

AZL Aachen GmbH announces new Joint Partner Project on Rotor Sleeves for Electric Motors

AZL Aachen GmbH announces a 'Joint Partner Project' focusing on the technology for reinforcing electric motors with fibre composite reinforcement sleeves. The nine-month project will investigate current and future applications for electric motors, their requirements for armouring sleeves and provide technological insights. Companies interested in the project can join the consortium consisting of Kümpers GmbH, Rassini and Schunk Kohlenstofftechnik GmbH, among others, until the kick-off on September 12th, 2024.

AACHEN, August 2024 — The project, entitled "Rotor Sleeves for Electric Motors: Potentials for Composite Materials and Technologies", aims to address the growing demand for more efficient, powerful and compact electric motors in mobility and industrial applications.

Compared to metals, composite rotor sleeves with their very high stiffness, low density, almost zero thermal expansion and favourable electromagnetic properties are particularly suitable to contribute to all the highly focused development goals.

Transformation from niche to high-volume applications

The application, manufacturing and material technologies for composite rotor sleeves have been proven to be mature, so far mostly in niche high power applications. Due to the increasing demand for efficient electric drives, the demand for rotor sleeves and the corresponding production volumes is growing rapidly. Composite based rotor sleeves are expected to expand into mass applications for electric vehicles, power tools, machine tools, electric aircraft and other industrial applications.

"As a manufacturer of composite materials, we develop and produce customised towpregs and prepreg UD tapes for a wide range of applications. With the increasing demand for efficient electric motors, the importance of rotor sleeves in mass production has increased, which achieve a very high level of performance, particularly when processed with towpregs. The AZL Joint Partner Project is a promising opportunity to gain impulses for the further development of our material and market expertise. With the AZL approach of bringing together supply chain players in a Joint Partner Project, we look forward to expanding our network and discovering new solutions," says Dietmar Hoffstedde, Expert for Composite Towpregs & Prepregs, Kümpers GmbH.

Analysing current and future use cases in the field of mobility and industrial applications

AZL will bring together experts from across the value chain to investigate current and future applications, analyse requirements and assess the impact on design, material selection and production concepts.

Throughout the project, participants will gain a comprehensive understanding of rotor sleeve technology and its applications in electric motors. The team will conduct extensive screening of current and future applications, explore different materials and processes for rotor sleeve manufacturing, and analyse design options.

The requirements and expertise of electric motor designers and manufacturers will be combined with the manufacturing and materials expertise of AZL's advanced materials network. In addition, the project will evaluate the cost and carbon footprint of alternative designs and production concepts, ensuring a holistic approach to support the business and technology development of the project participants along the entire value chain of electric motors with composite rotor sleeves.

How to become part of the consortium

AZL Aachen GmbH invites interested parties to join the consortium and contribute to this innovative project. By participating, companies will gain direct access to all project results, benefit from joint technology development through cost sharing and efficiently drive their development strategies in this rapidly evolving field.

For more information about the project or to inquire about participation, interested parties are encouraged to contact:

Contact

Philipp Fröhlig
Head of Industrial Services
Mail: philipp.froehlig@azl-aachen-gmbh.de
Phone: +49 241 475 735 14

