Brushless Maglev Engine: Design Improvements, Physical Model, Practical Application

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Mendocino motor is an effective, reliable, and environmentally-friendly converter of solar energy into mechanical energy, working almost without friction. Such engine’s considered to have low efficiency, but we assume that if the solar cells don’t reduce the benefits of the idea, it can be in demand. We developed and tested 16 engines on the idea of mendocino motor on square(12) and hexagonal(4) rotors with different designs of the magnetic support and the rotor. The maximum rotating frequency shown by the final models on a hexagonal rotor was experimentally increased by 251.3%. We used end-stop on the clock ruby for a motor on a square rotor that with lubrication gives an increase of 81.6%. We investigated the following characteristics of the engines: 1)Mechanical: a)behavior of the rotor during the acceleration period and its work with steady frequency; b)forces acting on the shaft, their dependence on the number of magnets and the distance between them; c)the dependence of the magnetic induction of magnets on the distance; d)the dependence of the Ampere force on the number of magnets in the base; e)the dependence of rotation frequency on illuminance; 2)Electrophysical: a)Volt-Ampere characteristic and the dependence of current on illuminance for solar cells; b)the coefficient of conversion (of light energy into electricity) in the solar cells; 3) Power: a)the moments of inertia; b)the efficiency of the rotor (separately from electricity) and the whole engine (from light). Our experiments, physical model prove the effectiveness of the Mendocino motor idea and the possibility of its practical application.

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