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Speaker: Olivia Chen, Assistant Professor, Institute of Advanced Sciences
Date: Friday, November 6
Time: 9 -10am EST
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Superconductive Electronics and Its Applications

Superconducting electronics-based technology has been proposed and utilized for constructing ultra-fast and low-power-dissipation integrated circuits. With tremendous high-energy efficiency when compared to CMOS technology, the superconductor-based logic comprises a promising perspective in building both analog and digital circuits.

In this talk, we will provide an overview of superconductive electronics technology and its major applications.

Olivia Chen is an assistant professor in the Institute of Advanced Sciences at Yokohama National University, Japan. In 2017, she received her PhD degree in Electronic Engineering from YNU, Yokohama, Japan. In 2008, she received her bachelor's degree in Electronic Engineering from Southeastern University, Nanjing, China.

She was a research associate at YNU, Yoshikawa Laboratory, Yokohama, Japan (2017), part-time lecturer at YNU, Department of Electrical and Computer Engineering, Yokohama, Japan (2014-2017). From 2008 through 2010, she was a system engineer at Sony Electronics, Wuxi, China (2008-2010).
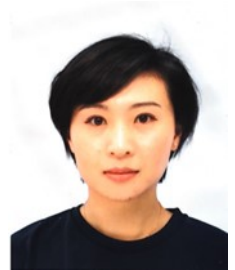
She has engaged in research focusing on high-performance computing systems using superconducting integrated circuits for eight years. She was invited as young plenary speaker to give a lecture at Applied Superconductivity Conference (ASC2018), the world's largest international conference on superconducting applications. Her research results have been published in numerous journals (Scientific Report, IEEE Transaction on Applied Superconductivity, Superconductor Science and Technology) and international conferences (ISEC, ASC, EUCAS). In addition to the superconducting area, the research results were widely disseminated to the world through presentations in computer architecture and CAD research fields such as GLSVLSI2019, ISCA2019 and ICCAD2020.

Since 2017, she has participated in a research and development program that focuses on developing CAD tools for large-scale superconducting integrated circuits funded by the US IARPA. In 2019, she received two national research grants from the Japan Science and Technology Agency (JST) and the Japan Society for the Promotion of Science (JSPS). She currently serves as the principal investigator for both projects.