Company Profile:

Established in 1987 and headquartered in Hsinchu Science Park, Taiwan, TSMC pioneered the pure-play foundry business model by focusing solely on manufacturing customers' products. By choosing not to design, manufacture or market any semiconductor products under its own name, the Company ensures that it never competes directly with its customers. Today, TSMC is the world's largest semiconductor foundry, manufacturing 10,761 different products using 272 distinct technologies for 499 different customers in 2019.

With a large and diverse global customer base, TSMC manufactured semiconductors cover a wide range of applications in the computer, communications, consumer, industrial and standard segments and are used in a variety of end markets including mobile devices, high performance computing, automotive electronics and the Internet of Things (IoT). Strong diversification helps to smooth fluctuations in demand, which, in turn, helps the Company maintain higher levels of capacity utilization and profitability.

Annual capacity of the manufacturing facilities managed by TSMC and its subsidiaries exceeded 12 million 12-inch equivalent wafers in 2019. These facilities include three 12-inch wafer GIGAFAB® fabs, four 8-inch wafer fabs, and one 6-inch wafer fab – all in Taiwan – as well as one 12-inch wafer fab at a wholly owned subsidiary, TSMC Nanjing Company Limited, and two 8-inch wafer fabs at wholly owned subsidiaries, WaferTech in the United States and TSMC China Company Limited.

TSMC provides customer service, account management and engineering services through offices in North America, Europe, Japan, China, and South Korea. At the end of 2019, the Company and its subsidiaries employed more than 51,000 people.

The Company is listed on the Taiwan Stock Exchange (TWSE) under ticker number 2330, and its American Depositary Shares (ADSs) are traded on the New York Stock Exchange (NYSE) under the symbol TSM.

1. TSMC official corporate clip
   https://youtu.be/_mY-BVBNm-8
2. 2020 TSMC Technology Symposium Recap Video
   https://youtu.be/_8_qNvRLWQc
3. Why TSMC matters to the world (from RD perspective)
   https://youtu.be/4qlXnpisMV4
4. TSMC’s Manufacturing Excellence & Who we are looking for (from Manufacturing perspective)
   https://youtu.be/VCwPWK728BM
5. TSMC Company Introduction (with slides and English narratives)
   https://youtu.be/B8ajcq8BzVs

At TSMC, We Develop the Technologies that Shape the Future and Change the World!

Technology is our cornerstone, and Innovation is our passion. At TSMC, we bring together the most creative minds in science and technology to provide the most advanced semiconductor foundry services in the world. Our services help drive innovation in fields that revolutionize our world and daily lives including high performance computing, mobile, automotive electronics, and the Internet of Things.

If you want to challenge yourself and unleash innovation with brilliant colleagues located around the world, come join us!
2021 TSMC DNA Internship:

Job responsibilities:
We provide an opportunity for students to experience the world's leading high-tech environment working with world-class experts. Intern shall be able to learn from fellow employees while expanding leadership experiences through exciting projects. Our Internship program will be project-based. You would be working with TSMC in
1. Engineering Fields:
2. Non-Engineering Fields:
   Human Resources, Finance, Legal, Corporate Planning, Material Management & Risk Management.

Job’s requirement
Students pursuing MST/PhD degrees will be considered as higher priority.
Application deadline: 2020/12/15 (Selection on a rolling basis up till April 2021)
Reminder:
1. Be sure to fill out biographical information, including education background and professional keyword precisely
2. Autobiography and Keyword field has word maximized limit:1000 words and minimized limit:300 words

Internship Period:
Typically from 2021/7/1 to 2021/8/31, but it is flexible if needed. (Based on different educational semester)

Apply here:
https://tsmc.taleo.net/careersection/tsmc_exti/jobdetail.ftl?job=200000B6&lang=en
2021 Jobs at TSMC:

R&D Engineer

The Role
We are looking for creative and highly motivated R&D engineers with the potential to innovate on research for next generation semiconductor device technologies.

Successful candidates will work with various teams throughout TSMC as well as different global customers who are technology leaders in their industries. Candidates must own strong communication skills and work well in teams. They should possess strong technical problem-solving and analytical skills. Hands-on participation and a strong sense of ownership is highly required in these job positions. Moreover, candidates will have the opportunity to significantly impact the expansion of TSMC's business and growth as future technical leaders of the global semiconductor technology research community.

Job Description
You can see the main responsibilities for each position below:

R&D Device/Integration Engineer
1. Work on advanced FEOL/MOL new knobs and integration development for leading edge technology.
2. Design innovative structures and process flow to enhance device stress for performance and stress metrology development.
3. Work with various teams (Module, Lithography, Device, Platform, TCAD) to identify critical paths and evaluate/develop new processes for leading-edge technology.
4. Carry out logic and SRAM cell layout/density/pattern evaluation for leading edge technology.
5. Develop new transistor/device/emerging memory characterization methodologies, testing procedures and analysis pipelines.

