# Abstracts

## Frequency response mechanisms for the GaAs MSM photodetector and electron detector

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The GaAs metal-semiconductor-metal (MSM) device is a very useful planar and monolithic-microwave integrated-circuit compatible photodetector and electron-detector. As a photodetector, the MSM has been used for many applications in the past, however, in this paper we demonstrate its usefulness as an electron-beam detector as well. We present here a comprehensive analysis of the primary detection mechanism (electric field enhanced collection of generated electrons) as well as a newly identified secondary mechanism. This new mechanism is characterized by a high detection gain, but low speed. Experimental results are presented to verify the analysis, and possible applications are suggested by utilizing each one of the two detection mechanisms.

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