1154-35-1556 **Annegret Glitzky**, WIAS Berlin, Mohrenstrasse 39, 10117 Berlin, Germany, **Matthias Liero**, WIAS Berlin, Mohrenstrasse 39, 10117 Berlin, Germany, and **Grigor Nika***, WIAS Berlin, Mohrenstrasse 39, 10117 Berlin, Germany. *An existence result for a class of electrothermal drift-diffusion models with Gauss–Fermi statistics for organic semiconductors.*

We prove the existence of solutions for the stationary Van Roosbroeck system coupled to the heat equation by an iteration scheme and Schauder's fixed point theorem. The former consists of continuity equations for electrons and holes and a Poisson equation for the electrostatic potential, and the latter features source terms containing Joule heat contributions and recombination heat. Special features of organic semiconductors like Gauss–Fermi statistics and mobilities functions depending on the electric field strength are taken into account. The underlying solution concept is related to weak solutions of the Van Roosbroeck system and entropy solutions of the heat equation. Additionally, for data compatible with thermodynamic equilibrium, the uniqueness of the solution is verified. (Received September 16, 2019)