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Ratchet flywheel regenerative system to enhance energy captured for electric vehicle

AIP Conference Proceedings **2187**, 020040 (2019); <https://doi.org/10.1063/1.5138295>Agung Prijo Budijono^{a)}, I. Nyoman Sutantra^{b)}, and Agus Sigit Pramono^{c)}[View Affiliations](#) [View Contributors](#)

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ABSTRACT

Regenerative Braking System (RBS) converts kinetic energy into electrical energy by using a motor and functions as a generator when decelerations occur. Regenerative braking is an effective alternative to increase the driving range of a vehicle and can save around 8% - 25% of the total energy used by a vehicle. The purpose of this research is to produce a design of the Ratchet Flywheel Regenerative System and its system topology. The design of this system is to optimize the download of vehicle kinetic energy based on the duration of energy transfer that occurs. This study focuses on the flywheel energy download system and is done by numerical simulation using MATLAB software. The method to be designed is to apply of ratchet flywheel topologies.

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