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**Visualization of transducer fields using a two-dimensional
acousto-optic sensor**

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In this paper we will report on the use of a novel two-dimensional acousto-optic (2D AO) sensor as a simple, fast and cost-effective method of mapping transducer fields, which could be useful for quality control and quality assurance (QC/QA) of diagnostic and therapeutic transducers. This capability could be particularly useful for monitoring power output of therapeutic transducers prior to administering ultrasound based thermo-therapy treatment. It may also provide a quick tool for determining beam position and other transducer field characteristics such as propagation angle, beam diameter, divergence, and cross-sectional uniformity. Current standard transducer field mapping practices requires point-by-point scanning over a ball reflector or a hydrophone to map the transducer field. This approach is tedious, requiring hours of scanning time to generate the full cross-sectional and axial field distributions. The 2D AO system could overcome some of the drawbacks of current conventional scanning methodologies.