

12-13 September 2022
• Virtual Meeting •



International
Nanodevices
& Computing
Conference



DAY 1 - IRDS

The IRDS™ topics are a forecast of technology and systems characteristics, needed technologies, and capabilities of the microelectronics and systems industries. The intent is to focus on academic, manufacturing, supply, and research coordination regarding the development of microelectronic devices and systems. [Visit us for more information about the IRDS and its roadmaps.](#)

DAY 2 - INC

The annual IEEE International Nanodevices and Computing (INC) conference covers the continuously evolving technology ecosystem based on nanotechnology, nanodevices and computing, supporting the global information technologies infrastructure. The INC conference includes predictions on devices for computing and communications, computer architecture, and applications.

REGISTRATION

[Online Link*](#) ←

You can register for both days or a single day.

	Single Day	Both Days
IEEE Member	\$25.00	\$40.00
IEEE Life Member	\$10.00	\$20.00
Non-Member	\$49.00	\$80.00
IEEE Student Member	\$15.00	\$20.00
Student Non-Member	\$20.00	\$30.00

Email irds_info@ieee.org if you need any registration assistance.



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Day 1 IRDS Readouts

Day 2 INC Nanodevices

SEPTEMBER 12 • DAY 1 • IRDS 2022 Roadmap Summaries		
US Eastern	Topics	Speaker
SESSION 1 Greetings and Overview		
11:00 AM	Regional Opening Greetings	Francis Balestra, Tom Conte, Yoshihiro Hayashi
11:10 AM	IRDS Introduction	Paolo Gargini
SESSION 2 Systems and Device Drivers		
11:30 AM	Application Benchmarking	Tom Conte
11:50 AM	Systems and Architectures	Kirk Bresniker
12:10 PM	More Moore	Mustafa Badaroglu
12:40 PM	Q&A	
SESSION 3 Future Devices		
12:50 PM	Autonomous Machine Computing	Shaoshan Liu
1:00 PM	Mass Data Storage and NVM	Thomas Coughlin
1:10 PM	Beyond CMOS and Emerging Materials Integration (EMI)	An Chen
1:30 PM	Cryogenic Electronics & Quantum Information Processing	Scott Holmes
1:50 PM	Q&A	
2:00 PM	Break	
SESSION 4 Heterogeneous Integration		
2:15 PM	Outside System Connectivity	Michael Garner
2:35 PM	More than Moore	Benjamin Iñiguez
2:55 PM	Packaging Integration	Dev Gupta
3:15 PM	Q&A	
SESSION 5 Manufacturing Pillars		
3:25 PM	Factory Integration	Supika Mashiro
3:45 PM	Lithography	Mark Neisser
4:05 PM	Yield	Dan Wilcox
4:25 PM	Metrology	Ben Bunday
4:45 PM	ESH/S	Leo Kenny
5:00 PM	Q&A	
5:10 PM	Next Steps and Closing Remarks	Paolo Gargini
5:25 PM	Adjourn	

SEPTEMBER 13 • DAY 2 • Nanodevices & Computing Conference		
US Eastern	Topic	Speaker/Affiliation
SESSION 1		
11:00 AM	Regional Greetings	Tom Conte, ICRC Francis Balestra, SiNANO Yoshihiro Hayashi, IRDS/SDRJ/Keio Univ.
11:15 AM	Overview	Paolo Gargini, IEEE-IRDS
11:45 AM	Keynote	Mark Rosker, Director of DARPA MTO (Microelectronic Organization)
12:30 PM	Discussion and Questions	
SESSION 2 SiNANO		
12:45 PM	"2D materials for Beyond CMOS from a (not exclusively) simulation viewpoint"	Alessandro Cresti, IMEP-LAHC
1:05 PM	"Spintronics in 2D materials and prospects for Non-Volatile Memories"	Juan Sierra, ICN2
1:25 PM	"Silicon-Based Nanopore Biosensors: From Novel Fabrication to Deep Learning"	Shili Zhang, Uppsala University
1:45 PM	Session Q&A	Live Audience and Chatted Questions
1:55 PM	Break	Break
SESSION 3 U.S.A.		
2:40 PM	"Ultra-low EOT Negative Capacitance Gate Oxide"	Sayef Salahuddin, TSMC Distinguished Professor, Electrical Engineering and Computer Sciences, UC Berkeley
3:00 PM	"Thin Film Transistors and Quantum Tunneling"	Paul Berger, Prof. Paul R. Berger, Ph.D., Professor, Electrical and Computer Engineering
3:25 PM	"Advances in III-V Transistors for mm-Wave Wireless Communications"	Patrick Fay, Professor, Department of Electrical Engineering, University of Notre Dame
3:45 PM	Session Q&A	Live Audience and Chatted Questions
3:55 PM	Break	Break
SESSION 4 SDRJ		
4:15 PM	"Toward Next-Generation Supercomputer Systems: Japanese HPC Community Perspectives"	Masaaki Kondo, Keio University/RIKEN
4:35 PM	"Nanophononic Si thermoelectric devices with phonon engineering"	Masahiro Nomura, University of Tokyo
4:55 PM	"Technology Progress toward On-Silicon Photonic Integrated Circuits"	Nobuhiko Nishiyama, Tokyo Institute of Technology
5:15 PM	Session Q&A	Live Audience and Chatted Questions
5:25 PM	Closing Remarks	TBA
5:45 PM	Adjourn	