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## Parametric Analysis and Design of SDOF Vibration-Type Triboelectric Generator

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A triboelectric generator uses the principles of static electrification and electrostatic induction to convert mechanical energy into useful electrical energy. In this work we study a single degree of freedom (SDOF) vibration type triboelectric generator that is initiated by a vibrating source at its base. The system is modeled in Abaqus and the design parameters are systematically explored by their effect on the output. The relationships between the parameters: input force, input frequency, mass, spring stiffness and gap between the plates, are analyzed. Finally, based on initial experiments, and simulation results, a design methodology is formulated. The methodology will provide guidance for application specific design of reliable and effective vibration type triboelectric generators.

**Keywords:** Vibration, Design, Triboelectric Generator

