



# 2022 IEEE SILICON NANOELECTRONICS WORKSHOP

June 11-12, 2022 Hilton Hawaiian Village, Honolulu, HI USA

website: [snw2022.conf.nycu.edu.tw](https://snw2022.conf.nycu.edu.tw)

**First CALL FOR PAPERS**

**Abstract Submission Due: April 16, 2022**

## General Information

The 2022 Silicon Nanoelectronics Workshop is a satellite workshop of the 2022 VLSI Symposium on VLSI Technology and Circuits, sponsored by the IEEE Electron Devices Society. It will be held on June 11-12, 2022 at the Hilton Hawaiian Village in Honolulu, Hawaii USA. This will be the 28th workshop in the annual series. Original papers on nanometer-scale devices and technologies that utilize silicon or which are based on novel materials on silicon substrates are welcome. **NOTE:** Depending on travel restrictions and budget, the event will be in **hybrid** or **virtual** format.

## Scope

- Nanometer-scale transistors, including those employing non-classical structures, novel channel and source/drain materials, or non-thermal injection mechanism
- Junction and insulator materials and process technology for nanoelectronic devices
- Techniques for fabrication of nanostructures, including nanometer scale patterning
- Physics of nanoelectronic devices, e.g., quantum effects, non-equilibrium transport
- Modeling and simulation of nanoelectronic devices, e.g. including atomistic effects
- Nanoscale surface, interface, and heterojunction effects in devices
- Device scaling issues including doping fluctuations and atomic granularity
- Circuit design issues and novel circuit architectures
- Optoelectronics using silicon nanostructures
- Techniques targeting zero power electronics (self-supplying), including wireless sensors, energy harvesting, steep slope devices, ultra-low power design and devices
- Devices for 3D and heterogeneous integration on Silicon, including Graphene, III-V devices, CNT, spin-based devices, MEMS and NEMS, etc.
- Novel transistors based on two dimensional materials, e.g., MoS<sub>2</sub>, WS<sub>2</sub>, etc.
- Novel non-volatile memories, e.g., MRAM, RRAM, PCM, FeRAM etc.
- Neuromorphic devices and architectures for AI
- Integrated energy harvesting and energy storage based on new material and structures
- Reliability and Characterization of nanoelectronic devices
- Environmental devices which contribute to low-carbon society (wireless sensors, energy harvesters, steep slope devices, etc.)
- Power devices (SiC, GaN etc.)
- Silicon and Non-silicon quantum devices and low temperature electronics

## Plenary Keynote/Invited Speakers

TBD

## Submission of Abstracts

Prospective authors are requested to submit an abstract in PDF format, consisting of 1 page of text and 1 page of figures. It must include the paper title, the authors' names and affiliation(s), and the full contact information (mailing address, phone numbers, e-mail address) for the corresponding author. Instructions for submission can be found at (<https://snw2022.conf.nycu.edu.tw/author/>). Accepted abstracts will be reproduced in the proceedings exactly as received. The deadline for receipt of abstracts is 5PM (Pacific Time) **April 16, 2022**. Authors will be notified before May 15, 2022.

## Further Information

Registration forms and hotel reservation forms will be provided on the web site. Some of the accepted papers will be presented in Poster Sessions. Authors are encouraged to submit full-length papers to the *IEEE Transactions on Nanotechnology*, *IEEE Journal of EDS*, or the *IEEE Transactions on Electron Devices*.

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