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Maria C. Mariani and **Marc Salas*** (salasm@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88003-8001. *Solutions to Integro-Differential Equations arising in models for charged transport in semiconductors.*

The existence of strong and global solutions for a nonlinear parabolic integro-differential system of PDEs arising in models for charged transport in semiconductors is studied. The existence results are proven by using a priori estimates and fixed point theorems. (Received February 03, 2010)