



Photo Courtesy of San Diego Convention Center.

The 2023 IEEE Radio Frequency Integrated Circuits Symposium (RFIC 2023) will be held in San Diego, CA, from June 11-13, 2023.

## Plenary Speakers



### The Roaring 20s: A Renaissance for the Semiconductor Industry?

**Dr. Todd Younkin**, President and CEO of the Semiconductor Research Corporation (SRC). Dr. Younkin leads a global research agenda of about \$90M annually, supported by ~3k academic and industrial researchers, 27 international companies, and 3 U.S. government agencies (DARPA, NSF, and NIST). Dr. Younkin will share his vision for the future of global semiconductor technologies and design, especially those that will enable future RFIC breakthroughs. Dr. Younkin will discuss the status of government investments and opportunities arising from the CHIPS and SCIENCE ACT of 2022, Korea's K-Belt strategy, Europe's CHIPS ACT, and more.



### Future System-on-Chip for Full Spectrum Utilization from RF to Optics

**Prof. Mau-Chung Frank Chang**, the Wintek Chair in Electrical Engineering and Distinguished Professor of University of California, Los Angeles (UCLA) and the former President of the National Yang Ming Chiao Tung University (NYCU), Hsinchu, Taiwan. Prof. Chang will deliver his exciting vision on "*Future System-on-Chip for Full Spectrum Utilization from RF to Optics*". As the RFIC industry is investigating and moving into and beyond the Terahertz (THz) sensing/communication era, he will highlight the multi-facet challenges and opportunities for system and technology revolutions, including the "*Best Junction for the Function*" device technology breakthroughs that may enable the full spectrum utilization from RF to optics on a single chip.

### RFIC Reception and Symposium Showcase:

Immediately after the plenary session, the RFIC Reception and Symposium Showcase will follow, with highlights from our industry showcase and student paper finalists in an engaging social and technical evening event supported by the RFIC Symposium 2023 corporate sponsors. The showcase will provide authors the opportunity to demo their work in a lab-like environment for more close-up discussion and interaction. *You will not want to miss the 2023 RFIC reception!*

### Technical Lecture

RFIC'23 will feature a rich educational program on Sunday, June 11, 2023, with 11 RFIC focused workshops and one Technical Lecture. An excellent 80 min Technical Lecture will be delivered by world-renowned educator and author **Prof. Behzad Razavi** of UCLA, on **"Modern Radio Architectures – From WiFi to 5G and Beyond"**. This lecture covers both RFIC and radio system design aspects, and should be instructive and beneficial for students, newcomers and senior practicing circuit designers.

### Workshops

RFIC workshops cover a wide range of topics:

- Millimeter Wave:
  - Millimeter-Wave and subTHz PA Design for Next-Gen Applications
  - Millimeter-Wave Integrated Radars: Opportunities and Challenges
  - 6G Circuits Targeting Ultra-high Data Rates
- Advanced High-Speed Circuits and Systems:
  - Integration of 6G Systems from Baseband to Antenna for 6G Phased-Arrays
  - To 100 Gb-s and Beyond: High-data-rate Interconnect Technologies
  - Circuit Design for Wireline-Optical and Wireless Transceivers: Commonalities & Differences
- Low Power ICs:
  - FD-SOI CMOS Energy Efficient 5G and IoT Design Techniques and Related Technology
  - Recent Advancements in Ultra-low Power Wireless Communication Technology
- Tutorial Style:
  - Fundamentals of RF Power Amplifiers
  - Enabling Quantum Computing: A Survey of Readout Technologies
  - EM-circuit Co-design of Passive-active Circuits at mm-Wave Frequency

### Panels

Monday's lunchtime panel, titled "How soon will we become cyborgs?" will be dedicated to the debate on the expected impact of the increased use of various technologies, such as augmented reality and smart hearing aids, on our everyday lives. Tuesday's lunchtime panel, organized jointly with IMS, will discuss the topic of *"AI/ML based wireless system design and operation - hope or hype?"* This topic is interesting and controversial as the use of ML/AI, has already been demonstrated in a wide range of applications, including even music composition and artistic design. This lunchtime panel, with both industry and academia experts, will explore how we may harness AI in wireless system design and operation, and will attempt to distinguish hope from hype.

### For RFIC Students Industry *Chip Chat*



### "3 things to know to start your RFIC design career with a bang"

*Come and join the RFIC'23 special event customized by and for students and the RF industry!*

A Chip-Chat and reception, where future leaders meet prominent industry professionals to confess their secrets about their first years in their career. Bring your questions for an open discussion about the metamorphosis from student to professional RFIC designer, negotiate your salary and how to manage your talent to impact lives and more especially yours. Not enough time to extract all the secrets? Everyone is invited to continue *chip chatting* at the RFIC nacho station.

### Other Student Events & Opportunities

RFIC'23 and the Microwave Week have many educational and professional development opportunities for students.

\* Student paper contest: Top student papers will be featured at our Sunday's *Symposium Showcase*, providing an additional exposure

\* As part of IMS, students can participate in design competitions and an RF Bootcamp.

\* MTT-S offers a Ph.D. Student Sponsorship Initiative for new students to be engaged with Microwave Week, providing learning, networking, and volunteer experiences along with complimentary registration and accommodations to qualified and selected students.