Record Nr. UNINA9910300434603321 Autore Ghatak Kamakhya Prasad Titolo Einstein's Photoemission: Emission from Heavily-Doped Quantized Structures / / by Kamakhya Prasad Ghatak Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2015 **ISBN** 3-319-11188-4 Edizione [1st ed. 2015.] Descrizione fisica 1 online resource (XXXVIII, 495 p. 161 illus.) Collana Springer Tracts in Modern Physics, , 0081-3869; ; 262 Disciplina 530.12 Soggetti Quantum physics Lasers **Photonics** Optical materials Electronic materials Nanoscale science Nanoscience Nanostructures Nanotechnology **Quantum Physics** Optics, Lasers, Photonics, Optical Devices Optical and Electronic Materials Nanoscale Science and Technology Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Nota di contenuto From the Contents: Part I Influence of Quantum Confinement on the EP from Non-Parabolic Semiconductors -- The EP from Quantum Wells (QWs) of Heavily Doped(HD) Non-Parabolic Semiconductors -- Part II The EP from HD III-V Semiconductors and Their Quantized Counter Parts -- The EP from HD Kane Type Semiconductors. This monograph solely investigates the Einstein's Photoemission(EP) Sommario/riassunto from Heavily Doped(HD) Quantized Structures on the basis of newly

formulated electron dispersion laws. 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 EP in HD optoelectronic materials and their nanostructures is studied in the presence of strong light waves and intense electric fields that control the studies of such quantum effect devices. The suggestions for the experimental determinations of different important physical quantities in HD 2D and 3D materials and the importance of measurement of band gap in HD optoelectronic materials under intense built-in electric field in nano devices and strong external photo excitation (for measuring physical properties in the presence of intense light waves which alter the electron energy spectra) have also been discussed in this context. The influence quantizing magnetic field, on the EP of the different HD quantized structures (quantum wells, quantum well HD superlattices and nipi structures) under different physical conditions has been investigated. This monograph contains 100 open research problems which form the integral part of the text and are useful for both Ph.D aspirants and researchers in the fields of materials science, condensed matter physics, solid-state sciences, nano-science and technology and allied fields in addition to the graduate courses in modern semiconductor nanostructures offered in different Universities and Institutes.