# PZT thick film for high frequency ultrasonic applications
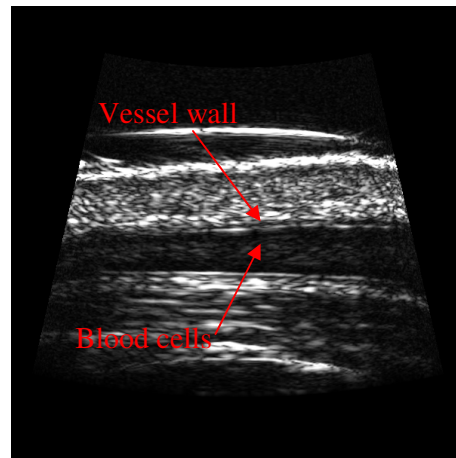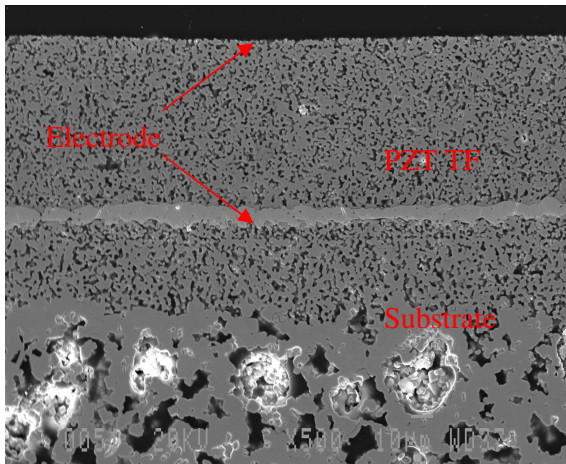
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Within the field of high frequency ultrasound there has been a call for a new technology for fabrication of devices working at higher frequencies and suitable for production in large numbers at a low cost. The technology of screen printing is well suited for this since the manufacturing process is well known and easy to implement. The resulting thick film also exhibit excellent piezoelectric as well as acoustic properties which is favoured in medical imaging applications. However, screen printing PZT thick film structures is limited to flat substrates. In order to deposit thick film structures on topographic substrates a different approach is needed.

Pad printing is well known as a means to print graphic illustrations or symbols on curved substrates such as tubes and spheres. In our work this technology has been adapted to produce focused PZT thick films on curved substrates. The PZT paste is originally optimised for use in screen printing but by tuning the rheological properties of the paste by changing the amount of organic vehicle and solvents, the paste can be used for pad printing as well. The pad printed thick films exhibit the same excellent properties as screen printed thick films and have been used as transducers in a medical imaging system giving high quality images of organic structures.

The poster can be found at the following URL: http://www.insensor.com/images/Poster01.pdf