

Scanning mirror and its manufacturing method

Increase micro-scanner life by reducing torsion bar degradation

Summary

So far, devices such as LIDAR (Light Detection and Ranging) have been developed using micro-scanners in order to reduce the size of the device. This micro scanner has a mirror that reflects the laser light and torsion bars that support it. It is configured to scan the laser light in two dimensions. Conventional scanning mirror having torsion bars made of silicon, deteriorates quickly due to oxidation and hydroxidation caused by moisture and oxygen on the surface of the torsion bar. Even if a diamond-like carbon (DLC) film is covered on the torsion bar surface, it is not possible to completely prevent the adhesion of water and oxygen to the torsion bar, and thus cannot prevent its deterioration.

This invention is able to provide a scanning mirror and its manufacturing method that can prevent oxidation and hydroxidation of the torsion bar and thereby control its degradation. This invention has a mirror section and a torsion bar whose surface is covered with an atomic layer deposition (ALD).

Effect

Prevents oxidation and hydroxidation of torsion bars in micro scanner, limits its deterioration and prolongs its operation live

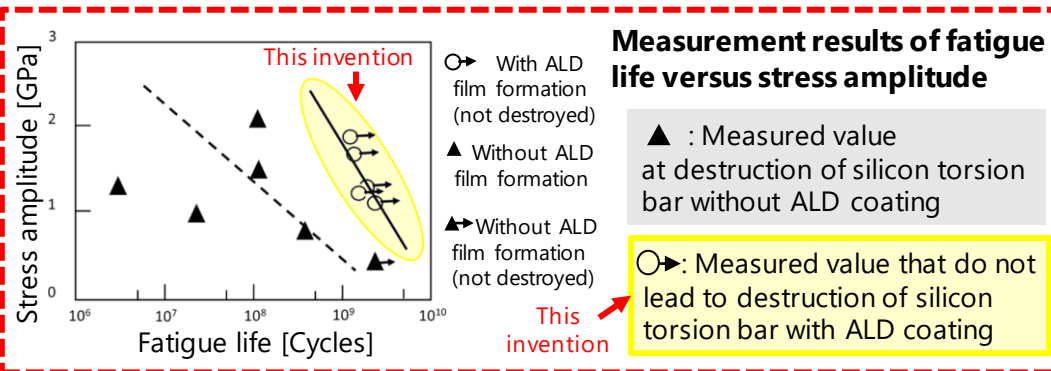
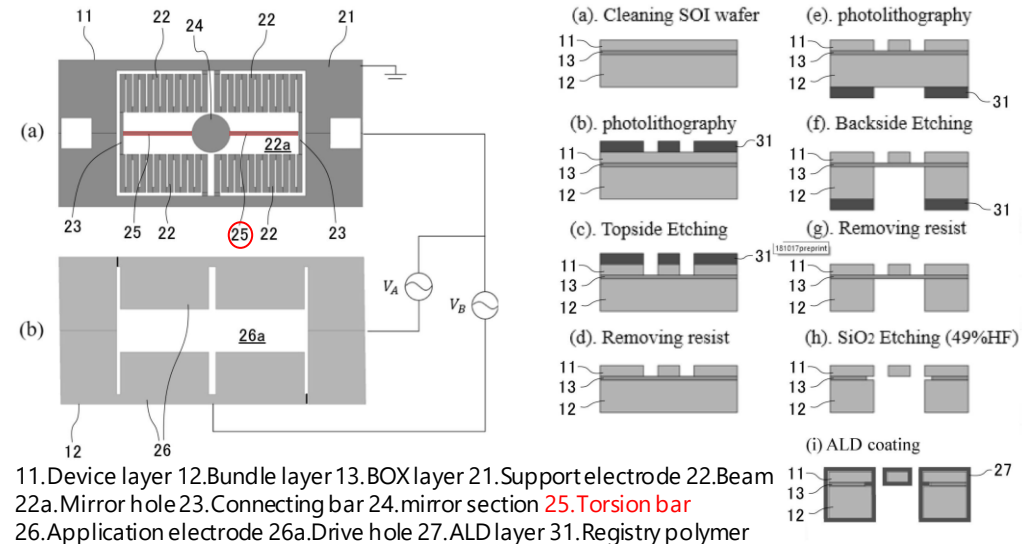
Application

- Laser projector, laser display, optical coherence tomography, LIDAR

Patent Data Sheet

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