the ability to convey complex technical concepts clearly and concisely.
- Commitment to maintaining high standards of safety, quality, and professionalism in all aspects of work.

We regret to inform that only shortlisted candidates will be notified.

Contact Information

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Contact

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