

# The Department of Electrical and Computer Engineering

Announces the

## Final Defense of Dissertation

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University of California, Riverside*

Date: March 18, 2019

Time: 1:30 pm

Location: Winston Chung Hall, Room 202

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Title: Radio Frequency Switch Design for 5G Communication and ESD Design on Advanced Technology

Abstract: The evolving 5G requires high data rate, low latency and broad coverage. Many new technologies are developed to fulfill these requirements, including multi RAT, carrier aggregation, advanced slot-based framework, mm-wave bands, beamforming and MIMO. These technologies require high isolation and harmonic filtering, low insertion loss, high linearity and fast switching RF front-end switches. On the other hand, as IC process evolving, traditional CMOS technology cannot fulfill the high speed and low power requirements. Therefore, advanced processes, FinFET and FDSOI technology start to be widely used, following with rising of cost and increase design complexity. Therefore, ESD reliability becomes a major concern. Successful high area efficiency ESD protection device design and temperature effect on ESD protection devices are discussed. Successful simulation before silicon is essential for first-silicon success and time-to-market, especially for high cost advanced technologies. So does for ESD protection. In this work, TCAD simulation methodology for FinFET ESD device and circuit level ESD protection circuit simulation flow is developed.