Pictures for download: <https://my.hidrive.com/share/n4fau6d8ip>

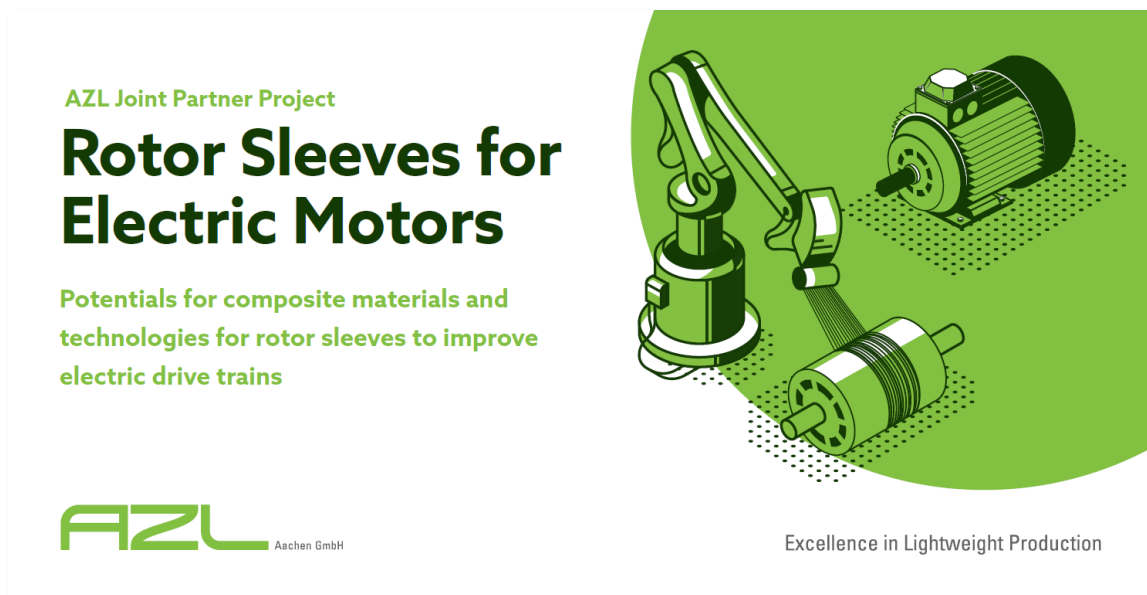


Image 1: Key-Visual "Rotor Sleeves for Electric Motors" ©AZL Aachen GmbH

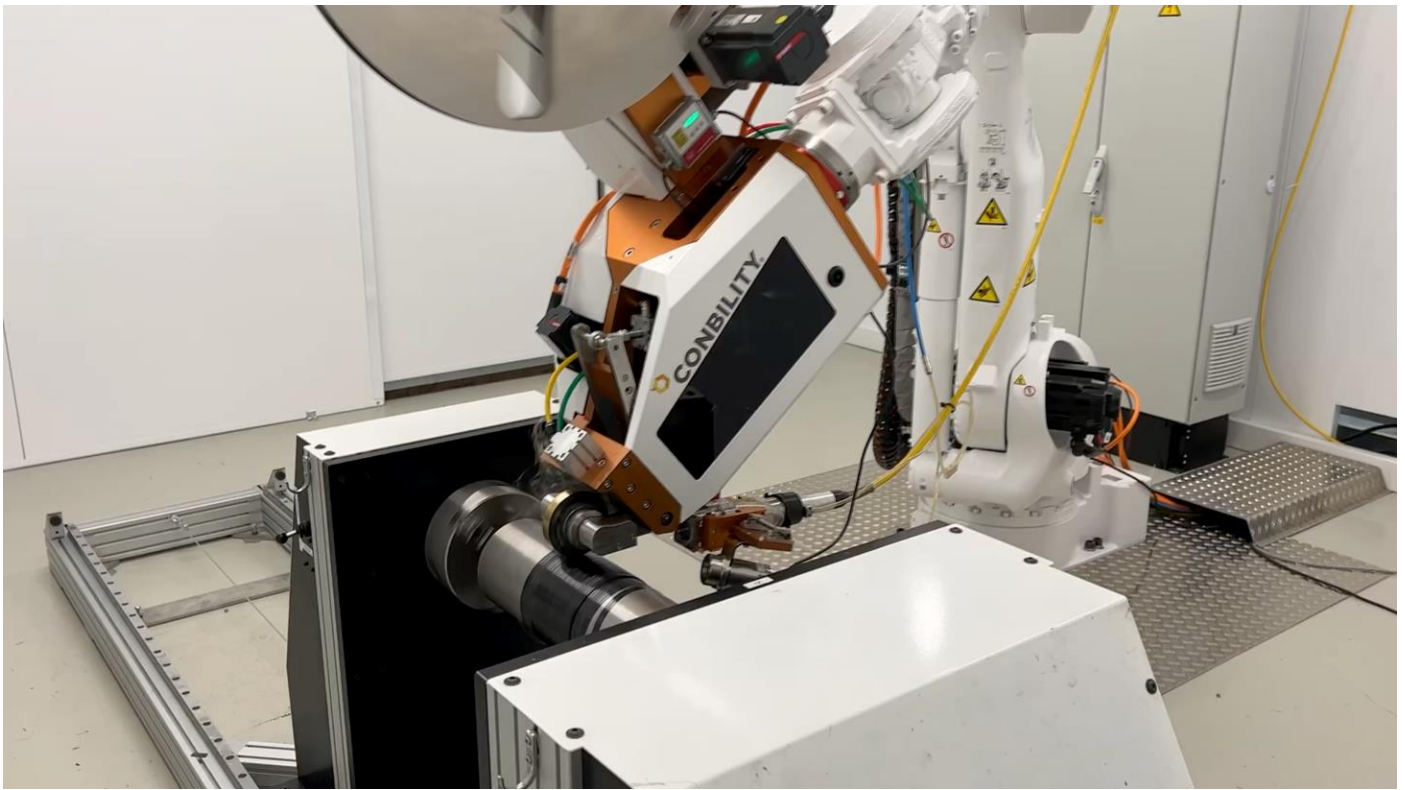


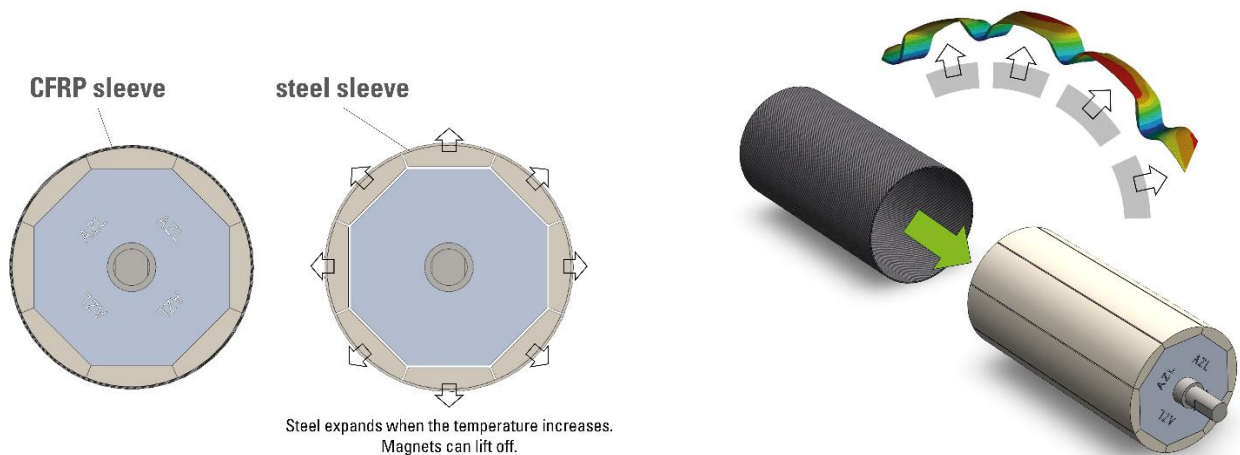
Image 2: Winding Production Cell © Conbility GmbH



As a manufacturer of composite materials, we develop and produce customised towpregs and prepreg UD tapes for a wide range of applications. With the increasing demand for efficient electric motors, the importance of rotor sleeves in mass production has increased, which achieve a very high level of performance, particularly when processed with towpregs. The AZL Joint Partner Project is a promising opportunity to gain impulses for the further development of our material and market expertise. With the AZL approach of bringing together supply chain players in a Joint Partner Project, we look forward to expanding our network and discovering new solutions.

Dietmar Hoffstedde | Expert for Composite Towpregs & Prepregs @ Kümpers GmbH

Image 3: Testimonial Dietmar Hoffstedde – Kümpers GmbH



CFRP sleeve

steel sleeve

Steel expands when the temperature increases.
Magnets can lift off.

Image 4: Effect of high temperature on rotor sleeve © AZL Aachen GmbH

Image 5: Tight fitting requirements © AZL Aachen GmbH



Image 6: Portrait Philipp Fröhlig © AZL Aachen GmbH

About AZL Aachen GmbH

As a close partner of RWTH Aachen University, one of the world's leading universities in the field of production technology, AZL Aachen GmbH specialises in lightweight construction. As a central, interdisciplinary solution provider, AZL Aachen GmbH supports its customers in analysing, understanding and developing products, processes and markets. AZL Aachen GmbH offers platforms and projects to exchange knowledge and efficiently drive innovation through shared effort. Its services include studies and benchmarks, technology consulting and development projects. AZL Aachen GmbH utilises its strong network on the RWTH Aachen Campus, one of the largest research landscapes in Europe for companies and research institutions.

www.lightweight-production.de