

# MODEL ANALYSIS AND PARAMETER EXTRACTION FOR MOS CAPACITOR INCLUDING QUANTUM MECHANICAL EFFECTS

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摘要

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# MODEL ANALYSIS AND PARAMETER EXTRACTION FOR MOS CAPACITOR INCLUDING QUANTUM MECHANICAL EFFECTS

Hai-yan Jiang, Ping-wen Zhang

LMAM, CCSE and School of Mathematical Sciences, Peking University, Beijing 100871, China

**Abstract** The high frequency CV curves of MOS capacitor have been studied. It is shown that semiclassical model is a good approximation to quantum model and approaches to classical model when the oxide layer is thick. This conclusion provides us an efficient (semiclassical) model including quantum mechanical effects to do parameter extraction for ultrathin oxide device. Here the effective extracting strategy is designed and numerical experiments demonstrate the validity of the strategy.

**Key words** [Poisson Equation](#) [Schrödinger Equation](#) [MOS Capacitor](#) [Quantum Effect Sensitivity](#) [Parameter Extraction](#).

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