

ULTRASONIC LEADING EDGE FOR LUNAR EXCAVATION TOOLS

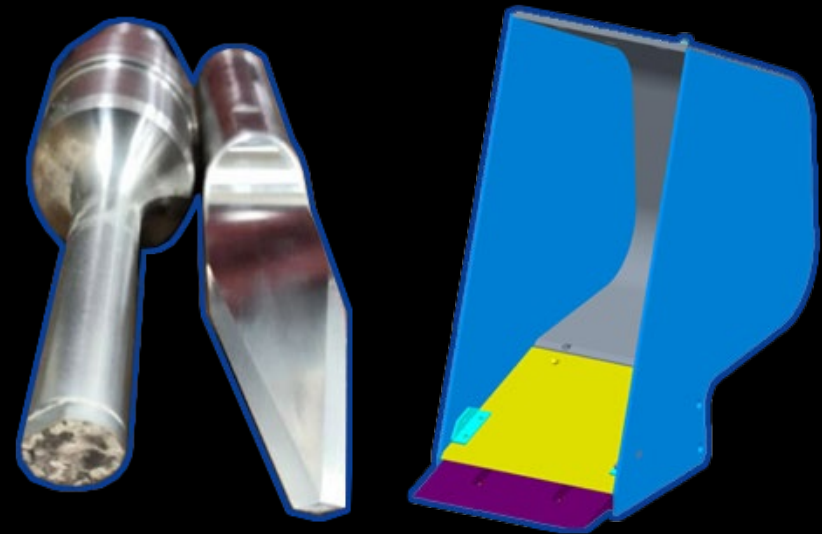
E. T. Rezich, A. Schepelmann, D. J. Gotti, D. L. Linne - NASA Glenn Research Center



Heavy construction and excavation machinery.

- Tools with resonantly vibrating leading edges could significantly reduce soil penetration forces.
- Such tools could decrease the power consumption and mass of lunar excavation systems.

- Regolith and granular ice excavation is critical to produce resources on the lunar surface.
- Current terrestrial excavation equipment designs are not suitable for lunar applications.



Ultrasonic forced vibration tools. L: Vibration probe. R: Bucket concept.

ULTRASONIC LEADING EDGE TOOL DESIGN PIPELINE

