



WHAT'S NEW IN THE HYPERLOOP INDUSTRY?



Bengaluru to Chennai in 30 Minutes? IIT Madras Builds India's First Hyperloop Test Track

IIT Madras, in collaboration with Indian Railways, has unveiled India's first hyperloop test track—a revolutionary transportation system that could slash travel time between Bengaluru and Chennai to just 30 minutes. Using electromagnetically levitating pods in low-pressure tubes, hyperloop technology enables speeds exceeding 1,000 km/h while consuming less energy than aircraft. Backed by the Ministry of Railways, the 422-meter test track marks a major step toward commercial deployment, with plans to identify a 40–50 km route for real-world implementation.

HYPERLOOP BREAKTHROUGH: CAPSULE SUCCESSFULLY PROPELLED IN DUTCH TEST

A hyperloop capsule has been successfully levitated and propelled in the Netherlands, marking a key milestone for the futuristic transit system. Developed by Hardt Hyperloop, the test at the European Hyperloop Center demonstrated levitation, propulsion, and guidance working in unison. While speeds remain modest in the 420-meter test tube, the technology aims to reach 700 km/h, offering a faster, more efficient alternative to short-haul flights and high-speed rail. Despite skepticism over infrastructure costs, Hardt Hyperloop targets passenger operations by 2030, pushing the dream of high-speed, low-pressure travel closer to reality.



TRANSPOD CEO DEBUNKS HYPERLOOP MYTHS, PUSHES FLUXJET FOR HIGH-SPEED TRAVEL

At the NXT Conclave, TransPod CEO Sebastien Gendron set the record straight on high-speed tube transport, emphasizing that FluxJet is not a "magnetic gun" but a smoothly accelerating and decelerating levitating vehicle. With a \$500M investment secured, TransPod plans to launch its first commercial route in Alberta, Canada, by 2026, integrating both passenger and freight transport. Interest is growing worldwide, with Texas, the UAE, Saudi Arabia, and Australia exploring potential projects. Gendron stressed that bold investment in new technology is key to shaping the future of transportation.

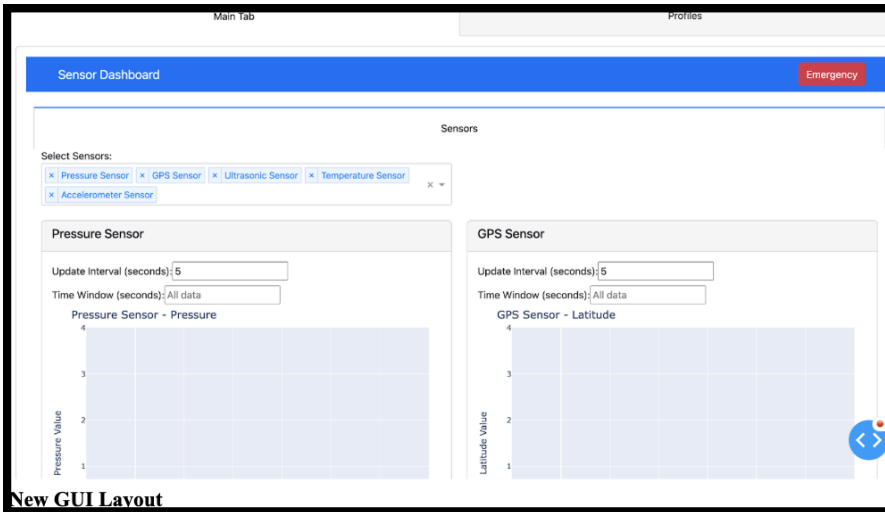




TEAM UPDATES

The ECC Sub-Team

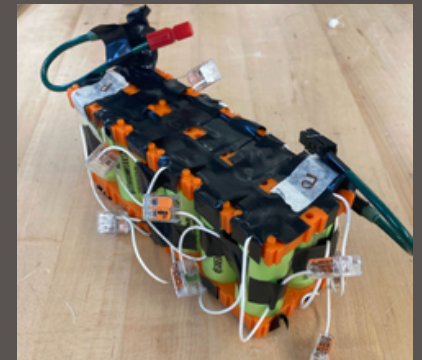
The Electronics, Controls, and Communication team focused on integrating GPS modules into the system and conducting extensive sensor testing. Efforts were directed at seamlessly incorporating GPS data into the graphical user interface (GUI) while ensuring optimal sensor placement in collaboration with the Structures team. Additionally, the team played a critical role in testing control equipment, including PWM controllers, to support the Mechanical team's sub-system evaluations. They also initiated load cell testing to enhance performance assessments. Continuous improvements to the GUI remain a priority as the team refines system functionality.



