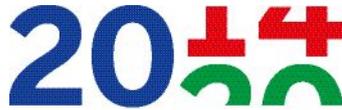




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und Beschäftigung

Process development project for innovative products made of 2D nanomaterials successfully completed

"HEA2D" consortium successfully demonstrated an end-to-end processing chain of two-dimensional nanomaterials

Herzogenrath/Germany, July 23, 2019 – AIXTRON SE (FSE: AIXA), a worldwide leading provider of deposition equipment to the semiconductor industry, has successfully investigated the production, properties and applications of 2D nanomaterials in the "HEA2D" project together with five partners.

The result: 2D materials integrated into mass production processes have the potential to create integrated and systemic product and production solutions that are socially, economically and ecologically sustainable. Application areas for the technologies developed and materials investigated in this project are mainly composite materials and coatings, highly sensitive sensors, power generation and storage, electronics, information and communication technologies as well as photonics and quantum technologies.

In addition, the knowledge gained in the project led to further development of the existing system technology. Together with the project partners, prototype systems and demonstrators for 2D semiconductor materials were manufactured and successfully tested.

"HEA2D" was supported by the European Regional Development Fund (ERDF) 2014-2020.

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About AIXTRON

AIXTRON SE is a leading provider of deposition equipment to the semiconductor industry. The Company was founded in 1983 and is headquartered in Herzogenrath (near Aachen), Germany, with subsidiaries and sales offices in Asia, United States and in Europe. AIXTRON's technology solutions are used by a diverse range of customers worldwide to build advanced components for electronic and opto-electronic applications based on compound, or organic semiconductor materials. Such components are used in a broad range of innovative applications, technologies and industries. These include LED applications, display technologies, data storage, data transmission, energy management and conversion, communication, signaling and lighting as well as a range of other leading-edge technologies.

Our registered trademarks: AIXACT®, AIXTRON®, APEVA®, Atomic Level SolutionS®, Close Coupled Showerhead®, CRIUS®, EXP®, EPISON®, Gas Foil Rotation®, Optacap™, OVPD®, Planetary Reactor®, PVPD®, STExS®, TriJet®

For further information on AIXTRON (FSE: AIXA, ISIN DE000A0WMPJ6) please visit our website at: www.aixtron.com.

About AMO

AMO GmbH's mission as a non-profit SME is to break new ground in innovation resulting from the convergence of different technologies. Particular attention will be paid to the convergence between microelectronics and optoelectronics and the exploitation of the resulting innovation potential. By concentrating on the so-called KET's (Key Enabling Technologies) as one of the most promising sources of innovation, AMO is able to successfully pursue this mission. AMO's strategy focuses on innovations that are considered to be the interface between discovery, invention and new knowledge with economic added value. Current strategies focus on a continuous effort to create new potentials and opportunities for both incremental and disruptive innovations.

About the University of Duisburg-Essen

Creative inspiration between Rhine and Ruhr: the University of Duisburg-Essen is located in the European region with the highest density of institutions of higher learning and research. Created in 2003 by the merger of the universities of Duisburg and Essen, it is the youngest university in North Rhine-Westphalia and one of the ten largest universities in Germany with about 42,000 students.

The "Electronic Materials and Nanostructures" workgroup at the Engineering Faculty of the University of Duisburg-Essen (Uni-DuE) investigates nanostructures for electro-technical applications, and here especially opto-electronics. One key focus is on 2D materials (graphene, transition metal-dichalcogenides) for transparent electrodes, light emitters, photovoltaic elements, and electrographic inks. A 4" graphene CVD system for thermal and plasma CVD is available for developing processes and components, as are various lithography and coating processes, chemical process technologies and electrical contacting and characterization. We perform extensive microscopic analytics using laser spectroscopy, electrical scanning force microscopy, and electron microscopy. This enables fundamental connections to be made between material properties on the nanometer scale and component functionality.

