2014 PSROC Annual Meeting

Special forum

“5 nm and beyond”

The future of the next generation IC technology

2:00pm to 4:00pm, **Wed. January 22, 2014** at the international hall (7F) in NCHU library.

Join us to make history

Program

Moderator: Prof. T. K. Lee (Institute of Physics, Academia Sinica, Taiwan)

2:00pm-2:30pm Dr. Chih-Yuan Lu (President, Macronix Internationl Co., Ltd.)

" How to keep Moore's Law effectively by any means"

2:30pm-2:50pm Dr. Samuel C. Pan (Director, CT/R&D, TSMC)

“ Semiconductor Device to Take a Quantum Physics Leap in 21st Century”

2:50pm-3:10pm Prof. Kang L Wang (Distinguished Prof. and Raytheon Prof. of Physics Science and Electronics, UCLA)

“ CMOS derivatives and alternatives”

3:10pm-3:30pm Prof. Ming-Hwei Hong (Distinguished Prof. of Physics, NTU)

“ Pushing the ultimate CMOS and beyond “

3:30pm-4:00pm audience discussion

Departure from the famous Moore's law for scaling of electronic devices has happened for sometime now. The scaling down of semiconductor devices like Field-effect transistor (FET) is coming to an end when we reach 10nm or 7 nm. The International Technology Roadmap for Semiconductors offers little guidance about the pathway to reach below 5nm. The fundamental reason for this is well known to all physicists and physics students. When the relevant length scale reaches atomic or molecular level, the quantum nature of atoms and electrons become very important. To proceed further, we have to overcome challenges in controlling quantum properties, searching for new materials, designing new architectures, and proposing new fabrication process etc. In all these areas interdisciplinary collaboration is necessary, and physics will play an important or even deciding role in formulating a solution.

Taking the opportunity of the largest gathering of Taiwan Physicists and students in the 2014 PSROC annual meeting, a special forum" 5nm and beyond" is organized to present the challenges and possible solutions to this important issue. We are fortunate to have invited the leaders in semiconductor industry and academic arena to present their insights and most up-to date development in this topic. For anyone interested in the future of semiconductor technology, this is a great opportunity to catch up and to expand your thinking on this frontier research topic.

Distinguished Forum panelists:

Dr. Chih-Yuan Lu, 盧志遠總經理(President, Macronix International Co., Ltd.)

Dr. Samuel C. Pan, 潘正聖處長(Director, CT/R&D, TSMC),

Prof. Kang-Lung Wang, 王康隆教授(Distinguished Prof. and Raytheon Prof. of Physics Science and Electronics, UCLA)

Prof. Ming-Hwei Hong , 洪銘輝教授(Distinguished Professor, Department of Physics, NTU)

And moderator:

Prof. Ting-Kuo Lee, 李定國所長(Director, Institute of Physics, Academia Sinica)