

## Dürr Group expands range for battery manufacturers and enters dry coating market

**Bietigheim-Bissingen, November 20, 2023 —** The Dürr Group has expanded its range in the growth business of production technology for battery electrodes to include an efficient and sustainable future-oriented technology. Thanks to its acquisition of the French mechanical engineering company Ingecal, Dürr can now also supply calendering systems to the battery industry. These play a key role in the coating of electrode foils for lithium-ion batteries. In addition, Dürr has agreed a partnership with the US coating expert LiCAP Technologies. With Ingecal and LiCAP, Dürr has unique expertise in electrode production and can now offer its customers not only wet coating but also cutting-edge dry coating technology. This process offers considerable advantages in terms of costs, energy consumption, and CO<sub>2</sub> emissions and can also be used for the production of future solid-state batteries.

In the production of electrodes, thin metal foils are coated with cathode and anode material, which consists of chemicals. Today, this is commonly done using solvents. However, it is also possible to apply dry material without harmful solvents. This is a highly attractive option, both economically and in terms of sustainability, because dry coating requires up to 40% less energy and around 20% less process time. Furthermore, CO<sub>2</sub> emissions are reduced by around 1 ton for every 10 kilowatt hours of electrode capacity produced.

Ingecal, which has been part of the Dürr Group since November 17 and is based near Lyon, specializes in calendering technology. In this process, the cathode and anode material is pressed onto the foil under high pressure, using two steel rollers. The French company's calendering systems are suitable for both wet and dry coating. Ingecal is the main company of the Amalis Group, acquired by Dürr, with sales of approx. €15 million and around 70 employees. The purchase price is based on the enterprise value plus a performance-related component. In recent years, Dürr and Ingecal have successfully cooperated on several projects with battery manufacturers and automakers.

Dürr Aktiengesellschaft  
Corporate  
Communications & Investor  
Relations  
Carl-Benz-Str. 34  
74321 Bietigheim-Bissingen  
Germany

Phone +49 7142 78-1785  
Fax +49 7142 78-1716

corpcom@durr.com  
www.durr-group.com

The partnership with LiCAP Technologies is aimed specifically at dry coating. The company from Sacramento (California) has extensive know-how regarding the material used and the requirements for the coating process. One result of LiCAP's development work is the patented Activated Dry Electrode® process, which is now to be established on the market together with Dürr. Dürr and LiCAP are already in talks with a well-known battery cell manufacturer about the construction of a dry coating line.

### Good growth opportunities through electromobility

Dr. Jochen Weyrauch, CEO of Dürr AG, said: "Given the strong growth in electromobility and the trend toward decentralized energy storage, battery production technology is one of the Dürr Group's most important growth business fields. With Ingecal and LiCAP, we are offering our customers a comprehensive range of products for electrode production and are also well positioned in the future-oriented dry coating market. Ingecal and LiCAP are highly specialized partners with recognized expertise and an excellent reputation in the battery sector. Together we can perform even better – and this also goes for the construction of large coating systems for giga cell factories."

The expansion of Dürr's product portfolio also benefits its cooperation with mechanical engineering companies Grob and Manz, which has been running for a year now. This is primarily aimed at delivering turnkey equipment for complete gigafactories. "We now also offer calendaring systems from a single source and, together, we can also target customers who rely on the dry process in the first step of electrode production," said Dr. Jochen Weyrauch. In addition, thanks to its dry coating know-how, Dürr already has important expertise for the production of future solid-state batteries. These have solid electrolytes, unlike the currently prevalent lithium-ion batteries.

From around 2030, 30 to 40% of battery electrodes manufactured in Europe and North America are expected to be produced using dry coating. That said, wet coating will also remain a relevant process. Its further development is currently aimed primarily at replacing the toxic NMP solvents (N-methyl-2-pyrrolidone) used today with solvents that are largely harmless. For wet coating, Dürr offers not only coating technology but also systems for drying and solvent recovery. Dürr is already one of the world's leading suppliers of solvent recovery systems. These will also be required in the future when using harmless solvent variants.

Images for this press release can be found [here](#).

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Dürr Aktiengesellschaft  
Corporate  
Communications & Investor  
Relations  
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74321 Bietigheim-Bissingen  
Germany

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corpcom@durr.com  
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The Dürr Group is one of the world's leading mechanical and plant engineering firms with particular expertise in the technology fields of automation, digitalization, and energy efficiency. Its products, systems, and services enable highly efficient and sustainable manufacturing processes – mainly in the automotive industry and for producers of furniture and timber houses, but also in sectors such as the chemical and pharmaceutical industries, medical devices, electrical engineering, and battery production. In 2022, the company generated sales of €4.3 billion. The Dürr Group has over 20,500 employees and 140 business locations in 32 countries, and it operates in the market with five divisions:

- Paint and Final Assembly Systems: paint shops as well as final assembly, testing, and filling technology for the automotive industry
- Application Technology: robots and products for the automated application of paint, sealants, and adhesives
- Clean Technology Systems: air pollution control, coating systems for battery electrodes, and noise abatement systems
- Industrial Automation Systems: automated assembly and test systems for automotive components, medical devices, and consumer goods as well as balancing and diagnostic technology
- Woodworking Machinery and Systems: machinery and equipment for the woodworking industry

## Contact:

Dürr AG

Andreas Schaller / Mathias Christen

Corporate Communications & Investor Relations

Phone +49 7142 78-1785 / -1381

Fax +49 7142 78-1716

E-Mail [corpcom@durr.com](mailto:corpcom@durr.com)

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Dürr Aktiengesellschaft  
Corporate  
Communications & Investor  
Relations  
Carl-Benz-Str. 34  
74321 Bietigheim-Bissingen  
Germany

Phone +49 7142 78-1785  
Fax +49 7142 78-1716

[corpcom@durr.com](mailto:corpcom@durr.com)  
[www.durr-group.com](http://www.durr-group.com)

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Dürr Aktiengesellschaft  
Corporate  
Communications & Investor  
Relations  
Carl-Benz-Str. 34  
74321 Bietigheim-Bissingen  
Germany

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Fax +49 7142 78-1716

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[www.durr-group.com](http://www.durr-group.com)