



## Towards a 100eV, T=4K HEMT-Based Charge Amplifier for Ionization Readout of CDMS Detectors

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The low mass WIMP detection threshold of the Cryogenic Dark Matter Search (CDMS) is largely determined by electronic noise in the ionization signal readout amplifier. In recent years, CNRS/LPN have developed low-noise, low-power HEMTs with better low frequency noise than silicon FETs typically used in these amplifiers. Use of HEMTs for CDMS detector readout should allow for an ionization threshold of 100eV. We have designed a complete cryogenic charge amplifier using these HEMTs which dissipates only 0.75mW of power. We present the measured gain and noise performance of a prototype amplifier based on this design.