MATERIALS

3D-printed device shapes ultrasound

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A specially designed lens can create ultrasound beams with the potential to precisely move, manipulate and destroy cell-sized objects.

Ultrasound beams can be made by firing pulses of laser light at a lens to create high-frequency vibrations. But glass lenses can create only relatively simple wave patterns. Claus-Dieter Ohl and his colleagues at Nanyang Technological University in Singapore used a 3D printer to build polymer lenses in 3D curved shapes. These lenses generated beams just as powerful as those made from glass, but their complex shapes allowed greater control over the beam's focus in space and time.

This could enable complex manipulations of minuscule objects, say the authors.

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