

## Supplementary Material

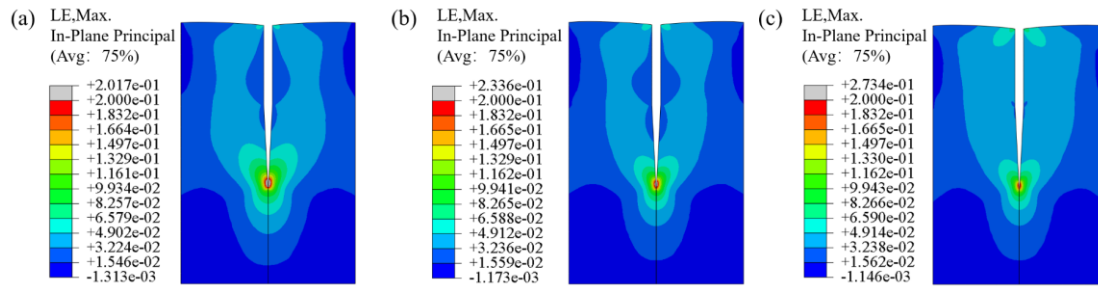


Figure. S1 Strain cloud diagrams at implantation speeds of (a)1 mm/s, (b)2.63 mm/s, (c)5 mm/s.

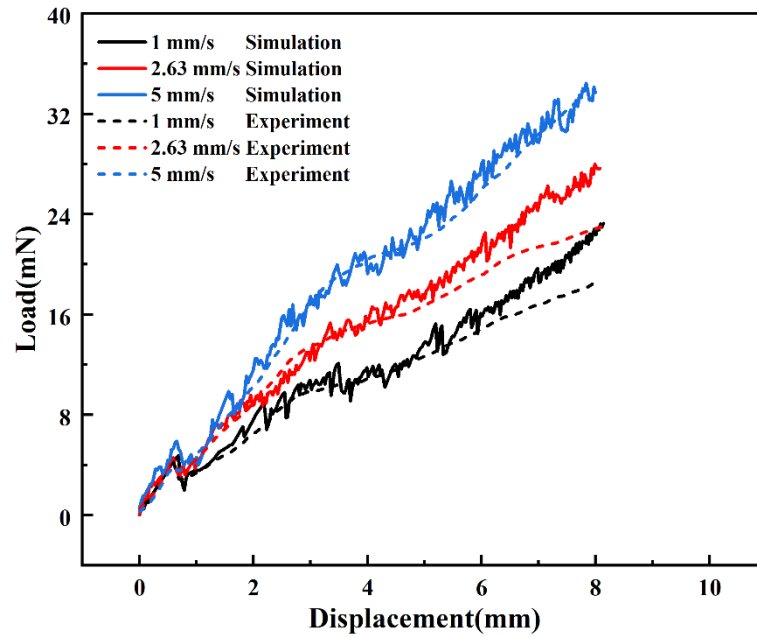


Figure. S2 Load-displacement curves of experiments and simulations under different implantation speeds.