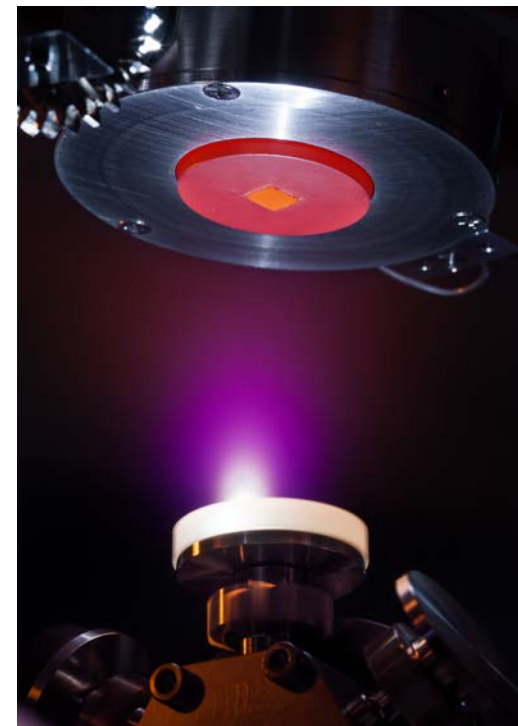


A flexible glass that does not snap

Read the full article at rsc.li/2utdMnT

Most glasses based on silica are brittle, but a new glass made from aluminium oxide has been created that can be stretched and bent at room temperature without snapping.

Silica glass has a lot of empty holes and defects in the atomic structure. These prevent the atoms from moving around easily. In the new glass the atoms are in an amorphous structure – more densely packed, without defects. The atoms can therefore more easily switch places with each other. The scientists made the glass by using a laser to break apart aluminium oxide to form a plasma. This is then cooled down very quickly, so that an amorphous structure forms. One day the glass could be used in flexible and ultra-strong electronic devices. The complexity involved in making the glass currently stops this use.



Pulsed lasers are used in the decomposition process

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1. What is the main raw material for making silica glasses?
2. Silica has a giant covalent structure. Explain why it has a high melting point.
3. Explain how the new glass is flexible like a metal.