Stopping power partikel bermuatan dengan efek pentalan inti = Charged particle stopping power with recoil atoms effect

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Abstrak

Dalam skripsi ini, peneliti bertujuan mencari perhitungan dan membuat perbandingan stopping power penetrasi proyektil dengan target yang berupa elektron dan inti atom. Eksitasi dari elektron target merupakan kontribusi yang diperhitungkan untuk berkurangnya energi proyektil. Perhitungan rumus dilakukan dari Bethe Stopping Power dengan aproksimasi Born hingga perturbasi orde kedua, biasa disebut efek Barkas. Pada aproksimasi Born pertama, inti atom tidak berperan begitu besar dalam menghasilkan energi stopping power. Sedangkan elektron menunjukkan hasil yang signifikan.

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In this thesis, the researcher intends to measure and compare the stopping power of penetration between projectile and the targets which are electrons and nuclei. The contribution to the energy loss of the projectile is solely due to excitation of the target electrons. The calculation is derived from Bethe’s stopping power using the Born approximation up to the second order perturbation, commonly known as the Barkas effect. In the first Born approximation, it is showed that nuclei does not really participate in resulting stopping power energy. On the other hand, electrons shows big significant result.