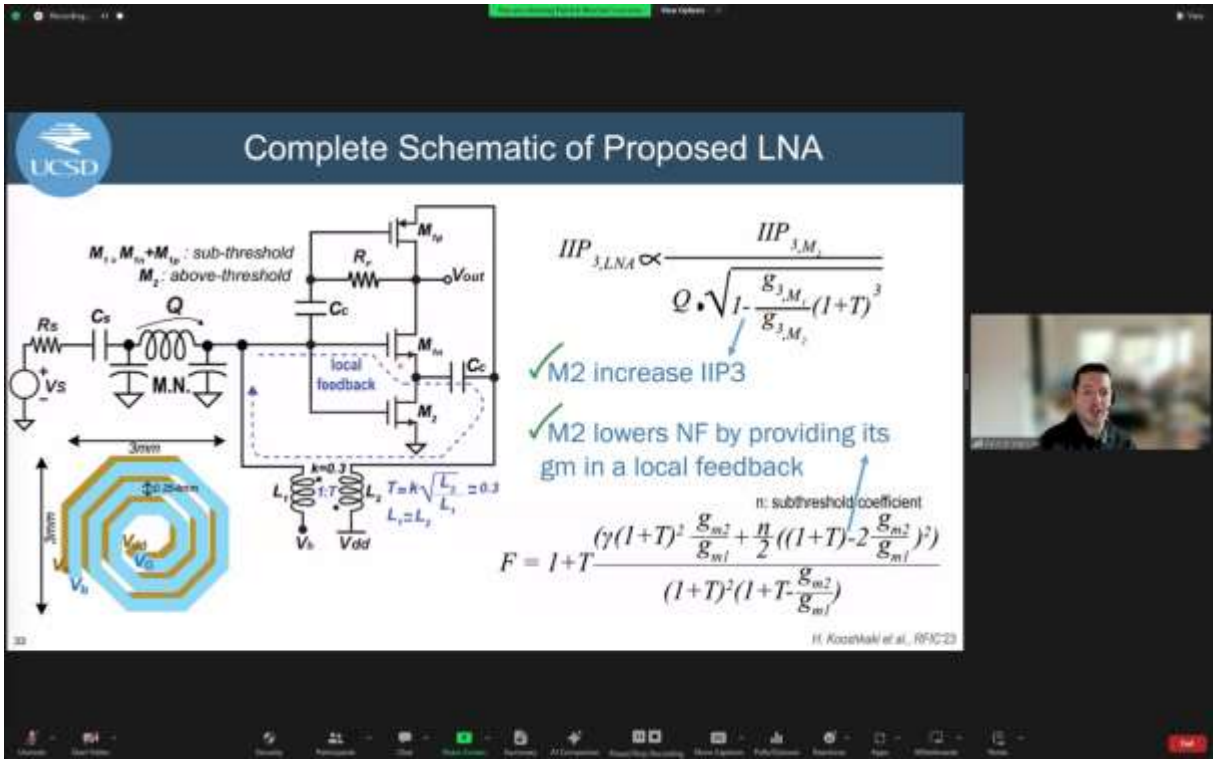
Nano-Watt Analog Design Course Enabling Connected World

The ***"Energy-Efficient Analog IC Design"*** online course, held in January 2024, set a record audience of 120 analog IC design engineers and research graduates from 24 countries, across 5 continents and 19 time-zones, representing semiconductor technology giants and leading research organizations, excited to attend the fascinating presentations by Prof. Patrick Mercier (UCSD), a leading research expert in ultra-low-power microsystems, with ca. 200 peer-reviewed publications.

The countries represented at this international course were: Japan, China, Thailand, Singapore, India, S. Arabia, Israel, Egypt, Greece, Italy, Bulgaria, Austria, Germany, Poland, Czech Republic, Switzerland, Netherlands, Spain, England, Scotland, Ireland, Canada, USA and Brazil.

