

Press Release

Hydrogen technology: Schaeffler among the finalists for the CLEPA Innovation Award

HERZOGENAURACH, GERMANY / BRUSSELS, BELGIUM, 2022-10-14.

- Enertect PC+ coating solution in the final round for the CLEPA Innovation Award 2022
- Up to 20 percent less CO₂: Enertect PC+ makes metal bipolar plates for fuel cells even more sustainable
- Successful modular coating system supplemented with new product family for sustainable hydrogen technology

Automotive and industrial supplier Schaeffler secured second place in the shortlist for the CLEPA Innovation Award 2022 in the category of "Clean and Sustainable Mobility" with its Enertect PC+ coating solution. CLEPA, the European Association of Automotive Suppliers, awards the prize for outstanding innovations toward smart and sustainable mobility. The applicants with the three best technologies were selected from the 104 total submissions and invited to the decisive final round in Brussels. Enertect PC+ is a new high-performance coating system that makes metal bipolar plates, key components in fuel cell systems, more efficient, less expensive, and even more sustainable. Instead of titanium or graphite, both of which contribute disproportionately high production footprints in terms of CO₂ equivalents, steel is used as the base metal for the coating. With this innovation, Schaeffler contributes decisively to establishing hydrogen technology in the mobility of the future.

Uwe Wagner, Chief Technology Officer of Schaeffler AG, had the following to say: "We are very proud of this placement in one of Europe's leading technology competitions. Innovative coating solutions play a key role in sustainable mobility, and thus in hydrogen. Scale-up of this technology to mass production is a major component of the Schaeffler Roadmap 2025. This good placement proves that Schaeffler is on the right path with its hydrogen activities."

Schaeffler coats more than a billion components annually with modular application-oriented coating systems that can be adapted precisely to more demanding corrosion or wear protection and friction reduction requirements. This know-how is being consistently transferred to new business fields, including hydrogen technology. In the summer of 2022, Schaeffler established the joint venture "Innoplate" with Symbio with the aim of manufacturing bipolar plates for fuel cells at high volumes and starting mass production by 2024.

Enertect PC+: Efficient, economical, and sustainable

Enertect PC+ is an extremely thin, precious metal-free, and high-performance nano- to microstructured coating for metal bipolar plates in proton exchange membrane (PEM) fuel cells. Instead of titanium or graphite, steel can be used as the base material for the coating. This lowers costs considerably. The easier processing of steel also facilitates large series production. Compared with alternative, precious metal-based coatings, this coating has about a 99 percent lower carbon footprint. As a result, the overall carbon footprint of the bipolar plate is around 20 percent lower than that of conventional products. With Enertect PC+, Schaeffler is supplementing its successful modular coating system with a new product family for highly sustainable hydrogen technologies. Prof. Dr.-Ing. Tim Hosenfeldt, Senior Vice President Corporate Research and Innovation & Central Technology, described it as follows: "Enertect PC+ is a unique, precious metal-free coating system that we can produce at high volumes in an environmentally friendly process. Through the nanoscale structure, the system is as robust and high-performance as a solution with precious metals is. In addition, it is much more sustainable and much less expensive. This runner-up placement in the shortlist for the CLEPA Innovation Award is incentive for us as a team to continue our work on future technologies with determination and focus."

Schaeffler Group – We pioneer motion The Schaeffler Group has been driving forward groundbreaking inventions and developments in the field of motion technology for over 75 years. With innovative technologies, products, and services for electric mobility, CO₂-efficient drives, chassis solutions, Industry 4.0, digitalization, and renewable energies, the company is a reliable partner for making motion more efficient, intelligent, and sustainable – over the entire life cycle. The Motion Technology Company manufactures high-precision components and systems for drive train and chassis applications as well as rolling and plain bearing solutions for a large number of industrial applications. The Schaeffler Group generated sales of EUR 16.3 billion in 2023. With around 83,400 employees, Schaeffler is one of the world's largest family-owned companies and one of Germany's most innovative companies.

Delighted with the placement: (left to right) Dr. Nathan Kruppe, development specialist for physical coatings at Schaeffler; Thorsten Muschal, CLEPA President; Prof. Dr.-Ing. Tim Hosenfeldt, Senior Vice President of Corporate Research and Innovation & Central Technology at Schaeffler; and Dr. Mehmet Öte, Director of Coating Technology at Schaeffler. (Photo: CLEPA/Schaeffler)

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Metal bipolar plates are key elements in fuel cell stacks. Photo: Schaeffler (Bernd Kammerer)

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