Pyrex玻璃的ICP刻蚀技术研究

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摘　要：

以SF6/Ar为刻蚀气体，采用感应耦合等离子体（ICP）刻蚀Pyrex玻璃，研究气体流量、射频功率对刻蚀速率及刻蚀面粗糙度的影响。采用正交实验方法找出优化的实验参数，得到Pyrex玻璃刻蚀速率为106.8nm/min，表面粗糙度为Ra=5.483nm，实验发现增加自偏压是提高刻蚀速率、减小刻蚀面粗糙度的有效方法。

关键词：ICP刻蚀，MEMS, Pyrex玻璃,实验设计

Study on the ICP Etching Technology for Pyrex glass

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Abstract:

Inductively Coupled Plasma Etching Technology of Pyrex glass etched by SF6 /Ar. The important parameters ,such as the flow of SF6 /Ar , ICP source power ,substrate power that affect the etching rate and roughness of glass are analyzed. Perpendicular experimentation is used in the experiment. An etch rate of 106.8nm/min With a surface roughness of 5.483nm is obtained.In the experiment,increasing self-bias voltage is an efficient method to improve the etching rate and surface roughness.

Keywords: ICP etching,MEMS,Pyrex glass,design of experiment

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