

# GRIDTECH-19

**Competition Description-** Gridtech19 is organized by Power Grid Corporation of India Limited Supported by Ministry of Power Govt. of India. At Gridtech19 there were total 166 companies across the world that were also present like- Powergrid, Sieyuan (China), Prosoft-Sistemy (Russia). Some of them (POSO, ABB, POWERGRID etc.) came to see our project. There were in total 170 teams across India who sent their project description to Power Grid out of which there union selected 70 projects. From the 70 projects, Only 25 projects were selected to present their projects at Gridtech19. EEE departments students were among these 25.

## Project Title – Power Generation through Speed Breaker

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**Mentors Prof. (Dr.) Rajveer Mittal (HOD) , Prof. (Dr.) S. S. Deswal (Dean)**

All 25 projects were awarded with Shields, Certificates & Cash prize of Rs. 20,000 and MATES management also rewarded us the same.

**Project Description** - Project uses simple drive mechanism such as rack and pinion assembly. Mechanical energy is converted into electrical energy with the use of prime movers. The drive mechanism is comprised of rack and pinion assembly and shafts. The mechanical energy in the form of rotations are given to a Stepper motor. This project explains the mechanism of electricity generation from speed breakers. The vehicle load acted upon the speed breaker system is transmitted to rack and pinion arrangements. Then, reciprocating motion of the speed-breaker is converted into rotary motion using the rack and pinion arrangement. Shaft of the motor is coupled to the rack and pinion arrangements. The rotor which rotates within a static magnetic stator cuts the magnetic flux surrounding it, thus producing the electro motive force (emf). This generated emf is then sent to an inverter, where the generated emf is regulated. This regulated emf is now sent to the storage battery where it is stored during the day time and can be used in night time for providing power to street light. The output of the generator will vary according to the traffic density and location of the setup. A flywheel installed at the rotor end of the generator will make the energy come in as damped if not continuous wave instead of pulse signal as and when the mechanism is triggered.

