IDEC Chip Design Contest

Analysis Boundary Condition of Plasmonic THz Detection with SPICE

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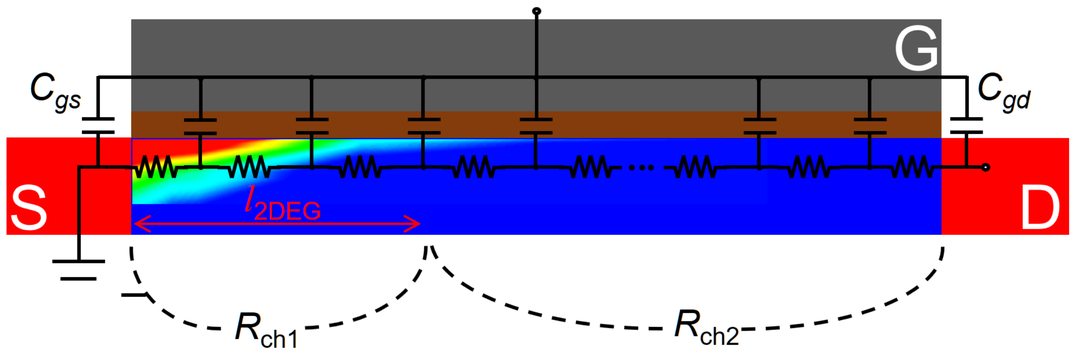
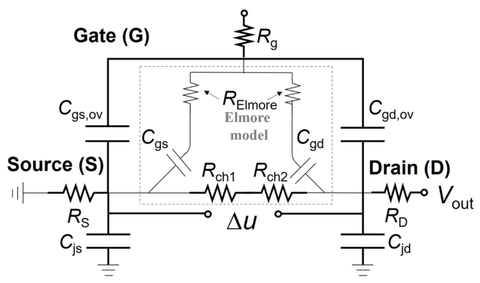
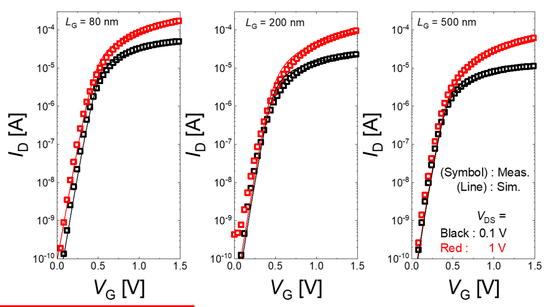
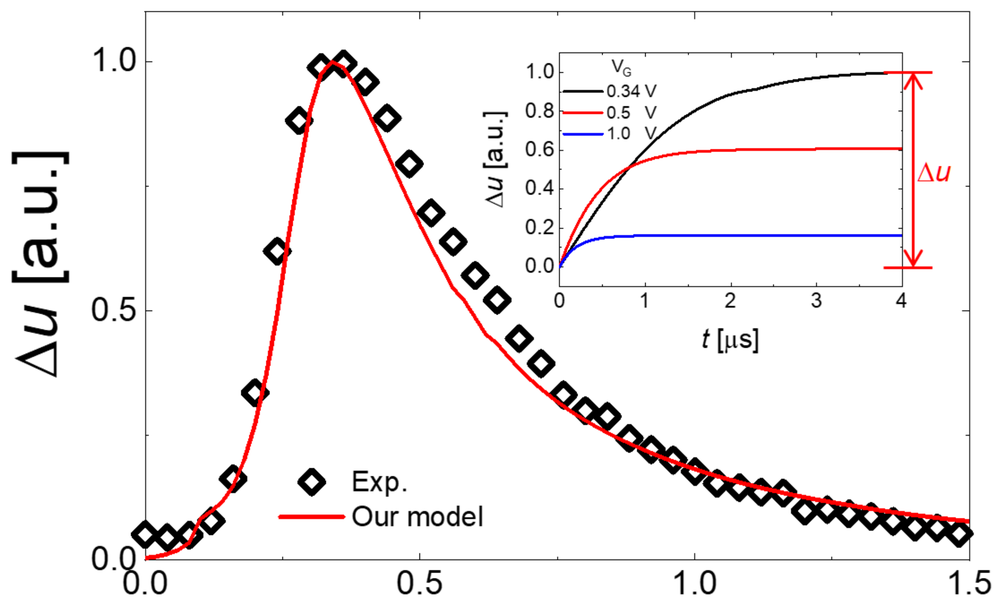
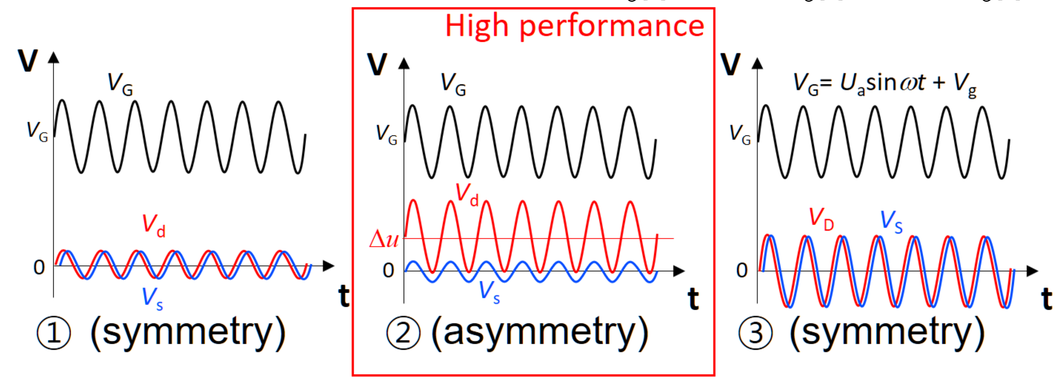
Terahertz (THz) imaging technology has various potential applications because the THz wave can be transmitted through non-metallic materials such as packaging and clothes. For ‘see-through’ THz imaging, the performance of CMOS-based THz detectors should be characterized. In this work, we analysis of plasmonic THz detection based on source/drain boundary condition (symmetry & asymmetry) with HSPICE simulation. Based on the results, We successfully demonstrate plasmonic THz detection and THz see-through imaging.

