

## E-POD

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### ABSTRACT:

When there is rigorous research to make intricate changes in Internal Combustion engines and Electric mobiles, there is always a search for an alternative mode of transport. Opening into a venture of efficient and economical mode of transportation arises this concept. So to make it a reality we have designed the pod to be compatible for daily commutation and even during emergency situations, it is even better as the boarding could be made as per the passengers choice with help of Geographic location. The pod is set into motion by magnetic levitation, we connect every pod that is plying in the area with help of internet of things making the system efficient enough to prevent any collision. This makes us claim it as an safest mode of transportation. When you have to own a car there is always chances that you cannot find a place to park your car but you don't have to worry about such a thing with the our system. This system could effectively replace the traditional ambulance for good, when it saves life's without hindering others.

**Key words:** magnetic levitation, electric transportation, internet of things, geographic location, smart city

### INTRODUCTION:

The concepts of faster and cleaner modes of transportation for structured smart cities is the point of having to work on this system. Integrating the systems of mechanical design including the pod design and the transmit lines, with electrical concepts of magnetic levitation and bloom energy including communication systems with internet of things. All of which does not create any meaning leaving one or the other. The methodologies and key principles are to be discussed.

### METHADOLOGY:

The design of a system is the key aspects leading to their success. This system has been designed in such a way that it is more compact and retractable. The side bars are attached to the hooks which hold the magnets, fitted to the base plate are those two retractable seats which can be unfolded to commute injured one's or to have quite a small nap. This cover design is inspired from the eagle's beak while mirroring it along the center plane. The body and covering hood are made of Aluminum 6063 t6, while the magnetic coils inside the hook like structures made of copper. When this aluminum acts as an light weight and durable metal it can be easily compacted with this material being more

readily available and easily accessible one, it also acts as an faraday shield making the mesh out of metal preventing humans from the effects of magnetic field.

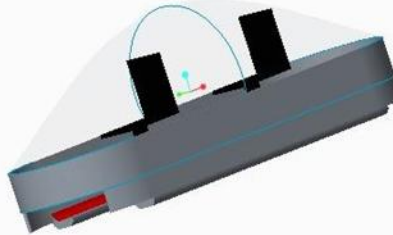


Fig 1: Structure of E-POD

### **PROPULSION:**

This system is propelled by the enormous power of an electromagnetic field and magnetic coils thrusting the e-pod to reach speeds of upto 200km/hr with the acceleration as a top notch. Claiming this to happen is being reality with help of magnets and tracks generating a magnetic field over the place and thereby causing the pod to push forward. As we claim pushing forwarding is not a great deal there also arises the problem in making the system come to an rest position, this too can be comfortably achieved by reversing the current directions and causing the effect of attraction to hold the pod afloat [1]. Even today's super cars use this sort of magnetic braking techniques assuring us the desired safety and accelerated commutation.

### **INTERNET OF THINGS:**

Internet of things (IOT) is a crucial role player which helps make smart cities a reality. This technology to E-POD is inevitable as commuting autonomously is a key goal of our system. All pods are connected to one another through the internet and every exact location of the pod is met by geolocation and global positioning systems. These data are then fed to a single control or the server hub where control of every pod can be monitored and controlled [2][3]. An capacitive sensor which helps us identify the availability of the person in their seats. A crucial control that is exerted by the internet of things is that a human life is more precious than anything else around us to saves lives during accidents when a injured person is on board of an pod and is desirable to reach the hospital in a minute or two, while the pod carrying the person is called emergency pod and other pods are made to levitate on the launch pads paving the way for the fastest ambulance.

### **RESULTS:**

The statistics from several surveys of people using the public transportations in Mumbai is around 7.5 million which surpasses other means with such a situation in front of us the systems like hyperloop have been proved to reach speeds of 600-700km/hr and likely to double the speed records in the near future. Coming across such a tremendous change in transportation making work from capital city of a country and residing back in the natures hood a reality.

When this is reality an harsh reality is that road transportation of a few kilometer's takes several hours with increased population of vehicles. This naturally leads to increased consumption of

fuel in a way and causing the CO<sub>2</sub> levels to rise tremendously. The hyperloop stations with such massive speeds would have long intervals of boarding areas, so could travelling 400km in half an hour and travelling 5-10km for two hours does not make life a better one, while the E-POD being a alternative with boarding areas as close as 100m from your residence. Advents of using internet of things helps us set the start and end destination using comfortable geolocation systems. This does not take your ownership, maintenances and fuel cost and just the entry fees to commute.

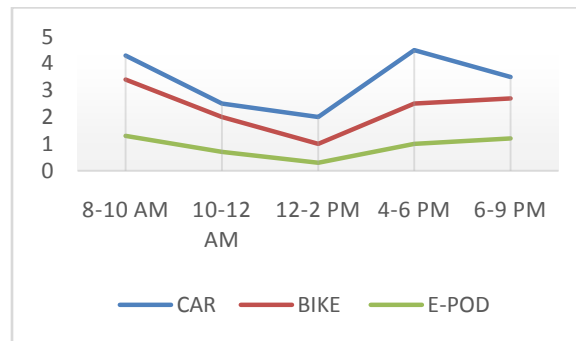


Fig 2: Average coverage at various time periods.

## CONCLUSION:

The extent of this system completely lies in the hands of society, while implementing these structures need structured cities with people able to efficiently handle electronic gadgets with precision. Maintaining a good level of reliability takes more time and constant efforts. When implemented will have a tremendous impact on the way people live.

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