Piezo Components for Microfluidics in Medical Technology: White Paper Provides Exciting Insights

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Piezo technology is particularly suitable for fulfilling specific requirements of active microfluidics in wide-ranging medical technology applications. A new white paper from PI Ceramic describes the special characteristics of piezo actuators and their potential use cases in microfluidics.

Microfluidics technologies, usually hidden deep inside their applications, form the backbone that supports the functionality of devices and systems in medical technology. Examples include nebulizers for aerosolization in respiratory illness therapy, the reliable introduction and preparation of samples in point-of-care analysis instruments for in vitro diagnostics, and the generation of precise droplets in the production of patient-specific pharmaceuticals. In these and many other examples, piezoelectric actuators form the heart of the application. Setting the foundation for the versatile application possibilities of piezoceramics are characteristics such as precision, extreme motion dynamics, long lifetime, compactness, and energy efficiency. Adding to this, decades of experience make PI Ceramic exceptionally qualified to manufacture actuators that achieve special effects in various forms such as longitudinal, bender, and tube actuators.

“Piezo actuators are ideally suited for use in microfluidics applications. In fact, they're often what makes these applications possible in the first place,” explains Dr. Patrick Pertsch, Managing Director of PI Ceramic. He emphasizes, “Piezo technology is far from having been exploited to its full potential. Applications such as single-cell handling with what are known as acoustic tweezers as well as biological tissue synthesis with ultrasound are examples of developments that are still in their infancy.”

PI Ceramic's new white paper explains the fundamentals of piezo technology and outlines the application potential in microfluidics as well as the limitations of the technology.



The white paper “Piezo Technology for Microfluidics” can be downloaded for free from this [landing page](https://www.piceramic.com/en/mastering-challenges-of-microfluidics?_gl=1*1dm94pd*_ga*MTcxOTQ0NTU2My4xNzA2NTI1MDAy*_ga_HW2KSSYHZN*MTcwNjUyNTAwMS4xLjEuMTcwNjUyNjM1MS4wLjAuMA..) (Higher Speed and Throughput for Microscale Fluid Handling: Mastering Microfluidic Challenges with Piezo Technology) of PI Ceramic.

PI Ceramic in Brief

Redefining the limits of what can be measured and moved, together with our customers: As a worldwide partner with over thirty years of expertise, PI Ceramic develops and manufactures piezoceramic components and subsystems for applications in the areas of medical technology, industrial ultrasonic sensors, and precision dosing. At the site in Lederhose (Germany), one hundred employees out of the current total of more than 400 are engineers. PI Ceramic is part of the PI Group, the innovation and market leader in high-precision positioning technology.

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