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**A Model for Mobility Analysis in Semiconductors.** HENRY BOURASSA, ARTHUR SIWECKI, MO AHOUJJA, SAID ELHAMRI, Department of Physics, University of Dayton, Dayton, Ohio — The Hall Effect measurements have long been the standard electrical characterization technique to extract the free carrier concentration and carrier mobility as a function of temperature in semiconductors. Analysis of the measured mobility shows that the mobility is affected by different scattering mechanisms. In this project, a model of the different scattering mechanisms due to acoustic mode, polar-optical mode, piezoelectric and ionized impurity is considered using Mathcad, a computer software. The model will be applied to a mobility data measured on GaN, a wide bandgap semiconductor used in optoelectronic devices such as UV detectors and blue laser diodes.

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