



**Department of Natural Sciences and Sustainable Development
Ministry of Science and Technology**

中華民國台北市和平東路二段 106 號 20 樓
RM 2009, 20th Fl., 106 Hopping E. Road Section 2 Taipei, Taiwan 10636 R.O.C.
Tel: +886-2-2737-7518 / Fax: +886-2-2737-7675

TSMC Junior Fellow Program

Program

Supported by TSMC, the MOST offers several postdoc positions for a 2-year term **2020/10-2022/09** to highly motivated, well-qualified and dynamic young scientists who wish to have a chance to define and lead the growth of new research areas on next generation semiconductor science & technology. Performing research as a key intellectual contributor in a high-standard university research team of Taiwan heavily engaged in the stimulating TSMC projects shall enhance her/his scientific career.

TSMC Junior Fellows are appointed to a 2-year term and are awarded

- Up to **USD 60,000 salary per year** per person depending on qualifications.
- **USD 10,000 as expense** for the research project.
- The title of “TSMC Junior Fellow” for 2020/10-2022/09.

Eligibility and Requirements

- Applicants should be with Doctorate in science or engineering discipline, strong track record of publication and good oral and written communication skills.
- Applicants shall perform research in the areas of TSMC’s interests under the university professors in Taiwan.
- Applicants are encouraged to contact University professors working in the areas of interests and anticipated to get the agreement to work under the hosting professor, subject to successful application. **Note: the research contract will be signed between TSMC and the hosting Professor and University, according to the existing TSMC Joint-development projects.**
- Area of TSMC’s interests:
 - ✧ **Growth of high mobility 2D semiconductors, and precise control of defect/surface/electronic structures for high-performance computation or high-density memory device applications.**



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- ✧ New physics or properties based on 2D materials, including 2D proximity effect, ferroelectricity, topological property, spin transport or magnetic property for exploratory logic/memory applications.
- ✧ Research on growth, characterizations, devices and physics on multiferroics and/or complex oxides for next-generation multifunctional electronics devices.
- ✧ Simulations to understand the fundamental and address the issues mentioned above.
- ✧ Research on selector materials and devices, including new material exploration, selector device physics, and device/circuit level simulation.
- ✧ Research on thermal management in 3D ICs, including device/chip level thermal simulation and optimization, thermal materials process and characterization.
- ✧ Research on material, thin-film engineering, device physics, metrology, device characterization, circuit/ memory array design for high-density memory, such as ReRAM, PCRAM, FeRAM, and MRAM etc.
- ✧ Circuits designs with focus on design technology co-optimization (DTCO) for memory technology and AI computing or AIoT (AI + IoT) applications.

Selection Criteria

Applications will be reviewed by the TSMC Junior Fellow review committee and evaluated on the following criteria:

- The intellectual significance and quality of the proposed research projects.
- The research track record of the applicants and the hosting professor.



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Application Materials

Each completed application should be submitted to MOST directly **by the hosting Professor** and must include:

A single PDF file submission to the E-mails: tykuo@most.gov.tw and which includes

- CV and publication list of the TSMC Junior Fellow applicant.
- Three letters of support for the TSMC Junior Fellow applicant.
- CV and publication list of the hosting professor.
- A research proposal with an elaboration on expected scientific contributions.

Deadline

The proposal should be **submitted before 12:00pm 12-August (Wed), 2020.**

Notification

All applications will be acknowledged by email. Applicants will be notified of as soon as the review committee reaches a decision.