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Topic: Semiconductor Research - Nano, Giga, and Opto Electronics

Speaker: Yue Kuo, <https://yuekuo.tamu.edu>

Abstract:

MOSFETs and TFTs are key devices in today's two largest semiconductor industries. They are also the fundamental of Taiwan's economy. Both these devices are operated based on the same principle and facing common challenges. The development of the former is to shrink the device size closely following the Moore's Law. The advancement of the latter is to increase the array size and density. The success of both technologies depends on the thorough understanding of the complicated relationship among materials, processes, and devices. The ultimate challenge in both technologies is to transmit signals by light. In this talk, the speaker briefly reviews and discusses some of his work in these areas.

Short CV of speaker:

Yue Kuo is Dow professor at Texas A&M University and a Specially Appointed Professor at Osaka University. He received BS Chemical Engineering from NTU and Dr. Eng. Sci. from Columbia University. Previously, he worked in IBM T. J. Watson Research Center and Data General Semiconductor Division at Silicon Valley. His work has posed great impacts to the scientific community and industry.

Prof. Kuo is the first Chinese elected to President of ECS in its 117 years history. ECS was founded by science and technology pioneers including Thomas Edison and others. The 10,000 members from 80 countries include Nobel Prize winners, Intel founder Gordon E. Moore, and other distinguished scientists.

Prof. Kuo's honors include the Gordon E. Moore Medal, Pan Wen Yuan Foundation Distinguished Research award, Fellow of all 4 major solid state societies (IEEE, ECS, AVS, and MRS), etc. He was consulted by the late premier of Taiwan Mr. Sun Yun-suan in establishing the national TFT project which established today's multibillion-dollar industry. He has consulted for semiconductor companies globally.

Prof. Kuo's classic 2-volume TFT textbook is popular in universities and industry.