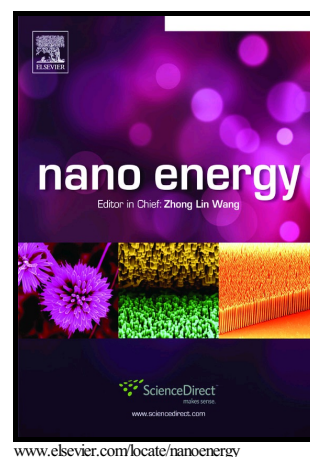


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An electret film-based triboelectric nanogenerator with largely improved performance via a tape-peeling charging method

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Abstract

Harvesting energy from the environment is a sustainable solution for powering decentralized sensor networks, Internet of Things systems, etc. In this work, a triboelectric nanogenerator (TENG) based on the fluorinated ethylene propylene (FEP) electret film is investigated to generate electricity from mechanical motions in the environment, and its working principle is explained with a variable capacitance model. For the first time, the validity of this model is verified with a capacitor discharge curve fitting method. Based on this model, the maximum output energy of the TENG per working cycle is calculated, which could be useful for comparing the property of TENGs working under different

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