Hyperloop Transportation System
IITM Technology Available for Licensing

Problem Statement

- The problem statement discussed in the present invention is ***how to develop a hyperloop transportation system capable of reducing drag force without comprising overall performance of the hyperloop transportation system.***

- Hence, subject invention addresses the issue efficiently

Technology Category/ Market

Technology: Hyperloop Transportation System
Industry/Application: Hyperloop Transportation System, Railways, Cargo, etc.;
Market: The global **Hyperloop technology** market is projected to reach at a **CAGR** of **32.58%** during the period **(2024-32).**

Technology

- Present patent related to a **hyperloop transportation system** for highspeed transportation of people and/or objects.
- Said system comprises **two or more tubes** for **movement of hyperloop pods** within.
- The **two or more tubes** may be connected with each other through a **plurality of passageways** by allowing flow of air streams through them for distribution of air flow pressure among the two or more tubes.
- The passageways may be positioned at **regular interval** between the **first tube** & the **second tube**.
- The passageways may comprise **flow control valves** installed on the passageways for **controlling the flow** of the **air** through the passageways.
- The Hyperloop transportation system may further comprise an **auxiliary tube** for allowing movement of air through the **plurality of passageways**.

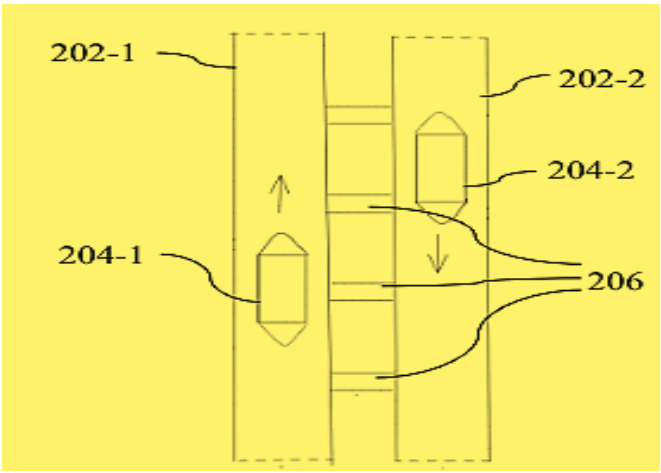

Fig.1 illustrates an exemplary top view of a Hyperloop transportation system

- The hyperloop transportation system is also comprise a **flow control valve** installed on one or more of the plurality of passageways for **relieving air pressure** & **minimizing interference** between high-pressure air streams flowing through the two or more tubes.
- The flow control valve may be actuated with a **pre-programmed control logic.**

TRL (Technology Readiness Level)

TRL-6, Technology demonstration in relevant environment;

Intellectual Property

IITM IDF Ref. 2460;
Patent Application No. 202241071896
PCT Application No. PCT/IN2023/051173

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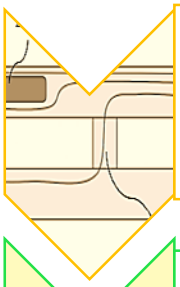
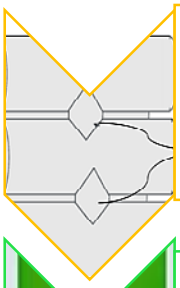
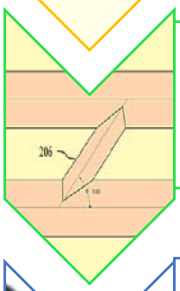
Key Features / Value Proposition



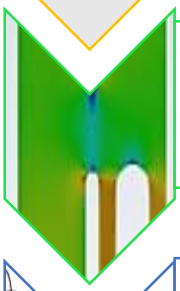
- The plurality of passageways may increase an effective cross-sectional area for flow of the high-pressure air stream in any of the two or more tubes



- The passageways are configured with mild steel, stainless steel, medium carbon steel, alloy steel and/or composite material including fibre-reinforced plastics, concrete, Aluminium(Al) & alloy of Al.



- The plurality of passageways may be positioned at an
- inclination angle from the two or more tubes, (range from 5 degrees to 90 degrees)



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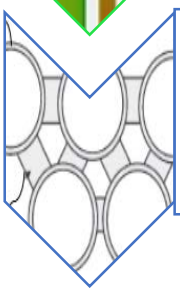
- An effective blockage ratio of the Hyperloop transportation system is reduced without increasing the hoop stresses on the multiple tubes.

- The plurality of passageways may be in one or more of circular shape, rectangular shape, square shape, oval shape, elliptical shape, & non-circular shape.



- Offers benefit by reducing the capital cost & reduction of operational cost by decreasing energy requirements of the hyperloop transportation system.

Images

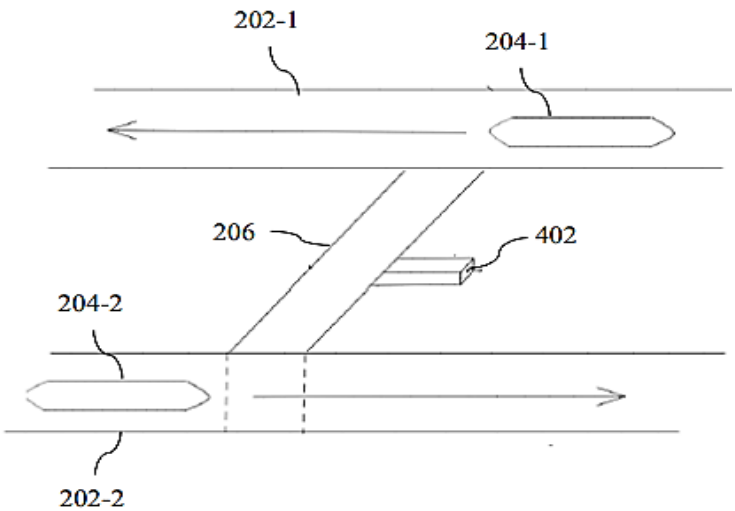


Fig.2 depicts a perspective view of the Hyperloop transportation system utilizing a flow control valve,

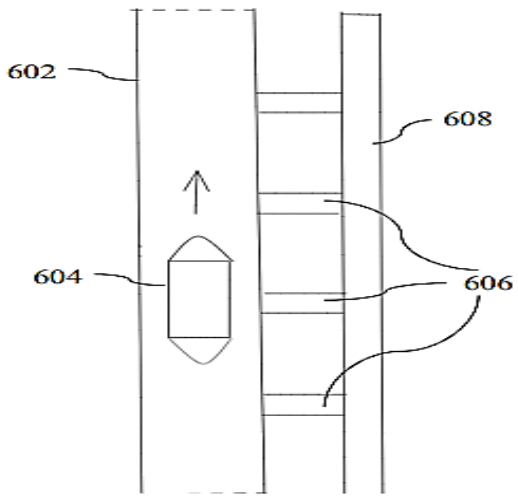


Fig.3 shows an exemplary top view of a Hyperloop transportation system having single tube,

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