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POWER GENERATION BY SUSPENSION SYSTEM

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ABSTRACT

An electromagnetic linear generator and regenerative electromagnetic shock absorber is disclosed which converts variable frequency, repetitive intermittent linear displacement motion to useful electrical power. The innovative device provides for superposition of radial components of the magnetic flux density within a coil winding array. Due to the vector superposition of the magnetic field and magnetic flux from a plurality of magnets, a nearly four-fold increase in magnetic flux density is achieved over conventional electromagnetic generator designs with a potential sixteen-fold increase in power generating capacity.

As a regenerative shock absorber, the disclosed device is capable of converting parasitic displacement motion and vibration encountered under normal urban driving condition to a useful electrical energy for powering vehicles and accessories or charging batteries in electric and fossil fuel powered vehicles. The disclosed device is capable of high power generation capacity and energy conversion efficiency with minimal weight penalty for improved fuel efficiency.