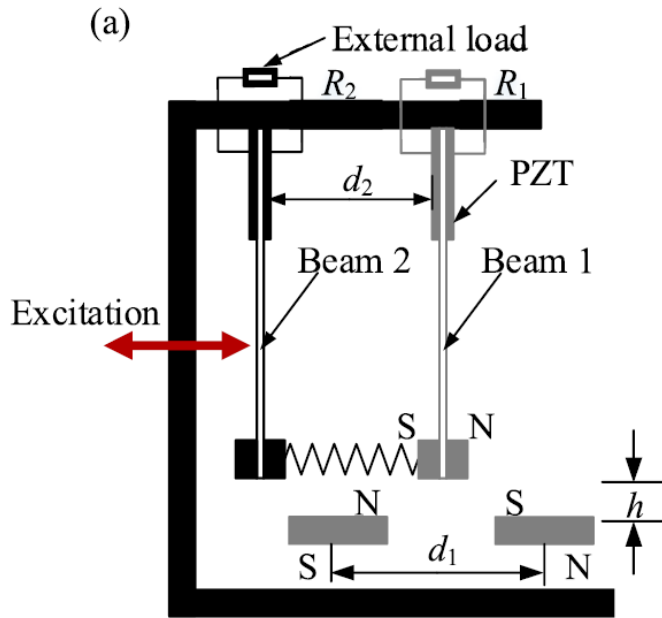


Vibration energy harvesting is a concept to scavenge energy from ambient mechanical sources such as natural sea waves, aerodynamic motions and also technical machine vibrations. This process can be used to provide charging of small devices for condition monitoring and remotely located sensors. Nonlinear modelling has obvious advantages with respect to broadband frequency range and determination of energy direction flow. Nonlinear systems can exhibit multiple solution including periodic, multi-periodic, and chaotic solutions depending on system parameters and initial conditions. The effectiveness and power output of the proposed harvesting devices can be dependent on the solution kind. The present project deals with the parametric excitation of the nonlinear energy harvesters. Additional manipulation in the electrical circuit to optimize the power output will be also considered.



Example of a device with kinematic excitation, J. Sound Vibrat. 561 (2023) 117822.