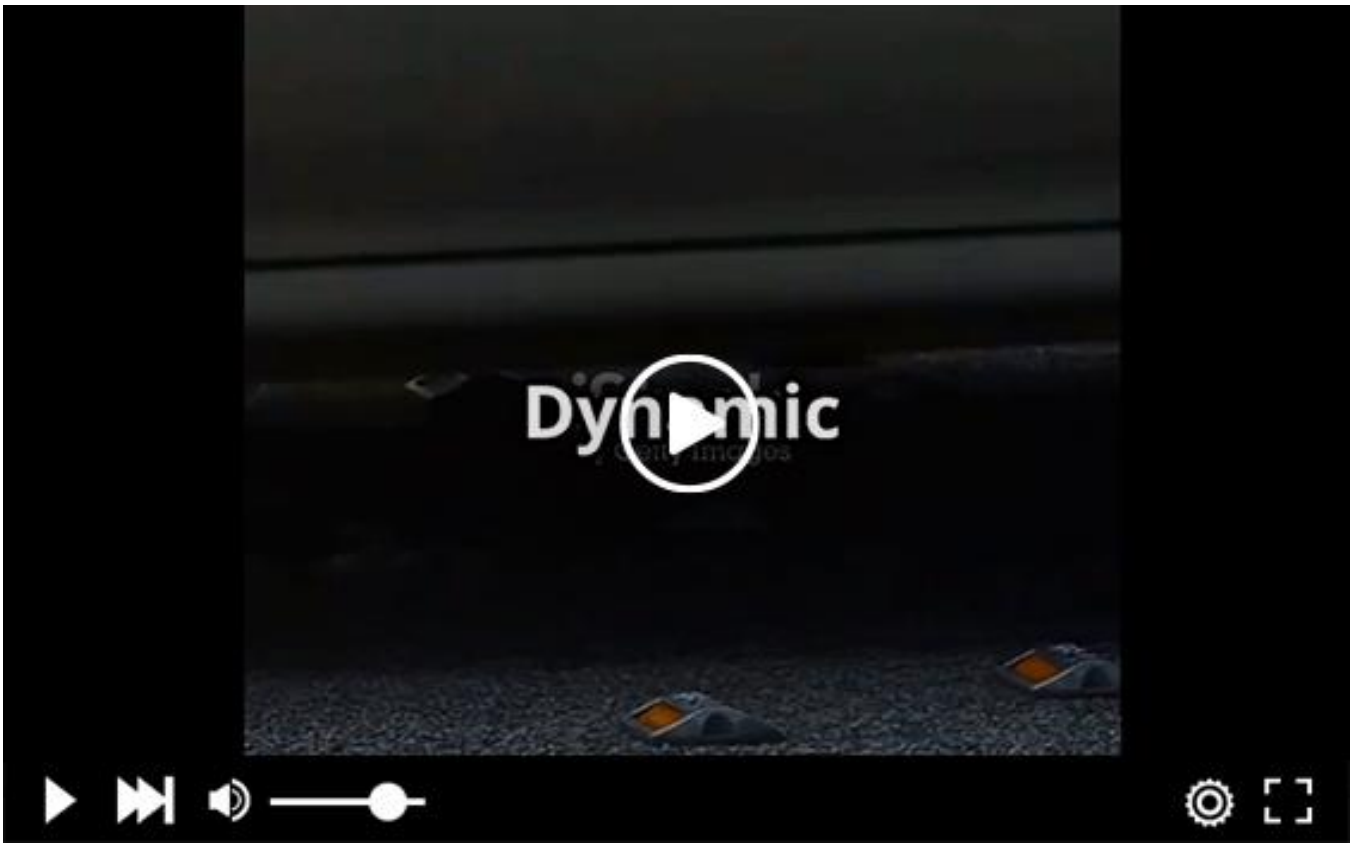
Entry 25 – Senior



Part 2: Explanation of the Idea/Invention

What is the problem you are addressing?

Urban areas consume significant amounts of electricity, much of which is used to power public infrastructure such as lighting and communication systems. At the same time, there is a large amount of untapped kinetic energy generated by people walking through these spaces. Capturing this energy could reduce the dependency on the grid and decrease emissions associated with traditional power generation.

What is your idea?

The idea is to create "Dynamic Kinetic Energy Harvesting Tiles" that can be installed in high-traffic public spaces like sidewalks, plazas, and transit hubs. These tiles would convert the kinetic energy from footsteps into electrical energy, which would be stored in localised batteries or directly used to power nearby public infrastructure.

How does it work?

The tiles are embedded with piezoelectric materials or electromagnetic systems that generate electricity when pressure is applied by people walking on them. As pedestrians move across the tiles, the pressure from their footsteps generates energy, which is captured and stored in

integrated batteries or capacitors. This stored energy can then be used to power streetlights, digital displays, Wi-Fi hotspots, or even small EV charging stations located nearby. The system is designed to be modular and scalable, allowing it to be implemented in a variety of public spaces, contributing to energy conservation and reducing urban carbon footprints.