

技术及应用

微米柱阵列ICF埋点靶的制备

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摘要 微米柱阵列埋点靶是研究超短激光辐照靶激光吸收效率和等离子体产生过程及发展的1种重要靶型。本文结合采用电子束刻蚀、X射线刻蚀和微电镀等制备金微米点阵列,用CVD方法对阵列间隙填充无应力CH薄膜,用SEM、AFM与白光干涉仪等对制作过程和结果样品进行检测。结果表明,用电子束刻蚀方法制作的掩膜分辨率好、边缘光滑。用同步辐射的X光制作高质量样品,样品点柱高宽比为4,垂直度近于90°,点柱阵列周期为2×2 μm,CH层厚约4 μm。

关键词 [微米柱阵列](#) [刻蚀](#) [CH](#)

分类号

Fabrication of Micro-column Array Filled With CH for ICF Target

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Abstract The target with micro-column array embedded in CH is a kind of target which is important to research ps/fs laser absorbing efficiency and plasma generating and developing when laser irradiated it. A way to fabricate the target was implemented. The electronic beam-etching, X-ray etching and microplating were used to fabricate micro-meter array and space was filled with CH in it. The SEM, AFM and white-light interferometer were used to characterize the sample. The result shows that the micro-column ratio of high and width is 4, the verticality is close to 90° and the space is 2×2 μm, and the thickness of CH is 4 μm.

Key words [micro-column](#) [array](#) [etching](#) [CH](#)

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