SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Microelectronic Technologies and Devices

Host: Dr. Liu Long

TOPIC	**:**	**Ultra-Low Specific Contact Resistivity of Ti/SiGe Contact: Interface Reaction and Co-Doping**
SPEAKER	**:**	**Ms. Xu Haiwen** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Monday, 11 April 2022**
TIME	**:**	**4.00PM to 4.30PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/84072391025?pwd=bkZKajlEaE13UWN6NTZrMVVJVVJydz09** **Meeting ID: 840 7239 1025** **Password: 309470**

ABSTRACT

SiGe as source/drain (S/D) and channel materials have been used in pFETs and will continue to enable future advanced pFETs technology. With the aggressive shrinkage of device dimensions and S/D contact areas, contact resistance in S/D plays a more and more important role in performance enhancement in next-generation transistors. The methods of advanced implantation techniques followed by thermal or laser annealing have been reported to achieve a high active doping concentration and a low contact resistivity. However, strain relaxation caused by implantation damages as well as the difficulty of controlling the local temperature in microstructures during laser annealing is the main concerns. In-situ doping technique has the advantages of selective growth, damage minimization, and high activation efficiency. Using the co-doping technique with in-situ growth, we have realized a sub-10-9 Ω-cm2 contact resistivity. The theoretical value of contact resistivity in extremely high doping levels was also calculated. To investigate the thermal behavior, an interface reaction mechanism was proposed and was further verified.

BIOGRAPHY

Xu Haiwen received her Bachelor's degree in microelectronics science and engineering from Jilin University, China, in 2018. She is currently a Ph.D. student in the Electrical and Computer Engineering Department, National University of Singapore. Her research mainly focuses on metal-semiconductor contact on Ge-based materials.