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finite element analysis simulations of a piezoelectric cymbal
actuator using atila software

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”The piezoelectric ultrasonic cymbal actuator is a well known flexensional type actuator. Because of the actuator’s geometry, the small movements of the piezoelectric ceramic are amplified by the flexensional structure. Simulation of this device was performed using Atila finite element software, which is specially suited for piezoelectric devices. This study will focus on some of the necessary parameters to accurately simulate cymbal actuators and other piezoelectric actuators. The simulations discussed will be compared to actual experimental data. Based on the experimental results the simulations will be reexamined and modifications will be made to increase the models accuracy. Employing this iterative process will promote increased accuracy in future simulations, which would therefore decrease development time and increase productivity.”