



Extended Data Fig. 9. | The supersonic elastic wavefront generation with excited carrier dependence on TiO₂(010) substrate. a-d, Supersonic elastic wavefront was generated with 400 nm pumping (3.10 eV, above the TiO₂ band gap) with 400 mJ/cm² at **a**, 12 ns and **b**, 25 ns with 100 μm vertical white scale bar. No supersonic elastic wavefront generation with 800 nm pumping (1.55 eV, below the band gap) at 400 mJ/cm² at **c**, 12 ns and **d**, 25 ns. In **a** and **b**, the yellow dashed lines indicate the shock wave, while in **c** and **d**, the orange elliptical regions represent the laser-induced damage areas.