

Press release

Faster, more sustainable, more efficient: how Hankook is using artificial intelligence to speed up tyre development

- **AI-based tools for streamlined processes and shorter development times**
- **Environmentally friendly: virtual simulations reduce the need for testing tyres**
- **Expert knowledge still plays a central role in product development**

Neu-Isenburg, Germany, 4 June 2024 – Artificial intelligence plays a key part in most modern-day business processes and transformations. AI applications are becoming increasingly established in the automotive industry and play an essential role in tyre development. Premium tyre manufacturer Hankook has been quick to recognise their potential, and invest accordingly. The tyre specialist has been using AI-based tools for some time now to make development faster, more sustainable and more efficient.

Virtual simulations mean fewer test tyres

By using AI, Hankook is already leveraging important synergy effects in tyre development, a laborious process that usually includes the manufacture and repeated testing of physical prototypes. “Over the next few years, simulation will increasingly replace and supplement real tests, but it won’t eliminate them completely,” explains Klaus Krause, Vice President and head of Hankook’s Europe Technical Center in Hanover. “What does the use of simulation and artificial intelligence involve? The starting point for development is not just tyre technology, rather, we need to see ourselves as part of the overall vehicle. In the automotive industry, there is tremendous pressure to reduce the number of prototypes and to adopt virtual methods, and is the reason behind a lot of the vehicle simulation technology. Component manufacturers, including us tyre manufacturers, are increasingly making use of this to speed up virtual test methods and get faster results.”

Recommendation of the optimum tyre mixtures

Hankook is also making greater use of the support offered by artificial intelligence when it comes to the development of new material mixtures. The highly complex mixing process uses raw materials with different properties and in different proportions, which in turn depend on various variables and must be tailored accordingly. The ideal outcome is only possible through the precise measurement of mixture ratio and sequence, temperature and pressure. AI can also be used to assess the physical properties of the finished result, providing recommendations for an optimum mixture and greatly reduce the development time for a new mixture.

Expert knowledge still plays a central role

Despite numerous innovations made possible with artificial intelligence, the “human” touch in the form of specialist tyre knowledge still plays a central role in product development. Ultimately, the assessment of whether the outcome is right is always made by the experts.

Today, the use of simulation and AI makes it possible to identify whether a development direction will deliver the desired outcome much more quickly and, if not, corrections can be made in good time to avoid unnecessary developmental issues and delays. The rapid advancement of AI is likely to open up further major potential in the automotive sector and thus also in the tyre industry in the future. As a result, AI will continue to gain significance in the future as an indispensable tool in tyre development.

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About Hankook

Hankook Tire manufactures globally innovative, award-winning radial tyres of proven superior quality for passenger cars, light trucks, SUVs, RVs, trucks, and buses as well as motorsports (circuit racing/street circuits/rallies).

Aspiring to bring consumers the utmost excellence in product quality, technological excellence and driving satisfaction, Hankook Tire continuously invests in research and development maintaining five R&D centres and eight production facilities around the world. Bespoke tyre solutions for the European markets as well as European Original Equipment according to the requirements of leading premium car manufacturers, are developed in the company’s regional Technical Centre in Hanover/Germany. Production for the European region is taking place in the state-of-the-art manufacturing site in Rácalmás/Hungary which was inaugurated in June 2007 and is continuously being expanded.

Hankook Tire’s European headquarters are located in Neu-Isenburg near Frankfurt am Main in Germany. The manufacturer operates further branches in several European countries and sells its products through regional distributors in other local markets. Hankook Tire employs approximately 20,000 people worldwide and sells products in over 160 countries. The company has been the technical partner and exclusive tyre supplier of the Generation 3 for the FIA ABB Formula E World Championship since 2023. Internationally leading car manufacturers rely on tyres made by Hankook for their original equipment. Approximately 38 percent of the company’s global sales are generated within the European region.

For more information please visit www.hankooktire-mediacyber.com or www.hankooktire.com.

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