MANUFACTURING OF CO-FIRED MULTILAYER PIEZOCERAMIC COMPONENTS FOR HIGH PRECISION APPLICATIONS

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The PI Group develops and produces high-quality piezo components and offers the full range from piezoelectric material to customized integrated systems based on piezoelectric actuators and sensors.

Particularly in the growth markets of medical technology and industrial automation, ever greater demands are placed on the performance and precision of the drive components. In addition to high positioning precision, requirements often include compact dimensions, rapid response time and high reliability. The increasing demands of smaller piezoelectric actuators from medical application or robotics results in innovative progress on miniaturization or precision tooling of these components. PI uses processing techniques from the semiconductor industry to fulfil these requirements by simplifying the integration into the customer application.

Thus, PICMA® multilayer chip and bender actuators in smallest dimension can be designed, which can be used in a very limited space to create motion. The fields of application for those actuators are varied, e.g. micro-diaphragm pumps, precision dosing with nanodispensers and implantable components in hearing aid systems. Furthermore an optimization of the geometrical tolerances of the piezoelectric components makes it possible to realize efficient and flexible robotic solutions with maximum accuracy of actuation. All these smart applications have in common that they use highly precision piezoelectric drives of compact size and therefore low energy consumption.