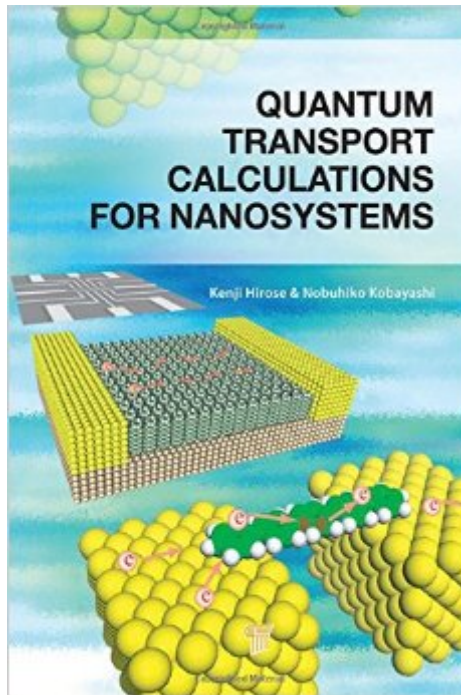# Quantum Transport Calculations For Nanosystems

Synopsis

As electric devices become smaller and smaller, transport simulations based on the quantum mechanics become more and more important. There are currently numerous textbooks on the basic concepts of quantum transport, but few present calculation methods in detail. This book provides various quantum transport simulation methods and shows applications for transport properties of nanometer-scale systems. It starts with a short review of quantum transport, followed by various calculation methods based on scattering approaches, non-equilibrium Green ™s function (NEGF), master equation, and time-dependent wave-packet diffusion (TD-WPD). With these tools, transport properties of various nanosystems are then explored.

Book Information

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