

Supplementary Material

FPCB as an Acoustic Matching Layer for 1D Linear Ultrasound Transducer Arrays

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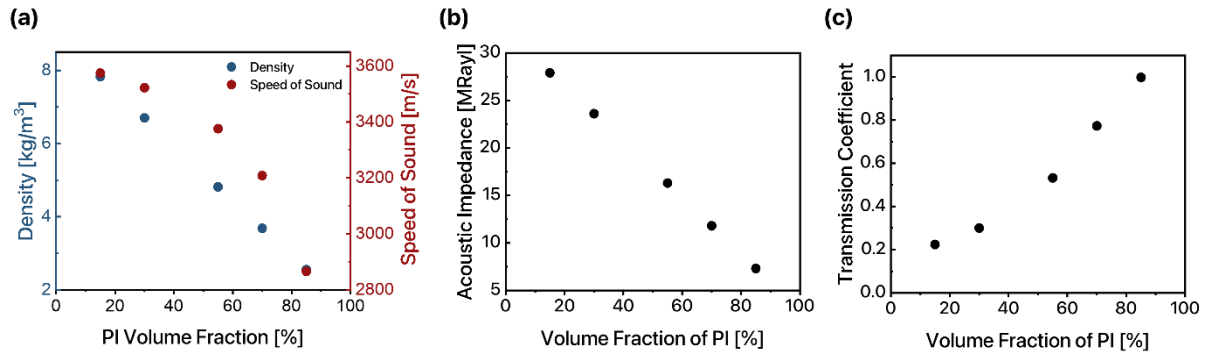


Figure S1. Theoretical acoustic properties of the FPCB matching layer composed of different volume fractions of polyimide and copper: (a) density and speed of sound, (b) acoustic impedance, and (c) transmission coefficient.

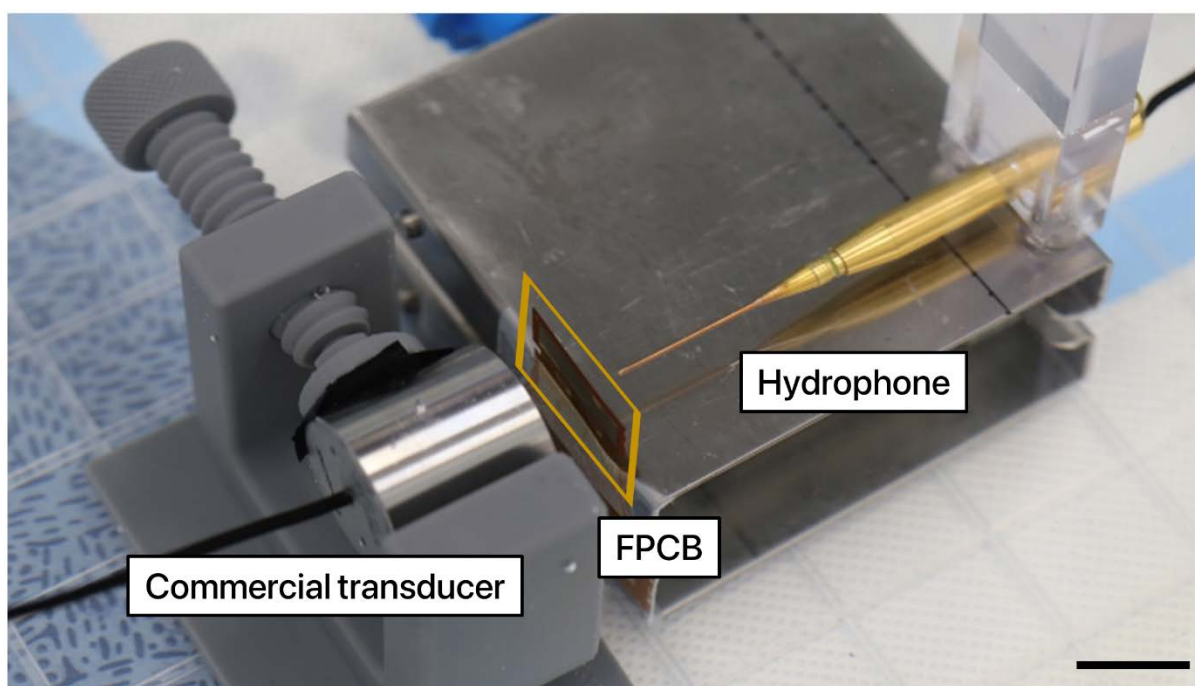


Figure S2. Photo of the experimental setup for acoustic characterization of the FPCB matching layer (scale bar: 2 cm).

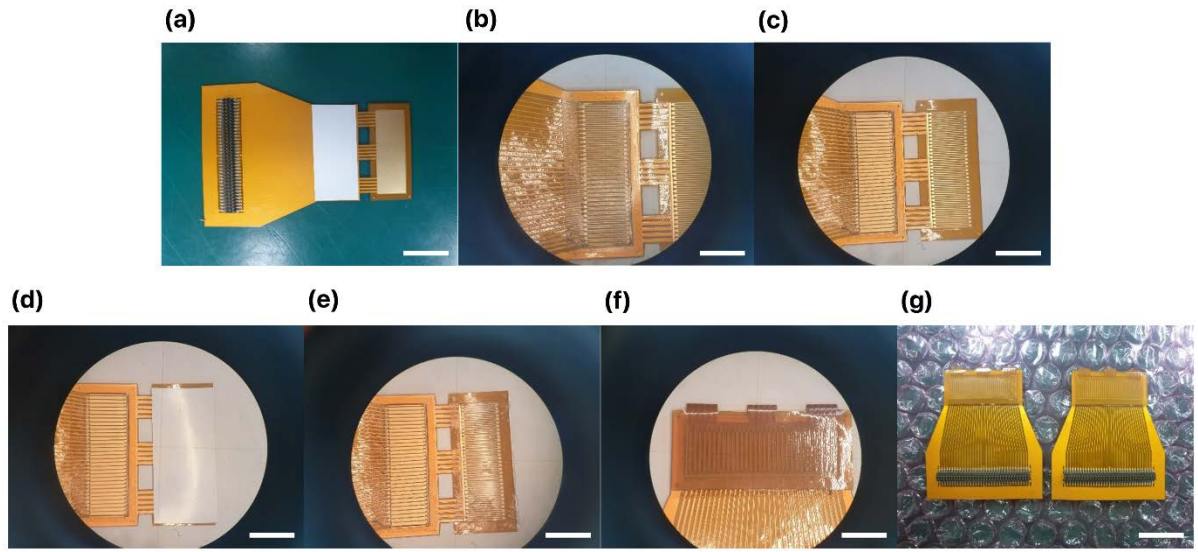


Figure S3. Optical images of the packaging steps: (a) ACF lamination on the FPCB substrate (scale bar: 2 cm), (b) removal of ACF space film from the FPCB substrate (scale bar: 7 mm), (c) ACF pre-bonding and delamination of the UV film from piezoelectric elements (scale bar: 1 cm), (d) ACF lamination on the FPCB matching layer (scale bar: 1 cm), (e) removal of ACF space film from the FPCB matching layer (scale bar: 1 cm), (f) final ACF bonding of the FPCB matching layer and piezoelectric elements (scale bar: 7 mm), and (g) successfully packaged devices (scale bar: 2 cm).