



Ionization of Solids by Heavy Particles

By -

Springer-Verlag New York Inc., United States, 2012. Paperback. Book Condition: New. 254 x 178 mm. Language: English . Brand New Book. This book collects the papers presented at the NATO Advanced Research Workshop on Ionization of Solids by Heavy Particles , held in Giardini-Naxos (Taormina), Italy, on June 1 -5, 1992. The meeting was the first to gather scientists to discuss the physics of electron emission and other ionization effects occurring during the interaction of heavy particles with condensed matter. The central problem in the field is how to use observations of electron emission and final radiation damage to understand what happens inside the solid, like excitation mechanisms, the propagation of the electronic excitation along different pathways, and surface effects. The ARW began with a brief survey of the field, stressing the unknowns. It was pointed out that ionization theories can only address the very particular case of weak perturbations. For this problem, this meant high speed, low-charged projectiles (a perturbation treatment of interactions with slow, highly charged ions was later presented). Only semi-empirical models exist for velocities lower than the Fermi velocity in the solid, which can be used to predict kinetic electron emission yields. These models, however, do...



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