Anisotropic double glass components

What is laser-guided anisotropic etching (lgae)?
Based on our discovery of a new phenomenon,where laser modified-lines transform isotropic pristine glass etching to an anisotropic process guided by directions along modified tracks,we develop a laser-guided anisotropic etching (LGAE) method,presenting a significant advancement in the efficient fabrication of micro-engineered glass components.

Is etching anisotropic?
This etching is anisotropicdue to the varying etching rates of the modied region and pristine glass . The modied region can be etched entirely away in just a few minutes. Subsequently,a hemispherical cave is formed on the glass surface through continuous isotropic etching initiated from the micro pit,as shown in Fig. A2a.

What are two-dimensional anisotropic semiconductor materials?
The emergence of two-dimensional (2D) anisotropic semiconductor materials has gained significant interest due to their potential applications in electronic and optoelectronic fields. These materials exhibit in-plane angle-dependent propertiesowing to their distinct electronic band dispersion along different Recent Review Articles

Does laser-guided anisotropic etching affect the final shape?
The initial laser-machined arc profile is fully etched away during the isotropic etching and does not affect the final shape. At the same time,the steady and continuous laser-guided anisotropic etching can create V-shape tips with stable angles,guaranteeing shape accuracy and thus confirming the robustness of the LGAE method.

Micro-engineered glass components play a vital role in various domains, but their full potential remains untapped due to the lack of easily accessible high-precision machining ...

Residual stress in optical transparent materials often manifests itself as a polarization-dependent optical property, such as linear birefringence. Birefringence, or the ...

We study glass behavior in a mixture of elliptic and circular particles in two dimensions at low temperatures using an orientation-dependent Lennard-Jones potential. The ellipses have a ...

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There are various kinds of two-component glass formers. The simplest example is a mixture of two speciesofsymmetricdumbbells[15-17].Recently,westudied a mixture of ...

Abstract Precision machining of micro-structured glass components is crucial for numerous applications, yet conventional machining methods face challenges in achieving ...

In this paper, we studied the anisotropic etching behavior guided by laser modification and developed a laser-guided anisotropic etching (LGAE) method to transform ...

This work, entitled "Laser-guided anisotropic etching for precision machining of micro-engineered glass components", has been published in the International Journal of ...

When vector vortex beams propagate in such media, the balance between longitudinal and transverse electric field components is broken by anisotropic absorption, ...

We study glass behavior in a mixture of elliptic and circular particles in two dimensions at low temperatures using an orientation-dependent Lennard-Jones potential. The ...

We study glass transitions in mixtures of elliptic and circular particles in two dimensions using an orientation-dependent Lennard-Jones potential. Changing anisotropic ...

This article systematically categorizes anisotropic 2D materials and offers an insightful overview of their crystal structures. It also introduces various optical and electrical ...

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