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A new piezoelectric energy harvester using two beams with tapered cavity for high power and wide broadband

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Highlight

- A novel piezoelectric energy harvester featuring two beams with tapered cavity is proposed to enhance both the generated power and operating frequency.
- The wider operating frequency range is achieved by adjusting the mass ratio the bigger beam with cavity and smaller beam.
- An analytical model of each section of the adopted beam structures is formulated using Euler Bernoulli beam theory with Bessel functions and simulated.
- It is validated that the results between the analytical model and measured agree well in wider operating frequency range containing both the first and second mode.

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