

WAYS TO GET ENERGY FROM THE STEPS

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Today shows us how important it is for humanity to do everything possible to extract energy from the world around us without harming it since in this case nature shows us that it is also strong and capable of giving a tough answer. There are many large and cumbersome technologies in the world, such as wind turbines or large fields of solar panels, but they are very expensive and cannot be used everywhere and in large crowds. It is crucial to take advantage of the niche opportunities that are right under our feet right now.

The East Japan Railway (JR East) is experimenting with the latest technologies to tap into the energy of passengers' footsteps. Tokyo's busiest stations have a special tile with piezoelectric elements that converts mechanical energy into electrical energy when people walk on it. The project was launched in 2007 and has continued to develop ever since. The energy obtained in this way is used to power station displays and other low-power devices, with the possibility of further expansion to automatic turnstiles. Piezoelectric Tile technology, which generates energy from steps, has many advantages and can be implemented in various aspects of our lives. A more detailed description of its advantages, and application features are provided further.

Advantages of Piezoelectric Tile technology:

1. Eco-friendliness: generating energy from the steps does not require fossil fuels and does not cause harmful substances to be released into the atmosphere. This makes the technology absolutely environmentally friendly. In large cities with high energy consumption, such a source can significantly reduce the load on traditional energy systems.

2. Efficient use of natural energy: the technology allows you to convert mechanical energy that is normally lost (for example, pedestrian steps) into electrical energy. This ensures efficient use of energy and reduces the need for other energy

sources.

3. Reduction of energy costs: piezoelectric tiles can be used to power lighting systems, advertising displays, electronic devices, or even charge mobile phones. This reduces energy costs in places where these tiles are installed, such as train stations, shopping malls, office buildings, etc.

4. Increasing energy independence: installations with piezoelectric elements can be integrated into autonomous power systems, which ensures the energy independence of facilities in remote or hard-to-reach places where access to conventional energy sources is limited.

Ways to implement technology in everyday life:

1. Public spaces: installing piezoelectric tiles in high-traffic areas such as train stations, airports, shopping malls, stadiums, and subways will allow energy to be used by a large number of pedestrians. For example, Tokyo Metro stations have already implemented a technology that allows them to generate electricity for lighting.

2. Educational institutions: in schools and universities, you can install tiles in corridors or on playgrounds where students are actively moving. This not only generates electricity but can also be used to teach students about renewable energy.

3. Parks and sports grounds: installing piezoelectric tiles on treadmills or tennis courts will generate electricity from people's physical activity. This energy can be used to light parks or power irrigation systems.

4. Urban infrastructure: piezoelectric tiles can be used on road surfaces to generate energy from vehicles that move on roads. It can help power street lighting, road signs, surveillance cameras, etc.

5. Shopping centers and offices: installing such tiles in crowded areas, such as corridors or stairs, will reduce energy consumption and energy costs.

Therefore, the introduction of piezoelectric tiles for energy generation is a promising solution that can significantly reduce energy costs and promote the use of renewable energy sources in the modern world.

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