

Press Release



Current information dated: Saturday, March 25, 2017

Page 1/3

Press release information: Number of words: 441
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Performance boost for electric motors thanks to thermally conductive casting resin

The casting resin specialist Lambda Resins, Kerpen, has developed a new, thermally conductive vacuum casting resin for stators: Lambdapox. At the joint stand of Gehring Technologies, Ostfildern, WAFIOS AG, Reutlingen, and Lambda Resins, interested parties can convince themselves of its effectiveness. A test arrangement with two electric motors will be available for performance comparisons.

The machine manufacturers Gehring and Wafios develop and produce turnkey production lines for hairpin stators for the worldwide automotive industry. Gehring stands for extensive know-how in the production of the electric drive train. The integrated portfolio includes production technology for the manufacture of traction drives in electric vehicles. WAFIOS completes the portfolio with the production process of forming technology. WAFIOS supplies the bending technology for the complete hairpin and I-pin geometries. Both companies will present their latest products in this field at CWIEME 2023.

Partner Lambda Resins is contributing Lampdapox, a potting material that fills all cavities in a ready-to-install stator where air would otherwise be present. The potting ensures rapid heat transfer from the winding into the cooling jacket. Whether a stator consists of hair pins or a conventional wire winding is irrelevant. The potting reliably protects the motor from overheating. The motor can either be operated with a higher output or be dimensioned smaller from the outset to save costs.

Lambda Resins offers Lambdapox with thermal conductivities in the range of 2 to 8 W/mK, depending on the requirements or the amount of heat to be dissipated. This is about 100 to 400 times the value of air. Compared to liquid cooling media such as oil, the solid potting material has a number of advantages: no pipes or pumps are

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Page 2/3

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necessary, there is no risk of leakage, and there is no additional handling or maintenance effort.

For the trade fair appearance at CWIEME 2023, the Managing Director of Lambda Resins Uwe Köhler has specially designed a test stand with two identical electric motors. There is one difference however: one of the motors was cast with Lampdapox 8 (8 W/mK). A hydraulic pump serves as a brake or load to bring both units to their performance limits. "We record the operating temperatures of the motors and display them graphically on the monitor together with the performance data. The viewer can see exactly what difference the Lampdapox potting makes in operation when we increase the load, for example," explains Uwe Köhler. The expert reveals in advance: "We have already proved that an engine with our potting achieved twice the performance of one without potting."

Gehring, WAFIOS and Lambda Resins at CWIEME 2023: Hall 3.2, Stand 32A14-B15

Press Release



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Page 3/3

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Gehring

With over 90 years of experience, Gehring develops, among other things, technologies for highly efficient conventional and electrified powertrains. With its laser roughening, coating and honing processes, the company offers innovative solutions for combustion engines in response to current requirements of the automotive industry. Production technology for electric motors complements the portfolio and sets the tone for the future direction of the company. As a worldwide company, the Gehring Group is globally represented in key markets of the automotive and supplier industry, hydraulics and pneumatics, as well as aerospace technology.

www.gehring-group.com

WAFIOS

With around 1,100 employees, WAFIOS AG, Reutlingen, is one of the world's leading companies in the field of special mechanical engineering. It develops, designs and manufactures technically sophisticated machines for the wire and tube processing industry and for cold forming.

www.WAFIOS.com

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