3D-printed tyres and a vehicle with spherical wheels: Hankook showcases the mobility of tomorrow

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Korean premium tyre manufacturer Hankook showcased two concepts illustrating what the mobility of tomorrow could look like at its “Design Innovation Day 2025”: a sustainable, 3D-printed tyre and a robotic platform that allows vehicles to manoeuvre in all directions.

The Sustainable Concept Tyre is produced layer by layer in a 3D printer. It uses recycled and renewable raw materials and features an organic tread design with forms based on natural efficiency principles. The prototype was developed in collaboration with engineering partner Harvestance, using Ntop design software. The goal of this concept is resource-efficient production, lasting durability and easy recycling.

The two-seater PathCruizer mobility pod, which is powered by the WheelBot 2 robotic platform uses special spherical wheels that can roll in all directions allowing the PathCruizer to move sideways, diagonally, or turn on the spot. This innovative functionality allows for precise manoeuvres in airport passenger boarding bridges, or as a flexible means of transport in urban mobility hubs. Hankook developed the technology in conjunction with robotics startup CALMANTECH.

Turning on the spot, turning at a right angle, or moving diagonally — the following video demonstrates the manoeuvrability of the PathCruizer: https://www.youtube.com/watch?v=eFy7P3JbAsU

Leading research and industry partners

The projects are part of Hankook’s “Design Innovation Project”, which has been running since 2012 in partnership with prominent design schools worldwide, including the University of Cincinnati, the Royal College of Art in London, and Germany’s Pforzheim University. Leading technology partners such as LG Electronics, Rainbow Robotics and CALMANTECH contributed additional expertise. Its success can be seen in international design competitions like the Red Dot, iF and IDEA Award, where the projects have already achieved accolades.

Hankook’s “Design Innovation Day” is an annual forum aimed at presenting new mobility technologies at the intersection of innovation, design, and sustainability. Another aim is to strengthen links to the technology partners. The event is hosted in the “Technoplex”, Hankook’s headquarters in Pangyo in South Korea.

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