

技术及应用

快重离子电子能损引起的缺陷产生及其后续效应

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摘要 快重离子与凝聚态物质相互作用是核物理研究的重要领域之一,近年不断有新的现象发现。文章综述了快重离子电子能损效应研究的历史和概况,重点介绍了快重离子辐照引起的缺陷产生和退火、潜径迹的形成、塑性形变、相变等现象以及相关理论模型,对该领域未来发展趋势给出展望。

关键词 [电子能损效应](#) [缺陷产生](#) [潜径迹](#) [塑性形变](#) [快重离子辐照](#)

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Defect Production and Subsequent Effects Induced by Electronic Energy Loss of Swift Heavy Ion

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Abstract Swift heavy ion in matter is one of forefront fields of nuclear physics in the world. A series of new phenomena were discovered in recent years. The history and status on the development of this field were reviewed. Electronic energy loss effects induced by swift heavy ion irradiation, such as defect production and evolution, ion latent track formation, phase transformation and anisotropy plastic deformation were introduced emphatically. A trend of future investigation was explored.

Key words [electronic energy loss effect](#) [defect production](#) [latent track formation](#) [plastic deformation](#) [swift heavy ion irradiation](#)

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