Is magnetic levitation solar power generation

Can a magnetically levitated me generator harvest energy from environmental vibrations?
In summary, we have investigated a magnetically levitated ME generator for energy harvesting from environmental vibrations. The magnetic levitation system overcomes the limitations of the traditional cantilever-based structures. The use of the Halbach array improves the output power of the generator due to the specific arranged magnets.

What is a magnetic levitation system?
The magnetostrictive layers are magnetized along the length of the transducer, and the piezoelectric layer is polarized along the thickness direction. The magnetic levitation system is realized by NdFeB magnets. The diameter and height of the top magnet are 14 mm and 8 mm, respectively. The bottom magnet has the same size as the top magnet.

Are magnetically levitated me structures suitable for energy harvesting from low-frequency vibrations?
Magnetically levitated ME structures were presented for energy harvesting from low-frequency vibrations [, ,]. A lower spring rate can be achieved compared with the cantilever-based devices due to the nonlinear magnetic force.

What are the different types of magnetic levitation architectures?
Although several architectures using magnetic levitation have already been proposed,research has been mainly conducted in the scope from mono-stable to multi-stable architectures (bi-stable,tri-stable and quad-stable harvesters),,. Multi-stable approaches require wider structures and additional magnets.

How is polarity arranged in a levitating magnet?
The polarity of the magnets is arranged in a way that the levitating magnet experiences a repulsive forcedue to the fixed magnets,which are attached to the end extremities of the container. A portion of the container is wrapped in a multilayer coil around its outer surface .

Why do we use a magnetic levitation mechanism compared to cantilever-based devices?
A lower spring ratecan be achieved compared with the cantilever-based devices due to the nonlinear magnetic force. The employment of the magnetic levitation mechanism eliminates the demand on a mechanical spring and heightens the tolerance to external exciting accelerations.

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