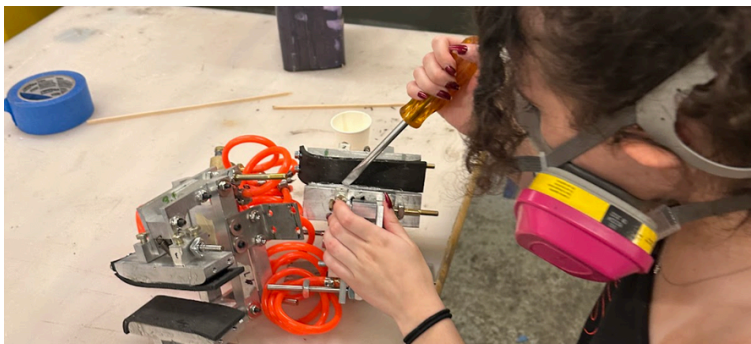
New GUI Layout

The Power Systems Sub-Team

The Power Systems team made significant strides in finalizing the battery pack construction while ensuring strict adherence to system-wide safety standards. Engineers completed the spot-welding of the final battery modules, preparing for high-power variable frequency drive (VFD) testing. On the safety front, the team is actively integrating the Battery Management System (BMS) with the battery pack and Emergency Power Off (EPO) system to enhance reliability and protection. Simultaneously, close collaboration with the Mechanical team has been crucial in optimizing power delivery and control for the levitation modules, which are currently undergoing rigorous testing.



Updated Battery Pack



The Braking Sub-Team

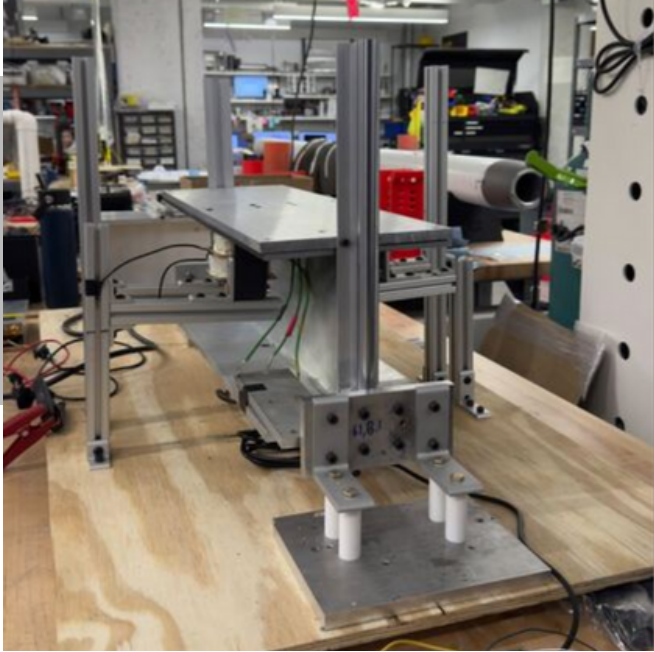
Braking finalized and assembled one of the team's braking systems—pneumatic frictional—while refining designs from the previous competition. Additionally, the team developed a new switchable magnetic braking system, which is currently undergoing rigorous testing before final assembly and mounting of both subsystems. Early results from the magnetic system show promise for improving braking performance.



The Structures Sub-Team

The Structures team focused on hands-on manufacturing based on CAD models developed earlier in the year. Assembly began on the battery pack enclosure, while composite work progressed with the fabrication of a carbon fiber aeroshell. Additionally, the team worked on integrating electrical sensors within the Hyperloop pod, carefully planning mounts, enclosures, and wiring routes for GPS and accelerometers to optimize functionality.

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Full I-Beam Test Rig

THE MAGNETICS SUB-TEAM

The Magnetics team focused on the critical task of assembling and testing the levitation modules for the minipod, overcoming several complex challenges along the way. These included optimizing the transformer configuration, constructing a functional test rig with limited stock materials, and resolving load cell issues. Despite these hurdles, the team achieved a groundbreaking milestone—successful levitation for the first time. This achievement not only validates the system's core functionality but also paves the way for further integration, bringing the project one step closer to a fully operational system.

THE MARKETING SUB-TEAM

The Marketing team focused on enhancing the team's digital brand across Instagram, LinkedIn, the website, and merchandise. Efforts included creating seasonal newsletters, with Fall, Winter, and Spring editions in development. Additionally, the team designed templates for recurring Instagram content such as "Meet the Team" features, Instagram Takeovers, and general updates. Work also continued on updating the website and designing team merchandise, which—thanks to donor support—will be provided to all members at no additional cost.

THE OPERATIONS SUB-TEAM

The Operations team focused on managing the team's budget, tracking expenses, and overseeing purchasing for materials, equipment, and travel. Efforts were directed at ensuring compliance with financial and legal regulations while maintaining accurate records. Additionally, the team coordinated tasks across subteams to streamline operations and support overall project efficiency.

THE BUSINESS DEVELOPMENT SUB-TEAM

The Bus Dev team prepared for Giving Day while exploring alternative fundraising strategies beyond traditional food-based events. Efforts included researching and applying for both Cornell-affiliated and external grants previously secured by other project teams. Additionally, the team focused on expanding and organizing its alumni network to strengthen long-term financial support for the project.

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