

Update on the Development of Piezoelectric Single Crystals (2025)



By Jian Tian, Weiguo Zhang, Kyle Grove, Tom Vencill.

Abstract

PMN-PT and PIN-PMN-PT single crystals are widely utilized in premium medical ultrasound imaging applications. However, their adoption in underwater application has been limited due to concerns regarding certain crystal properties, property uniformity or higher cost compared to the traditional PZT ceramics. To address these challenges and further expand crystal applications, we have been developing crystal growth techniques to improve crystal quality, and to increase crystal growth efficiency and production capacity. New growth techniques enable crystal grow with a large diameter, or a longer usable length with improved property uniformity along the crystal growth direction, while maintaining similar or better property uniformity within a wafer. Additionally, we are developing the next generation crystals with enhanced properties by introducing new crystal compositions or dopants to existing crystal formulations. Results from new crystal compositions and dopants will be presented.

Contact Information

[Contact Page](#)

(www.ctscorp.com/Contact-Us/)

CTS Corporation

4925 Indiana Avenue

Lisle, IL 60532, USA

Web: www.ctscorp.com

E-mail: sales@ctscorp.com