

A system for harvesting electrical energy during ski touring

Background

Energy harvesting is the process by which electric energy is derived from sources like ambient temperature, vibration, or airflow, and used for small, wireless autonomous devices. Sports is a very important field in this context. Muscle-produced kinetic energy results in relative motion of parts of the body and in material deformation. This can be transformed into electric energy by means of induction or deformation of piezo elements.

Invention

The athlete's motion can be used for the production of electric energy so that energy reservoirs are recharged continually, and therefore don't have to be replaced or recharged by external charging units.

In the present invention the mechanical energy of the pivoting foot movement in nordic skiing is transformed into electric energy. By this means the power supply of electric components can be guaranteed.



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Advantages

There are current energy harvesting applications for nordic skiing that use for example the vibration of the skis during the descent. However, most of the time is spent in climbing. As the descent is in the end of the activity energy reservoirs could be empty before there is a possibility for recharging. This can be prevented by the new energy harvesting system.

Developmental Status

Idea

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Origin

Technische Universität München

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Offer

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