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Applications of Long-wavelength 256x256 GaAs/Al_xGa_{1-x}As Quantum Well Infrared Photodetector Hand-held Camera

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Abstract

A 9 μ m cutoff **256x256** hand-held quantum well infrared photodetector (QWIP) camera has been demonstrated. Excellent imagery, with a noise equivalent differential temperature (NE Δ T) of **26** mK has been achieved. In this presentation, we discuss the development of this very sensitive long wavelength infrared (LWIR) camera based on a GaAs/AlGaAs QWIP focal plane array, its performance in quantum efficiency, NE Δ T, minimum resolvable temperature (MRTD), uniformity, and operability, and its applications. The research described in this paper was performed by the Center for Space Microelectronics Technology, Jet Propulsion Laboratory, California Institute of Technology, and was jointly sponsored by the Ballistic Missile Defense Organization/Innovative Science and Technology Office, and the National Aeronautics and Space Administration, office of Space Access and Technology.