

News Release

BASF, Chery and Orient Motion present world's first* mass-produced electromechanical brake (EMB) brake-by-wire system

- **Ultramid® (PA) and Ultradur® (PBT) engineering plastics support lightweight plastic brake pedal assembly**
- **BASF engineering plastic solutions deliver high durability and reliable performance in key components of the EMB brake-by-wire system**
- **The innovative application will make its world debut at the BASF booth (Booth B4 - 4303 in hall 4) during FAKUMA 2026**

Shanghai, China – October 8, 2026 – BASF, Chery Automobile Co., Ltd. (Chery) and Suzhou Orient Motion Intelligent Technology Co., Ltd. (Orient Motion) will present the world's first mass-produced electromechanical brake (EMB) brake-by-wire system at FAKUMA 2026. Developed and industrialized in China, the system has been deployed in Chery's premium EXEED EX7 model.

BASF's Ultramid® polyamide (PA) and Ultradur® polybutylene terephthalate (PBT) are used in key EMB components, including full plastic brake pedal, Motor Gear Unit (MGU) and Domain Control Unit (DCU).

As vehicle electrification and the evolution toward software-defined vehicles continue to evolve, brake-by-wire technology is emerging as a key direction for the future development of automotive braking systems. This momentum is further reinforced by China's national standard GB 21670-2025, which incorporates Electric Transmission Braking Systems (ETBS) and recognizes EMB as a new technical pathway, providing a clear regulatory framework for broader adoption of

the technology.

“The future of mobility can only be shaped through collaborative innovation across the automotive value chain,” said Liu Hening, Executive Vice President of the EXEED Business Unit of Chery. “As the automotive industry advances toward intelligent, electrified, and software-defined vehicles, new requirements are emerging for materials, components, and integrated system solutions. By working closely with global partners such as BASF and Orient Motion, Chery is accelerating the industrialization of breakthrough technologies while delivering safer and smarter mobility experiences to consumers.”

By replacing conventional hydraulic transmission with electronically controlled actuators, EMB technology enables the deep integration of braking systems, vehicle dynamics control, and software platforms. Test results** from the China Automotive Technology and Research Center (CATARC) demonstrate that EMB offers significant advantages in braking response, control precision, and safety redundancy, helping to enhance active vehicle safety while supporting the evolution of automotive electrical and electronic (E/E) architectures toward higher levels of integration and centralization.

“The successful launch of the world’s first mass-produced EMB system marks an important milestone in the evolution of brake-by-wire technology,” said Steve Yan, Chief Executive Officer of Orient Motion. “The system demonstrates the growing technological innovation capabilities of China’s automotive supply chain, as well as the ability of local companies to bring cutting-edge technologies to large-scale commercial application. We look forward to deepening collaboration with customers and partners worldwide, to further expand the application of EMB technology, and jointly drive the development of next-generation vehicle platforms.”

In this project, BASF engineering plastics solutions helps meet various functional requirements within the EMB system. Ultramid and Ultradur are used in key components including the full plastic brake pedal, Motor Gear Unit (MGU) and Domain Control Unit (DCU). The materials combine mechanical strength, electrical insulation and dimensional stability for demanding operating conditions, including elevated temperatures and high humidity. In the brake pedal assembly application, the plastic-based design is approximately 25% lighter*** than a conventional metal pedal design.

“Materials innovation plays an important role in enabling new vehicle technologies,” said Andy Postlethwaite, Senior Vice President, Performance Materials Asia Pacific, BASF. “Breakthrough innovations rarely happen overnight. They are built through long-term investment, deep technical expertise and close collaboration across the value chain. As more innovations developed in China gain global recognition, we are proud to contribute our materials expertise to help customers bring next-generation mobility solutions to market.”

* *Source: Chery Claims First Mass-Produced EMB System <https://thebrakereport.com/chery-claims-first-mass-produced-emb-system/>*

** *According to information and test data provided by Chery Automobile.*

*** *According to information and test data provided by Orient Motion.*

About BASF

At BASF, we create chemistry for a sustainable future. Our ambition: We want to be the preferred chemical company to enable our customers' green transformation. We combine economic success with environmental protection and social responsibility. Around 95,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises, as core businesses, the segments Chemicals, Materials, Industrial Solutions, and Nutrition & Care; our standalone businesses are bundled in the segments Surface Technologies and Agricultural Solutions. BASF generated sales of around €60 billion in 2025. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States. Further information at www.basf.com.

About BASF's Performance Materials division

BASF's Performance Materials division drives the transformation of the plastics industry by uniting sustainability with high performance. Our materials expertise, deep industry know-how, and broad product portfolio make us the preferred partner for comprehensive solutions across the plastics lifecycle. With dedicated material-focused teams, strong R&D power, and a global production network close to our customers, we deliver tailored offerings that meet regional and industry-specific needs. Our products enhance performance and efficiency in key sectors such as automotive, construction, consumer goods, and industrial applications. Together with our partners, we embark on #OurPlasticsJourney towards a more circular and sustainable future. In 2025, the Performance Materials division achieved global sales of €6.4 billion.

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