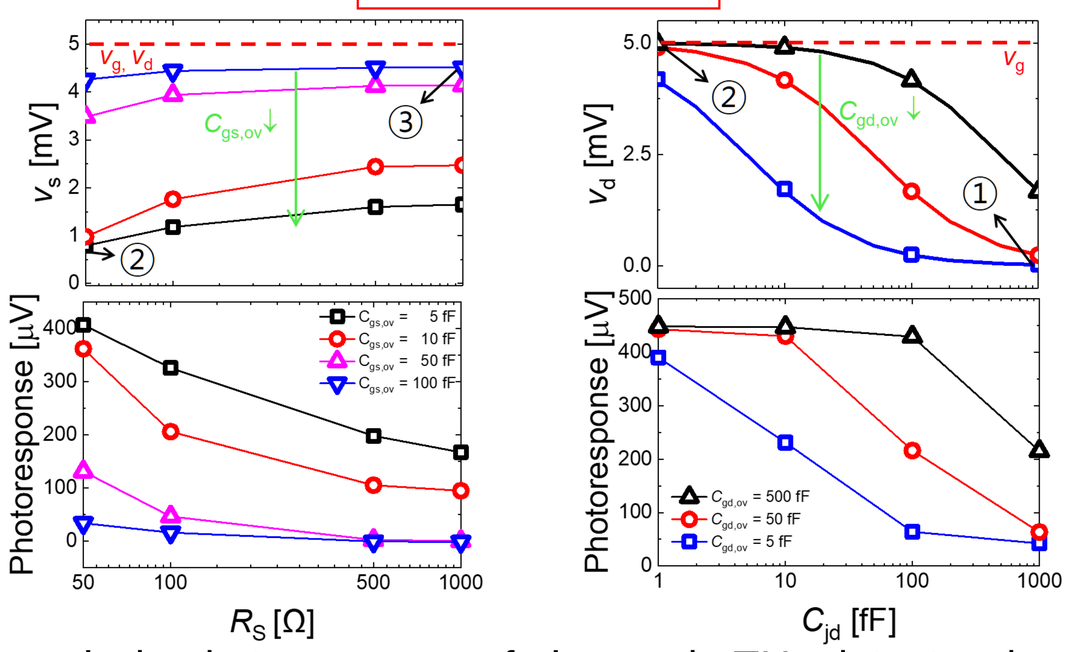


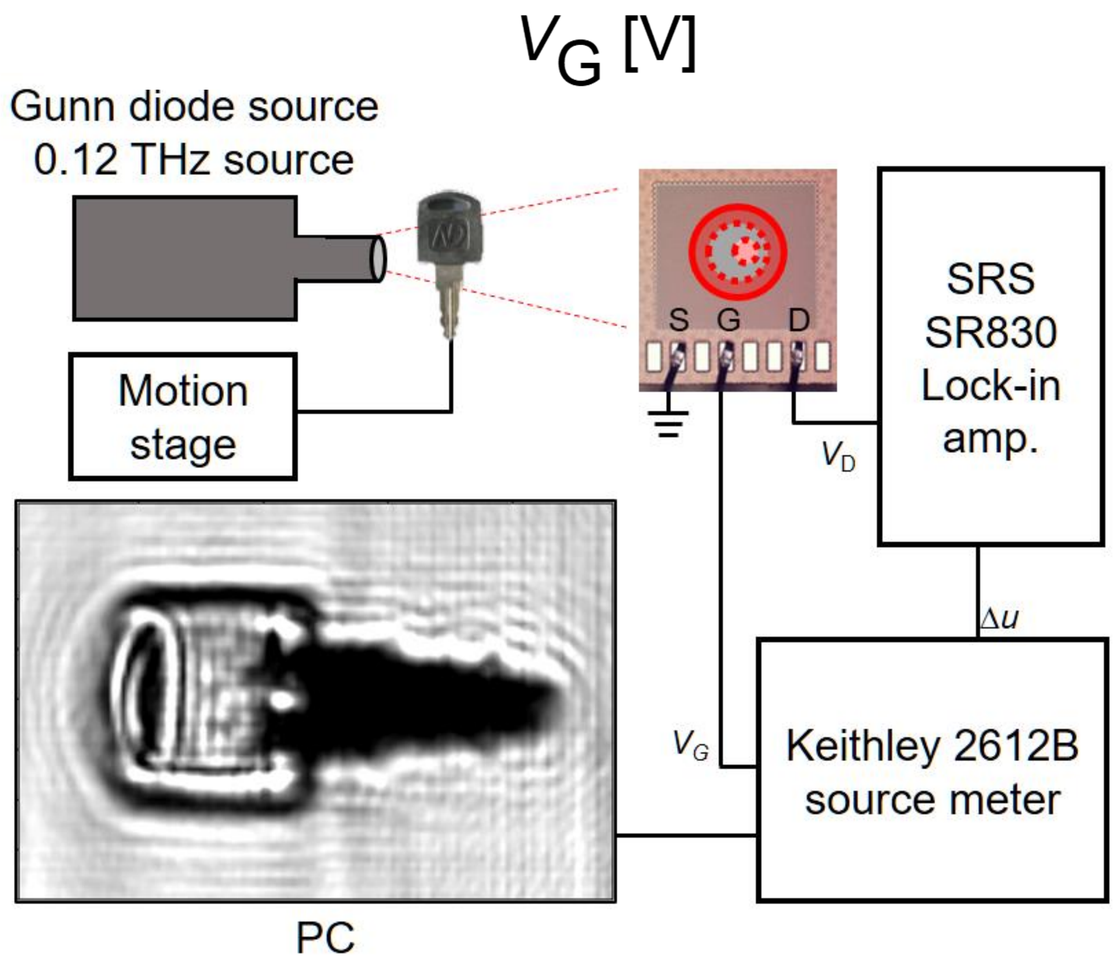












We analysis photoresponse of plasmonic THz detector depend on Source & Drain boundary condition with SPICE simulation

Performance and delay of THz detector are well characterized with HSPICE simulation for THz imaging

- Well characterization of plasmonic THz detection based on symmetry & asymmetry condition with SPICE
- The experiment results are succefully demonstrated for ‘see-through’ image

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