About Coatema Coating Machinery GmbH

COATEMA is a family-owned mechanical engineering company that has been offering unique competence in its core activities of coating, laminating, and printing for 40 years now. The company develops and markets system solutions for use in laboratory and development applications and designs customized solutions for pilot systems and production on substrate widths of up to 5 meters. COATEMA is a reliable partner for coating systems that offer substantial added value and flexible process management (click & coat module). Furthermore, COATEMA maintains its own technical laboratory in order to optimize system development for special customer requirements. It also offers its partners and customers the opportunity to perform experimental coating. COATEMA's success here is documented by proprietary patents and awards. The company's global presence at specialist fairs and conferences enables the latest solution concepts to be analyzed and translated into proprietary system specifications. With project partners, COATEMA then works to achieve these target specifications in processes and components and thus to qualify system technology on component level.

About Fraunhofer IPT

Fraunhofer IPT combines longstanding expertise and experience in all areas of production technology. In the fields of process technology, production machinery, production quality, measurement technology, and technology management we provide customers and project partners at our location in Aachen with specialist solutions and results that are directly implementable in networked, adaptive production. We view production not only in terms of its individual steps, but also account for processes in their entirety. We see the connections between individual aspects of the process chain – from preliminary and product development work via preparation for production through to manufacturing and assembly.

The services we offer focus on individual tasks and challenges within specific sectors, technologies, and product areas: tool and mold construction, optics, turbomachines, life sciences engineering, and lightweight production technology.

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Fraunhofer IPT currently has around 460 employees and operates on 9,000 m². Of these premises, around 5,000 m² are used as laboratories and machine halls. Via the Fraunhofer Center for Manufacturing Innovation CMI in Boston, USA, we also offer our customers sustainable technology transfer between European and American industry.

About Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH (K.I.M.W.)

Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH (K.I.M.W.), Lüdenscheid, focuses on increasing the quality and efficiency of injection moulded thermoplastic parts and their coating. The institute acts as a link and know-how provider between basic university research and industrial companies by developing market-oriented, pre-competitive innovations to market maturity within the framework of industrial research. The Institute has been running the "Competence Center for Surface Technology and Plastics" network since 1988 already. This has around 350 members and was included in the "go-cluster" (formerly "Competence Networks Germany") in 2005 already. This cluster meets the excellence criteria of the European Cluster Excellence Initiative (ECEI) and was awarded the GOLD Label in 2013. The Institute is also characterized by longstanding expertise in the field of surface technology for plastic components. As well as providing specialist advice, the Institute focuses on industry-specific and company-specific process development for industrial applications. Building on interdisciplinary cooperation between its specialist departments, the Institute offers the clear advantage of covering all aspects of product development. The key focus here is on evaluating, developing, and validating functional materials for industry solutions. In the past, the Institute successfully performed extensive R&D activities, particularly in the field of back injection. This includes the specific design and construction of injection molds and process management, as well as prefabrication of foils using deep drawing and laser processing.

Forward-Looking Statements

This document may contain forward-looking statements regarding the business, results of operations, financial condition and earnings outlook of AIXTRON. These statements may be identified by words such as "may", "will", "expect", "anticipate", "contemplate", "intend", "plan", "believe", "continue" and "estimate" and variations of such words or similar expressions. These forward-looking statements are based on our current assessments, expectations and assumptions, of which many are beyond control of AIXTRON, and are subject to risks and uncertainties. You should not place undue reliance on these forward-looking statements. Should these risks or uncertainties materialize, or should underlying expectations not occur or assumptions prove incorrect, actual results, performance or achievements of AIXTRON may materially vary from those described explicitly or implicitly in the relevant forward-looking statement. This could result from a variety of factors, such as actual customer orders received by AIXTRON, the level of demand for deposition technology in the market, the timing of final acceptance of products by customers, the condition of financial markets and access to financing for AIXTRON, general conditions in the market for deposition plants and macroeconomic conditions, cancellations, rescheduling or delays in product shipments, production capacity constraints, extended sales and qualification cycles, difficulties in the production process, the general development in the semi-conductor industry, increased competition, fluctuations in exchange rates, availability of public funding, fluctuations and/or changes in interest rates, delays in developing and marketing new products, a deterioration of the general economic situation and any other factors discussed in any reports or other announcements, in particular in the chapter Risks in the Annual Report, filed by AIXTRON. Any forward-looking statements contained in this document are based on current expectations and projections of the executive board based on information available the date hereof. AIXTRON undertakes no obligation to revise or update any forward-looking statements as a result of new information, future events or otherwise, unless expressly required to do so by law.

This document is an English language translation of a document in German language. In case of discrepancies, the German language document shall prevail and shall be the valid version.

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