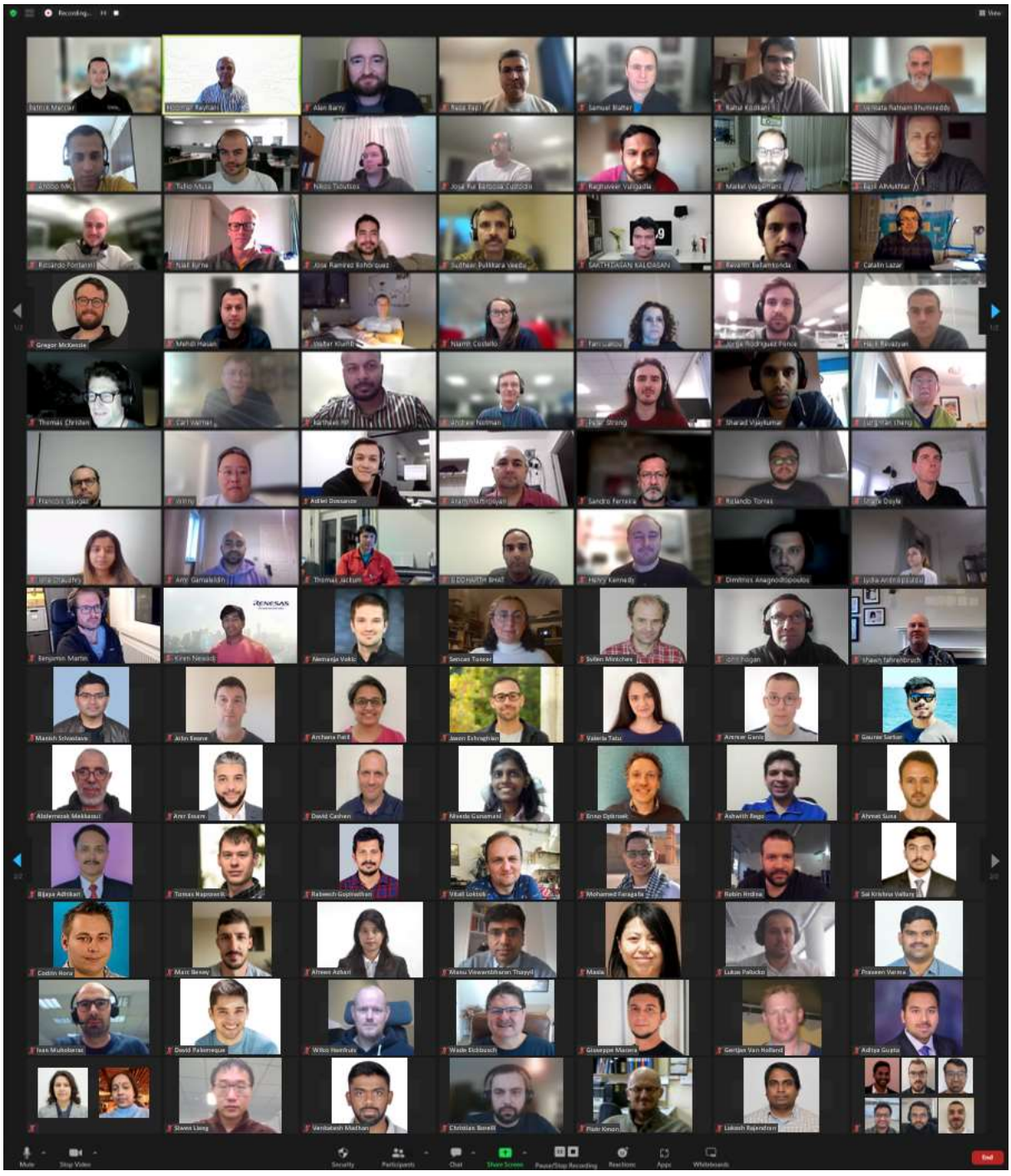
This cutting-edge course took the participants on a journey of understanding the art of subthreshold analog design techniques for energy-efficient integrated circuits with a focus on ultra-low-power analog, mixed-signal, wireless, and power management circuits that are enabling our connected world where nano-Watt wireless systems are being engineered now to meet the projected 100 billion IoT-connected-devices by 2030, 1 trillion by 2035 and beyond!

The main topics included: Subthreshold Analog Design, Reference Generators, Instrumentation Amplifiers, Sensors, Low-Power ADCs, Wireless Transceivers, Low-Power PLLs and DC-DC Converters.



Prof. Patrick Mercier (UCSD), course presenter, talked about ***"Energy-Efficient Analog IC Design"*** at an online course hosted by Hooman Reyhani, Ireland.

Prof. Mercier is currently an Associate Professor in ECE at the University of California San Diego (UCSD), as well as co-Director & Director of the Centres for Wearable Sensors and PMIC. His research interests include energy-efficient microsystems, focusing on RF circuits, power converters, and sensor interfaces for miniaturized systems and biomedical applications. Dr. Mercier has published 190+ peer-reviewed papers, including many ISSCC & JSSC papers, and several papers in high-impact journals such as Science, Nature Biotechnology, etc. He is a multi-award winner, has served as an Associate Editor of various IEEE journals and on the TPC for ISSCC, CICC, and the VLSI Symposium.



The lecturer, organizer and many of the participants of the ***"Energy-Efficient Analog IC Design"*** online course, January 2024.

For the homework assignments, the participants had access to the "UCSD LTspice Tutorial", as the primary simulation resource. An additional resource, "Analog IC Design Tutorial - Using LTspice & GF 180nm Open-Source PDK", was also made available. For more details, please see here.

The participants found the lecture playback facility of great benefit to catch-up with missed lecture(s) due to time-zone difference, busy work schedule, etc. or simply to review the lecture recording(s) at their own pace and convenience.

The feedback from the course participants was of great endorsement. One participant said, *"Very informative and engaging course. Prof. Mercier is a very good lecturer. He is clear and concise in his explanations."*. Another commented, *"Surely one of the best courses in terms of technical content, quality and presentation I have ever attended. Placing the bar very high for future courses."*. While another participant wrote, *"Loved the class. Looked forward to it all week."*.

Full access to this course content, as well as our previous courses, may be requested (subject to payment) via here. For more information, please see here.

— Hooman Reyhani