

Supplementary information

Coupled D33 Mode Based High Performing Bio-inspired Piezoelectric MEMS Directional Microphone

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1. Figure S1

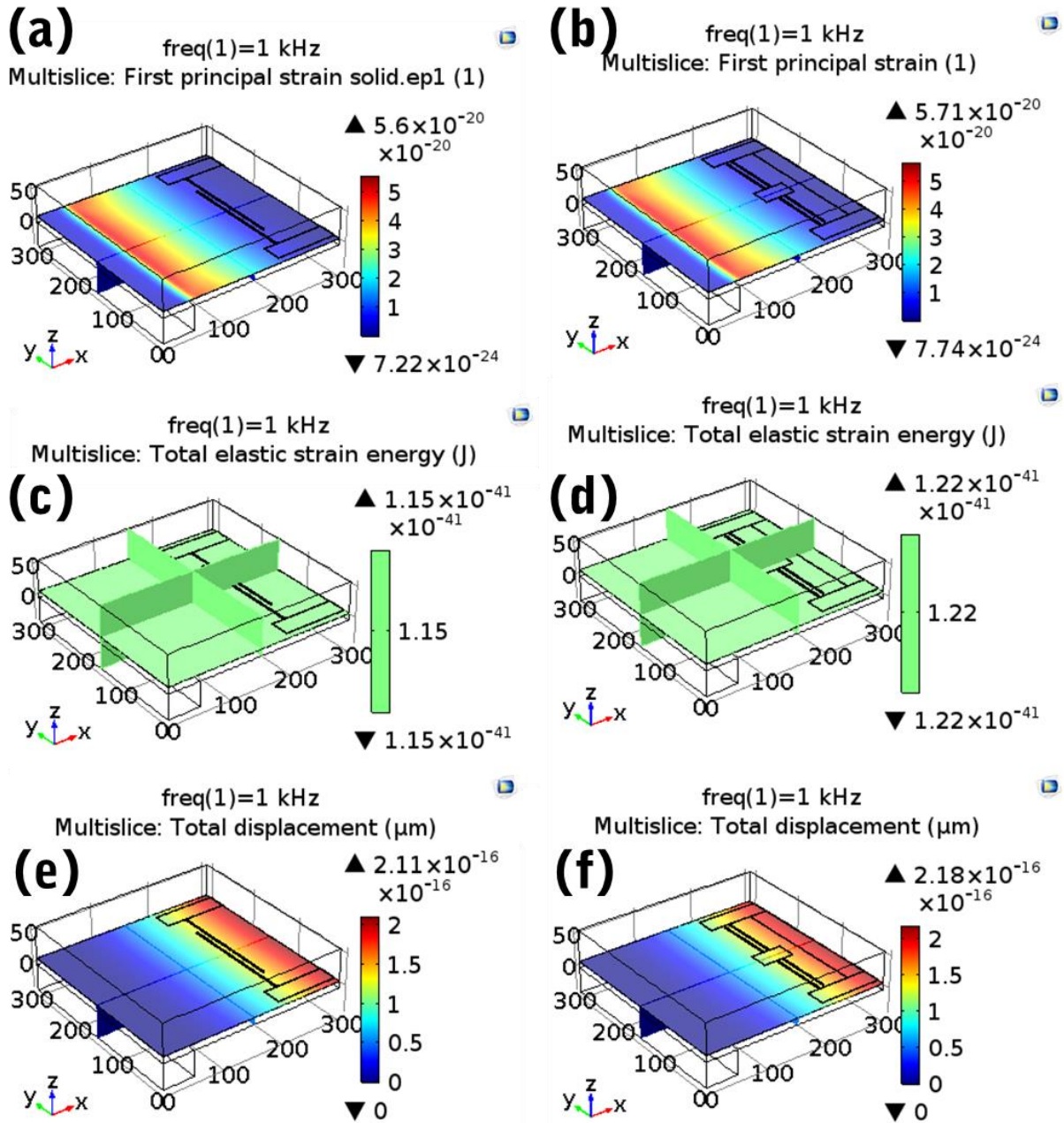


Figure S1. FEM COMSOL simulated results, (a) first principal strain of the unit cell of regular D33 mode, (b) first principal strain of the unit cell of proposed D33 mode, (c) elastic strain energy (J) of the unit cell of regular D33 mode, (d) elastic strain energy (J) of the unit cell of proposed D33 mode, (e) displacement of the unit cell of regular D33 mode, and (f) displacement of the unit cell of proposed D33 mode.

