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Heavily-Doped 2D-Quantized Structures and the Einstein Relation

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Heavily-Doped 2D-Quantized Structures and the Einstein Relation

By Kamakhya P. Ghatak

Springer-Verlag Gmbh Aug 2014, 2014. Buch. Book Condition: Neu. 23.5x15.5x cm. Neuware - This book presents the Einstein Relation(ER) in two-dimensional (2-D) Heavily Doped (HD) Quantized Structures. The materials considered are quantized structures of HD non-linear optical, III-V, II-VI, Ge, Te, Platinum Antimonide, stressed materials, GaP, Gallium Antimonide, II-V, Bismuth Telluride together with various types of HD superlattices and their Quantized counterparts respectively. The ER in HD opto-electronic materials and their nanostructures is studied in the presence of strong light waves and intense electric fields on the basis of newly formulated electron dispersion laws that control the studies of such quantum effect devices. The suggestion for the experimental determination of HD 2D and 3D ERs and the importance of measurement of band gap in HD optoelectronic materials under intense built-in electric field in nanodevices and strong external photo excitation (for measuring photon induced physical properties) are also discussed in this context. The influence of crossed electric and quantizing magnetic fields on the ER of the different 2D HD quantized structures (quantum wells, inversion and accumulation layers, quantum well HD superlattices and nipi structures) under different physical conditions is discussed in detail. This monograph contains 100 open research problems which form ...



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