Electron Mobility in InGaN and InAlN Alloys LEON HSU, University of Minnesota, WALDEK WALUKIEWICZ, Lawrence Berkeley National Laboratory — III-Nitride alloys containing In offer the possibility of engineering materials with bandgaps as small as 0.7 eV. We have calculated electron mobilities in InGaN and InAlN alloys taking into account the standard scattering mechanisms of acoustic and optical phonons, Coulomb scattering from charged impurities, and alloy disorder scattering. Effects of the non-parabolicity of the conduction band have also been included. We compare our calculations with experimental results on composition and concentration dependencies of the electron mobility in as-grown and in high-energy particle irradiated materials. This work was partially supported by the US DOE under Contract No. DE-AC03-76SF00098.