

Development of microsystems based on PZT thick film technology for high frequency ultrasonic transducers and MEMS

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In recent years there has been a drive towards developing smaller, lower cost electronics. This drive is obviously present in the piezo industry and it calls for novel manufacturing techniques such as thin and thick film technology.

This talk will touch on the development of thick film technology over the last 10-20 years and showcase applications from academia and industry with focus on the business. Over the years, several applications has been proposed and realised such as miniaturised accelerometers, flow cells, ultrasonic transducers, energy harvesting devices etc. and some have been successfully commercialised.

The most successful business case within Meggitt is the high frequency ultrasonic transducer for medical imaging, currently used in a cosmetic application. The thick film technology offers ultrasonic devices with competitive and in some cases superior properties compared to devices made in the conventional way and the manufacturing lends itself to high volume and low cost. The development and the functionality of the imaging transducer, associated with the unique manufacturing technology will be presented along with technical characteristics and imaging properties.