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Speech subject: Measurement and characterization in wide bandgap semiconductor devices

Speech leader: Xuefeng ZHENG, Professor, Xidian University

Speech Description/Objective:

Wide bandgap semiconductor devices feature great material advantages, which made them have a wide range of applications in RF and power management. However, there are still some evident degradation and reliability issues in various applications for wide bandgap semiconductor devices, which has become the hot research topics in international academic area. Defects are the essential reason for these issues. In this report, the typical degradation phenomena in GaN and GaO devices under electrical stress and irradiation environment will be discussed. Then the measurement techniques and defect characterization will be given to explain the relevant phenomena. The results can provide valuable information for advanced device development and mechanism study.

Speech Outline:

Background
Results discussion
Conclusions

Who Should Attend:

Master students, PhD students and researchers in semiconductor devices measurement and analysis.

Introduction of Speaker:

Dr. Xuefeng Zheng is a professor in the faculty of Integrated Circuits in Xidian University, China. He has received the B.Eng. and M.Sc. degrees in microelectronics and solid-state electronics from Xidian University, Xi'an, China, and the Ph.D. degree in Electrical and Electronic Engineering from Liverpool John Moores University, UK. His research is focused on the wide and ultra-wide bandgap semiconductor devices, defect characterization and reliability assessment. He has been the principal investigator and co-investigator of a number of research projects, including the National Natural Science Foundation of China, the National Key R&D Program of China, major national science and technology projects, etc. He has published more than 90 publications in the journal and conference of Applied Physics Letters, IEEE Transaction on Electron Devices, IEEE Electron Device Letters, IEEE International Electron Devices Meeting, etc. He has also been authorized more than 80 invention patents. Meanwhile, he has also received several National and provincial Science and Technology Awards.