R&D Advanced Module Engineer (Etch/CMP/Epi/Metal/Dielectric/Litho/Diffusion/Metrology)
1. Work on advanced module process development and baseline sustaining for leading-edge technology (N3 and beyond).
2. Collaborate with Integration/Device/Fab to deliver module processes for new technology nodes.
3. Execute process stability/manufacturing improvement for yield and reliability qualification.
4. Perform process/tool transfers to volume manufacturing.

APR/ Physical Design Engineer
1. Execute physical implementation of advanced chip technology.
2. Develop and innovate design methodologies for advanced technology challenges.
3. Be responsible for 16/10/7/5nm chip implementation for internal or customer projects, and for EDA tool enablement and customer support.
Process Design Kits (PDK) Engineer
1. Deliver innovative solutions for MtM HV/BCD/SOI/specialty process nodes.
2. Be responsible for MtM specialty techfile development, QC, and corresponding EDA tool certifications.
3. Inject innovative ideas into MtM specialty techfile generation or QC flow to further reduce development cycle time and improve quality.
4. Work closely with process, design/device, modeling and layout engineers to deliver the highest quality PDKs.
5. Co-work with TSMC internal (RD/Model/.etc), external customers and 3rd party EDA partners.

Standard Cell Design Engineer
1. Be responsible for advanced node standard cell circuit design.
2. Analyze circuit robustness and perform circuit optimization.
3. Develop subthreshold voltage circuit design for IoT applications.
4. Work on pathfinding and innovation of circuit designs for leading-edge tech nodes.

R&D 3DIC Packaging Engineer
1. Develop SoC/ASIC & package architecture design for high performance computing with High-bandwidth Memory (Server, Networking, AI, AR…etc) applications.
2. Execute SI/PI/RF/EMI validation for system requirements on eye diagram, jitter, latency, IR drop, cross-talk, and SSN specs, from chips to PCBs.
3. Develop system integration designs and requirements based on SiP, PoP, PiP, Chip stacking, and other 3DIC technologies.
4. Work with marketing/technology teams on technology competitive analysis and develop package technology road maps for future product requirements.

Qualifications
1. A minimum of a M.S. degree in Electrical Engineering, Material Science, Chemical Engineering, Chemistry, Physics, Computer Science or a related Engineering discipline. A Ph.D. degree is preferred.
2. Strong sense of ownership, ability to effectively deal with ambiguity and conduct independent research is required.
3. Technical problem-solving and analytical skills, based upon fundamental, rather than empirical models, is required.
4. Good teamwork and interpersonal skills, able to work on cross-functional and geographically dispersed teams with diverse backgrounds.
5. Excellent English and Mandarin written and spoken communication skills is required.

Process Integration Engineer
The Role
Are you passionate about developing the most advanced and diverse products with customers from end to end?
Train in Taiwan for 18 months then go back to Phoenix, Arizona to ramp up and open our newest US facility.

TSMC is looking for a Process Integration Engineer (PIE) for an impactful role focusing on helping customers achieve a successful full lifecycle on their products, including New Product Introduction (NPI), device performance, yield, and reliability, using our most advanced technology. You can pursue your passion in semiconductors/engineering by using state-of-the-art, agile and intelligent operating systems to drive manufacturing excellence. You can help identify integrated process solutions to resolve issues or specific request from our customers, and work closely with other innovators in device, product engineering, lithography, etch, and thin films process teams to identify an integrated process solution to resolve issues or specific request from our customers.

**Job Description**

Your main responsibilities will include, but are not limited to:

1) New product qualification and technology transfers from a mother fab.
2) Big data analysis to identify process design weaknesses and/or manufacturing tool issues.
3) Designing, executing and analyzing experiments to improve yield and performance for each specific product.
4) Collaborating with the engineering teams to maintain process stability and provide technical solutions to customers.
5) Scheduled night shifts and weekend on-call rotations in a 24/7 high-volume manufacturing environment.

**Qualifications**

1) A minimum of a B.S. degree in Electrical Engineering, Material Science or Physics. A PhD and Master degree is preferred.
2) Good communication and interpersonal skills.
3) Able to work on cross-functional and geographically dispersed teams with diverse backgrounds.
4) A team player that can multitask and thrive in a very dynamic and fast-paced environment.
**Module Process Engineer**

**The Role**

Are you passionate about leading-edge process development/enhancement that empowers customer to unleash their creativity?

Train in Taiwan for 18 months then go back to Phoenix, Arizona to ramp up and open our newest US facility.

TSMC is looking for a Module Process Engineer (PE) focused on delivering a robust and efficient semiconductor manufacturing process with data driven analytics and systematic problem-solving skills. You can pursue your passion in semiconductors/engineering by using state-of-the-art, agile and intelligent operating systems to drive manufacturing excellence. You will work closely with other innovators in device, integration, defect reduction, lithography, etch and thin films teams to drive leading-edge integrated module development, control and improvements to resolve issues or specific request from our customers.

