

High Power Longitudinal/Torsional Mode Transducers For Surgical and Dental Applications

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High intensity L-T mode ultrasonic transducers have been used for a variety of industrial applications since the 1960's. Over the past 10 years they have been increasingly used for medical applications including cataract emulsification, tissue/bone cutting, and coagulation. Despite the number of obvious advantages there are significant technology challenges in developing compact ergonomic designs.

The evolution of a dual piezo stack design will be presented together with practical test data including video clips of operational performance. Finite Element Analysis (ATILA®) data will also be presented to visualize the complex modes of vibration as well as calculating the stress and displacements in the component parts.