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技术及应用

# 软X射线辐照LY12铝靶的汽化冲量计算研究

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摘要 采用数值模拟方法对软X射线辐照LY12铝引起的汽化冲量进行了研究，提出了两种汽化冲量的计算方法，得到了汽化冲量随X射线初始能注量的变化规律。计算结果表明：对于1 keV软X射线，LY12铝的汽化冲量随着能注量的增大而线性增大。计算结果与一些经验公式的计算结果以及实验结果较为吻合。通过对 ∑m i u i 和∑p g (t) Δ t 两种方法计算原理的分析和对各计算量的监控表明：两种方法均能较好地计算软X射线辐照材料产生的汽化冲量，但 ∑p g (t) Δ t 方法得到的汽化冲量结果更为准确和符合实际。

关键词 X射线；汽化冲量；热激波；数值模拟

分类号



# Calculation Study on Bioloff Impulse of LY12 Al Irradiated by Soft X ray

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**Abstract** Bioloff impulse of LY12 Al irradiated by soft X ray was studied by numerical simulation. Two methods were provided to calculate the bioloff impulse, and the rule of bioloff impulse as a function of original energy fluence was obtained. The calculation results indicate that as the energy fluence increases, the bioloff impulse of LY12 Al increases linearly irradiated by 1 keV soft X ray. The calculation results are agreement with that of some empirical formula and experimental data. Through analyzing the principle of two methods and monitoring each calculation parameter, it is shown that the boiloff impulse irradiated by soft X ray can be calculated using the two methods, but the result gained by ∑p g (t) Δ t method is more exact, and accords with practice better.

**Key words** X ray bioloff impulse thermal shock wave numerical simulation

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