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**Minority-Carrier Lifetimes in GaInP** LINDA FRITZ, NREL and Franklin & Marshall College, JERRY OLSON, National Renewable Energy Laboratory, DARIUS KUCIAUSKAS, National Renewable Energy Laboratory — Minority-carrier lifetimes are very important to the performance of photovoltaic materials and are quite sensitive to the structure of the material. The impact of lifetimes can be readily illustrated using computer modeling of cell performance, and a brief discussion of the results of our modeling will be given. AlInP/GaInP double heterojunctions of varying thickness and doping concentration were grown on GaAs substrates by metallorganic chemical vapor deposition (MOCVD). Lifetimes were measured using time-resolved photo-luminescence. Carrier concentrations were determined using capacitance-voltage measurements. Here we report on the minority carrier lifetime as a function of active layer thickness and doping concentration for n-type and p-type GaInP that is lattice-matched to the substrate.

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