CURRENT COLLECTOR-FREE INDEPENDENT BATTERY RAILWAY VEHICLE

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Concept Background

- Normal electric trains require external electrical infrastructure to obtain power supply.
- Battery trains (BEMU) has on-board batteries to supply power independently.

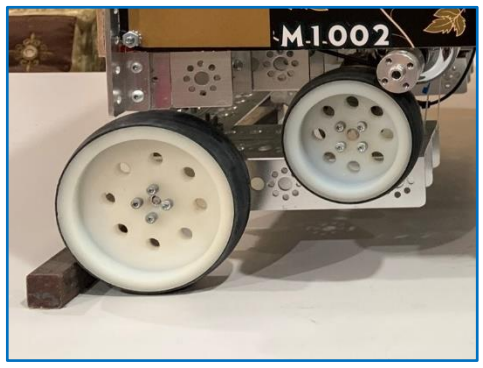
BEMU

MAKE IT MORE INDEPENDENT AND CHEAPER TO OPERATE

- Battery trains (BEMU) requires external charging infrastructure to charge their batteries when empty.
- Hence, it is generally very costly to operate electric trains.

CHARGING INFRASTRUCTURE

Why Is It State of the Art?



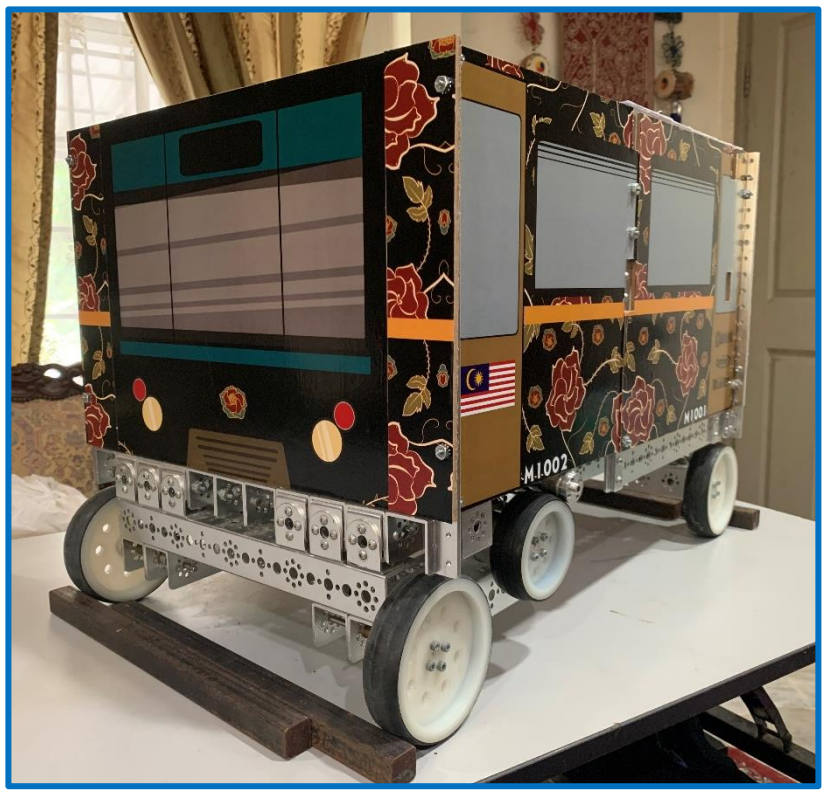
- The railway vehicle is able to generate its own power supply and does not depend on external infrastructure.

Originality and Inventiveness

- There are <u>no such</u> railway vehicles that can produce and store their own power supply.
- Most railway vehicles either <u>just carry their own power source</u> or <u>obtain from external infrastructure</u>.
- RoSIE <u>generates its own power supply</u> and <u>store in its on-board batteries</u>.
- RoSIE is independent of external electrification infrastructure which <u>have the potential to reduce operating costs</u>.

Concept Image and Characteristics

RoSIE



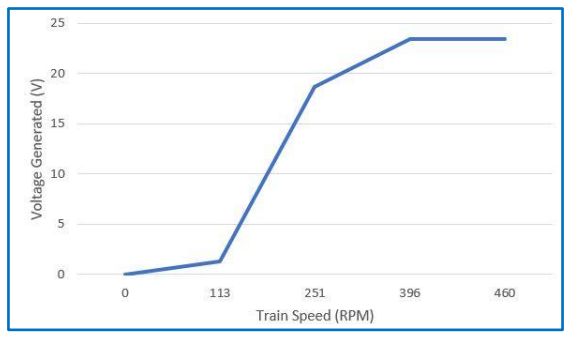
Status of Innovation

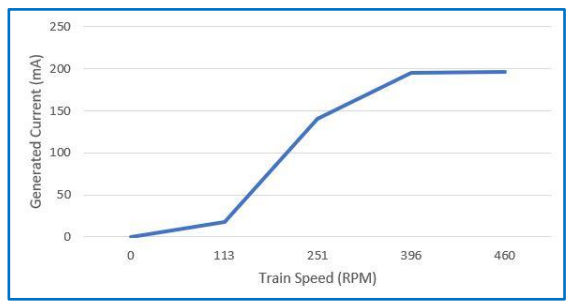
- Technology Readiness Level: *TRL 2*
- This concept railway vehicle was designed to understand on how a modified perpetual machine can generate and supply power to electric railway vehicles.
- This railway vehicle was made by an undergraduate student for his final year project course.

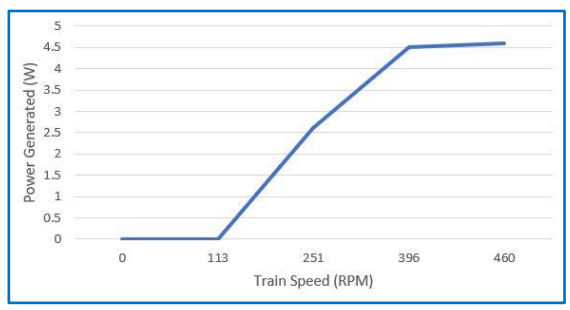
Potential Market

- Train operating companies all around the world <u>may be interested</u> in purchasing this railway vehicle.
- This is because it is <u>expensive to operate railway systems</u> due to the high number of infrastructures.
- With RoSIE, railway operating companies <u>may be attracted to purchase and develop this concept train</u> to reduce operating costs and increasing profits in the long run.

Results

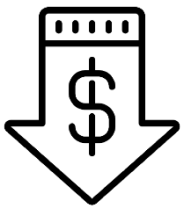




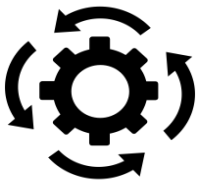


Benefits and Applicability

Environmentally-friendly since it relies solely on electrical power.



Potentially to reduce railway development and operation cost.



Maintaining efficiency and reliability in railway operations.

Environmental Impact

Environment remains clean as the railway vehicle does not emit pollutants.

Little to no noise pollution due to lack of mechanical parts in the railway vehicle.

Less infrastructure is needed to be built to supply power to the railway vehicle.