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9MeV行波电子直线加速器加速管微波测试及调整

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摘要 介绍了海关大型集装箱在线检测用加速器的核心部件 9MeV行波电子直线加速器加速管的微波测试及调整,并详细描述了加速管微波调谐、加速管与矩形波导匹配以及加速管整管场分布及总衰减量的测量,给出了加速管微波测试及调整的结果,结果表明微波调试满足物理设计的要求

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Microwave Measurements of 9 MeV Travelling Wave Electron Linac Accelerating Tube

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Abstract Cold measurements and RF adjusting of 9 MeV travelling wave electron linac accelerating tube is described in this thesis. It is a part of an accelerator used for inspection of vehicle cargoes in rail cars, trucks, shipping containers, or airplanes in customs. Energy of electrons after travelling through the tube can reach 9 MeV(pulse current intensity 170 mA) or 6 MeV (pulse current intensity 300 mA). The tuning and matching process of accelerating tube will be illustrated, including the electrical field distribution on axis, attenuation coefficient. The cold measurements date are available for the design.

Key words [travelling wave accelerating tube](#) [microwave measurements & tune](#) [coupler match](#) [field distribution](#) [attenuation](#)

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