2. Figure S2

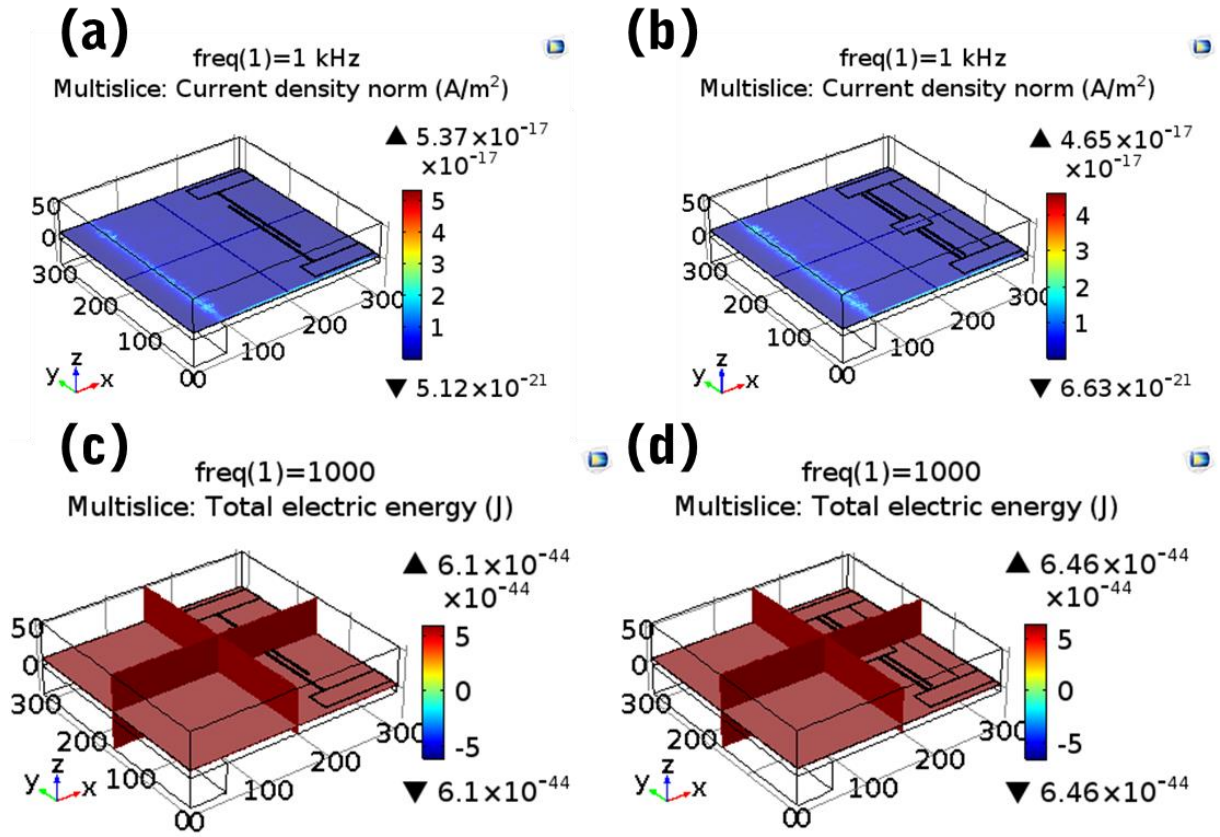


Figure S2. FEM COMSOL simulated results, (a) current density of the unit cell of regular D33 mode, (b) current density of the unit cell of proposed D33 mode, (c) total electric energy of the unit cell of regular D33 mode, and (d) total electric energy of the unit cell of proposed D33 mode.