

Corporate News

centrotherm enters new growth area with innovative technology concepts for the production of carbon fibers

- **Significant cost reduction achieved in stabilization process of carbon fiber precursors**
- **Official handover of first R&D system to the German Institutes of Textile and Fiber Research Denkendorf (DITF)**
- **Presentation of the results at the Aachen – Dresden – Denkendorf International Textile Conference 2018**

Blaubeuren, November 15, 2018 – centrotherm (ISIN: DE000A1TNMM9 and DE000A1TNMN7) has developed an innovative technology concept to stabilize carbon fiber precursors together with the German Institutes of Textile and Fiber Research Denkendorf (DITF). The concept is based on centrotherm's low-pressure technology and enables optimal control of process atmosphere and oxygen concentration. Compared with conventional production concepts, process duration is reduced by up to 30% and energy consumption is cut by up to 50%.

Dr. E. Frank, Head of Carbon Fibers and New Materials at DITF, summarizes the production concept's benefits as follows: "Besides the significant reduction in manufacturing costs, we found the higher homogeneity of the stabilized fibers particularly compelling." He adds: "In centrotherm we have found an ideal industrial partner for our research project, which the ministry of economics of Baden-Württemberg is sponsoring."

Today at the corporate headquarters in Blaubeuren, the Chairman of the Supervisory Board Robert M. Hartung and Management Board member Gunter Fauth as well as development team members Andreas Keller and Manuel M. Clauss handed over the first laboratory furnace to the DITF. The German Institutes of Textile and Fiber Research Denkendorf (DITF) were represented by Prof. Dr. Michael R. Buchmeiser (Executive Board member), Dr. Bernd Clauß (deputy Executive Board member), Dr. Erik Frank (Head of Carbon Fiber Development, New Materials) and Dr. Frank Hermanutz (Head of Biopolymers, Wet Spinning). Guests of honor included Manuel Hagel, member of the State Parliament of Baden-Württemberg and General Secretary of the CDU party of Baden-Württemberg, Dr. Joachim Wekerle, Head of Division Gesundheitsindustrie, Chemie und Werkstoffe at the Ministry of Economics of Baden-Württemberg, Jörg Seibold, mayor of Blaubeuren as well as Jürgen Stoll, Head of Finance of Blaubeuren.

Manuel Hagel enthuses: "A great day for centrotherm and the region. The company has once again proven that it stands for innovation and creativity and thus

contributes significantly to securing prosperity in our homeland. The implementation of the project was also of particular concern to me. That's why I liked to accompany it from the beginning. I am very pleased that the R&D system was handed over today and that I was allowed to be part of this celebration ".

"The delivery of the first c.LAB Carbon to DITF represents an important milestone for centrotherm's diversification and future development," emphasizes Robert M. Hartung, before adding: "As a technology and system supplier, we are entering a further growth area for our innovative production solutions, which forms a complement to the photovoltaic and semiconductor industries."

The centrotherm production concept has a modular design and is scalable. While c.LAB Carbon offers maximum flexibility and an annual capacity of one ton for research & development, the c.STAB Carbon production and pilot systems cover annual production capacities of 10, 20 and 250 tons per system unit.

Gunter Fauth, Management Board member responsible for Operations at centrotherm: "Our innovative technology concept has the potential to replace existing manufacturing processes and to become established as a new standard in the industry. We will continue our research partnership with the DITF and also develop production solutions for fiber carbonization together with industrial partners."

The DITF presented the new technology to the international public at the specialist *GOCarbonFibre* conference in early October in Berlin for the first time. centrotherm will present its production concept on November 29, 2018 at the "Functionalization & New Materials: New Chemistries" session at 15:10 hours at the Aachen – Dresden – Denkdorf International Textile Conference 2018.

About centrotherm international AG

centrotherm has been developing and realizing innovative thermal solutions for over 60 years. As a leading and globally operating technology group, we offer production solutions for the photovoltaic, semiconductor and microelectronics industries.

The continuous further development of our successful solutions in thermal processing and coating, such as for manufacturing crystalline solar cells and power semiconductors, form the basis for our successful partnerships with industry, research and development.

Our customers worldwide appreciate our production systems' process stability, scalability and availability in mass production. Above and beyond this, our work is distinguished by the fact that we create high-end process technology solutions which are specific for our customers and tailored to their requirements, and the fact that we are outstanding in system building.

We jointly confront the daily challenges of setting new trends, maximizing the efficiency of producing, for example, solar cells and semiconductors, and securing investments, coupled with our long machine lifetimes.

In this way, we generate valuable competitive advantages for our customers through targeted process innovations and production solutions.

Our around 650 staff worldwide are committed to the further development of high-tech solutions for key markets.

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