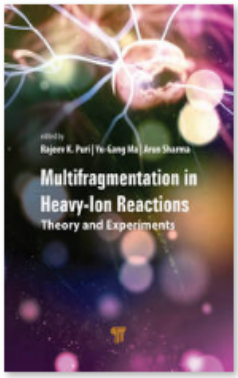

Chapter

Investigation of Light Particle and Intermediate Mass Fragment Production Cross Sections of Excited Compound System 44Ti* Formed in 32S + 12C and 28Si + 16O Reactions

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ABSTRACT

The total decay cross section, the intermediate mass fragment (IMF) production cross section, and the cross section for the formation of light particle (LP) for the decay of the compound system ^{44}Ti* formed in the reactions ^{32}S + ^{12}C and ^{28}Si + ^{16}O have been evaluated by taking the scattering potential as the sum of Coulomb and nuclear proximity potential, with and without incorporating deformation effects. In the past few years, several experimental and theoretical studies have been done on the decay of light compound nuclear systems formed through heavy-ion reactions. Simple statistical theory says that a compound nucleus (CN) is formed after complete equilibration of all the degrees of freedom, which then decays into various exit channels. The decay probability for CN is governed by the available phase space. The chapter presents the details of the formalisms used for the evaluation of the scattering potential and, the sum of Coulomb and proximity potentials.

Multifragmentation in Heavy-Ion Reactions

Theory and Experiments

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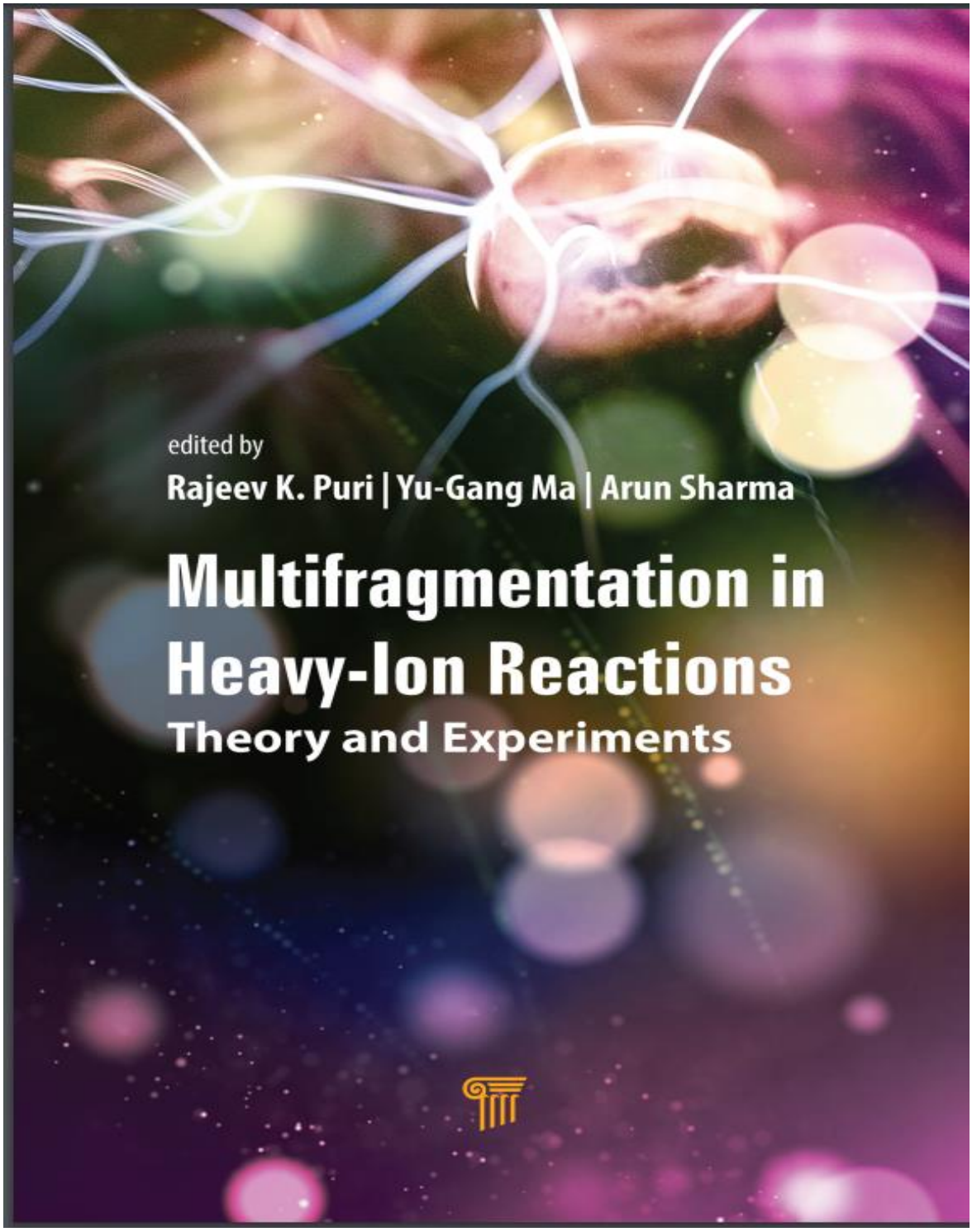
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