

HVCMOS (COFFEE) Simulation

Wednesday, 23 October 2024 21:36 (1 minute)

Technology Computer-Aided Design (TCAD) simulations were conducted on High Voltage CMOS (HV-CMOS) sensors with varying substrate resistivities. The simulations investigated how changes in substrate resistivity affect leakage current, breakdown voltage, the depletion region, and the distribution of high electric field areas within the sensor. The effects of pixel gap and p-stop on capacitance were evaluated, with simulation results agreeing with experimental measurements. Furthermore, Allpix2 simulations provided insights into the sensor's response to Minimum Ionizing Particles (MIPs), facilitating an analysis of signal collection and charge sharing phenomena across different substrate resistivities.

Primary authors: ZHU, Hongbo (Zhejiang University); Mx DENG, Jianpeng (Zhejiang University); ZHAO, Mei (高能所, IHEP); LU, Weiguo (IHEP); ZHOU, Yang (IHEP); LI 李, Yiming 一鸣 (IHEP); XIANG, Zhiyu; XU, Zijun (Peking Univ.); 李, 乐怡 (中国科学院高能物理研究所 (IHEP))

Presenter: Mx DENG, Jianpeng (Zhejiang University)

Session Classification: Poster

Track Classification: Detector and System: 12: Silicon Detector