

NEW MATERIALS FOR TRANSDUCERS AND ARRAYS

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ABSTRACT

The need for increased sensitivity in ASW arrays has resulted in a trend towards larger array apertures, with the result that both the transducer and the support structure are coming under increased scrutiny with regard to weight, target strength implications, self noise and above all cost. In response, a number of new transducer materials are being offered for use particularly in hydrophones, and there is increasing demand for polymeric baffle systems to replace steel. The performance characteristics of new ceramics, ceramic composites and piezoelectric polymers are discussed and future application areas indicated. Similarly, the required characteristics of polymers for outboard applications are described and the techniques adopted to develop suitable materials and test their acoustic performance are discussed.