**Job Description**

Your main responsibilities will include, but are not limited to:

1) Designing and executing experiments, interpreting and extracting insightful results from complex data sets to optimize the manufacturing process and achieve precision control at atomic levels.
2) Applying statistics process control methods to establish and sustain a robust manufacturing process.
3) Installing, qualifying and sustaining manufacturing equipment to expand capacity with punctuation and quality.
4) Collaborating effectively with equipment and material suppliers and partners to identify technology gaps and deficiencies; devise, evaluate and qualify mitigation and continuous improvement solutions.
5) Scheduled night shifts and weekend on-call rotations in a 24/7 high-volume manufacturing environment.

**Required Qualifications**

1) A minimum of a B.S. Degree in an engineering and scientific field such as Physics, Material Science, Chemical Engineering, Electric Engineering, Chemistry, Nuclear Engineering, or Mechanical Engineering.
2) Good communication and interpersonal skills that enable you to work on cross-functional and geographically dispersed teams.
3) Able to adapt priorities and responsibilities to support business needs.
4) A team player that can multitask and thrive in a very dynamic and fast-paced environment.
Module Equipment Engineer

The Role

Are you passionate about identifying potential hardware capability enhancement for manufacturing breakthrough?

TSMC is looking for a Module Equipment Engineer (EE) to optimize advanced hardware configurations. You can pursue your passion in semiconductors engineering by using state-of-the-art, agile and intelligent operating systems to improve tool performance and availability while meeting uptime and cycle time requirements. You will work closely with process owners to develop, prioritize, and manage projects to resolve issues or specific requests from our customers. In addition, you will manage vendor relationships and be responsible for responsible for module liaison with facilities, vendor, and manufacturing shift personnel.

Job Description

Your main responsibilities will include, but are not limited to:

1) Handling Diffusion, Thin Film, Lithography or Etching equipment in cleanroom environment.
2) Install/Qualify new tool sets according to planned schedule to add capacity in a timely manner
3) Applying your experience and systematic approach to solve critical equipment issues.
4) Improving tool uptime availability and utilization efficiency.
5) Identifying and pursuing potential opportunities for hardware capability enhancement.
6) Driving defect reduction.
7) Leveraging internal and external resources to drive aggressive continuous improvement projects

Required Qualifications

1) A minimum of a BS degree in Electronics, Electrical Engineering, Mechanical, Material Science, Chemical Engineering and Automation Engineering related fields.
2) No prior experience required, though previous experience in equipment maintenance or improvement is a plus.
3) Good problem-solving and communication skills as well as a willingness to learn.
4) The ability to troubleshoot complex problems and strong ownership in providing root-cause fixes
5) A team player who can multitask and thrive in a very dynamic and fast-paced environment.
6) Able to lift weight consistent with applicable regulations and/or safety guidelines, including NIOSH Lifting Recommendations.
7) Able to work in a cleanroom environment, gowning up in coveralls, hoods, boots, safety glasses and gloves. Spend significant amount of time on the factory floor working on the tools.

Preferred Qualifications

1) Basic mechanical-related knowledge and knowledge of semiconductor processes are a plus.
2) Previous experience in equipment maintenance or improvement is a plus.

Yield Enhancement Engineer
The Role
Are you passionate about delivering the most competitive and successful leading-edge process technology that empowers customer to unleash their creativity?

Train in Taiwan for 18 months then go back to Phoenix, Arizona to ramp up and open our newest US facility.

TSMC is looking for a Yield Enhancement Engineer focusing on driving continuous defect reduction and yield improvement program using our most advanced technology. You can pursue your passion in data driven analytics and systematic problem solving skills by using state-of-the-art, agile and intelligent operating systems to drive manufacturing excellence. You can work closely with other innovators in integration, device, lithography, etch, and thin films process teams to deliver a leading-edge integrated process development to resolve issues or specific request from our customers.

Job Description

Your main responsibilities will include, but are not limited to:

1) Identifying potential yield-limiting defect sources; defining an aggressive defect reduction roadmap for the program and related modules; owning the results.

2) Using statistical process control principles to sustain production line health and prevent defect induced excursion events; working with module engineers to identify and eliminate process and station defect source; designing and executing experiments; interpreting and extracting insightful results from complex data sets to implement solutions in a timely manner.

3) Installing, qualifying and sustaining inline inspection and reviewing equipment to expand capability for inline defect detection.

4) Collaborating effectively with integration and process organization partners to identify technology gaps and deficiencies, evaluate and qualify mitigation and continuous improvement solutions.

Required Qualifications

1) A minimum of a B.S. degree in Electrical Engineering, Material Science or Physics. A PhD and Master degree is preferred.

2) Good communication and interpersonal skills.

3) Able to work on cross-functional and geographically dispersed teams with diverse backgrounds.

4) Must take ownership for solving issues and ensures escalations take place.

5) A team player that can multitask and thrive in a very dynamic and fast-paced environment.

Apply here: https://tsmc.taleo.net/careersection/tsmc_exti/moresearch.ftl?lang=en