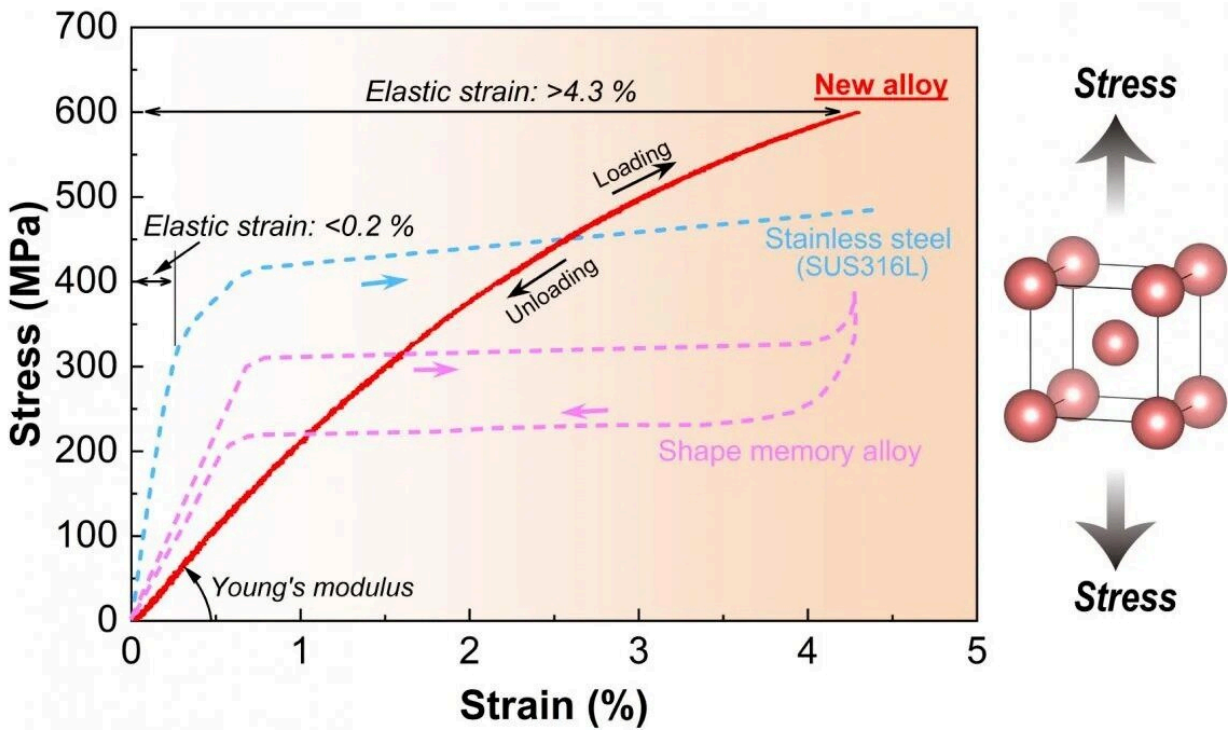


# New bulk metal alloy shows a large elastic limiting strain greater than 4.3%

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The tensile stress-strain curves of the new alloy obtained by loading-unloading tests at room temperature. A large elastic strain and a low Young's modulus of the alloy can be identified. Credit: Sheng Xu et al.

A research group has developed a bulk copper-based alloy boasting the largest tensile elastic strain at room temperature to date.

Even when subjected to certain [levels of stress](#), metals can spring back to their original shape due to elasticity. Materials with large elastic deformation provide greater flexibility in everyday sporting goods and [medical devices](#), and are thus highly sought after.

Theoretically, most metals and [alloys](#) can endure a strain value of about 10%; but this is when the metals are reduced to micro or nano scales. When these metals are in their bulk shape, as they are for most practical engineering applications, the elastic strain plunges to below 1%. Stainless steel, for example, has an elastic strain of

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