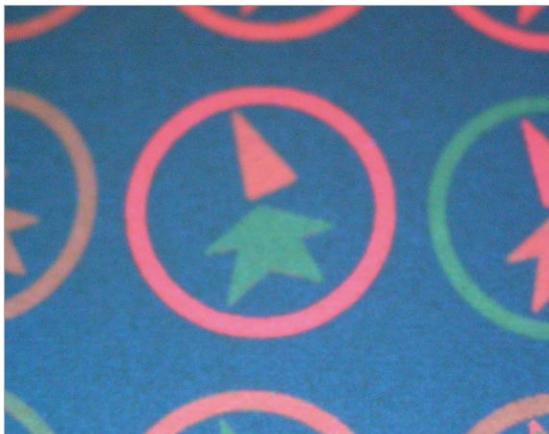


Center for Applied Nanotechnology

Newsletter . Edition 7 - April 2009

Successful Conclusion of Business Year 2008



“CAN’s third business year has been by far the best ever. Thanks to the business area strategy developed at the beginning of 2008 for ‘Implementation of knowledge and innovations in the field of nanotechnology for the benefit of our customers’ new cooperation, patent and funding options could be created in 2008 in all business areas – cosmetics/flavours, medicine/medical technology, technical applications as well as analysis/toxicity“, was the way Dr. Frank Schröder-Oeynhausen, Chief Operating Officer of CAN GmbH, summarised the past business year.

“Sales revenues and proceeds from project funding could be increased to just under 1.3 million Euros. This represents an increase in turnover of 36 % versus the previous year. With a staff that now numbers 27, we are in an excellent good position to continue to develop CAN GmbH into a leading service provider in nanoparticle technology,” Schröder-Oeynhausen and Prof. Dr. Horst Weller, CAN’s Chief Scientific Officer, agreed.

The focus for the current business year is on expanding the business areas and gaining new members for the sponsor association. The prerequisite for gaining new members, in particular new strategic partners, is to prove to these companies that we can offer a financially measurable added value with technology developed by CAN. This will be accomplished by implementing and concretizing coordinated cooperation, patent and funding strategies in the business areas. Existing technology platforms will continue to be pursued through the development of prototypes. An example is the further development of the patented flow reactor and its upgrade for production of water-soluble particle systems. Also part of expanding the business areas will be preparation of more of our own patent applications based on existing research activities. Existing patent rights will be presented directly as technology scripts to interested parties and users for a possible licensing.

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Successful CAN GmbH Evaluation



CAN GmbH has successfully completed its three-year start-up phase. An evaluation by an independent expert team showed that CAN GmbH has contributed significantly to better and faster utilization of the basic research findings in Hamburg in the field of nanotechnology. This was the basis for the decision by the Hamburg Senate and Parliament to continue the project. The city will invest a total of 4.4 million Euro in the period from 2009 to 2012.

“The results presented at this time are impressive proof that CAN GmbH is on the right track and has reached the first milestone successfully,” said Scientific Counsellor Bernd Reinert. “By continuing to support CAN GmbH the Senate is following the goal of ensuring growth and jobs in Hamburg through improved technology transfer in the particularly promising field of nanotechnology and creating a competitive factor in Hamburg and far beyond.”

The Senate commissioned the Fraunhofer Institute for Production Technology IPT with the evaluation of CAN GmbH. For the evaluation a workshop with external experts was organized in Hamburg. The goal in coming years will be to continue to consistently implement knowledge and innovations in the field of nanotechnology for the benefit of our customers. To do this we intend to acquire more orders from the industry and give all business segments economic independence as profit centres. The next evaluation is planned for 2011.

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Extension of CANdot® Series X Product Line



Particles of the CANdot® Series X are new inorganic, non-semiconducting nanocrystallites that are doped with rare earth elements and/or transition metals. After excitation with UV light the particles emit light in the visible light range but also in the UVA and NIR range. The CANdot® Series X nanoparticles, which are now commercially available have a unique physical fingerprint and a high resistance to environmental influences. For example, they are stable at

temperatures up to 1000 °C and insensitive to pH's ranging from 1 to 14.

The particles are produced under controlled conditions and in defined sizes in a patented wet chemical process. The resulting size distributions range from 5 % to 20 % and material yields from 80 % to 99 %. The nanoparticles can be adapted to different target matrices by means of a

simple and inexpensive surface modification. This allows their use in several areas of application, including security labels. Dispersed in ink formulations, CANdot® Series X nanoparticles can be printed on the widest variety of surfaces using a technique also patented by CAN GmbH and then read electronically. This identification can prove unequivocally that an object is the original.

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MultiFas Network with CAN Starts

Since 1 April the network “MultiFas – Multifunctional Fibre Systems” has been up and running with CAN GmbH participating. This network unites 11 partners from Hamburg, Lower Saxony, Bremen, North Rhein-Westphalia and Saxony from the fields of fibre and textile management as well as innovative technologies. “CAN GmbH is participating as an expert for nanoparticle technology in order to be able to take part at an early stage in developments on the market for wearable technology,” says Dr. Christoph Gimmler, R&D CAN GmbH.

With funding from the Germany Ministry for the Economy and Technology the development and implementation of innovative networks of small and medium-sized companies are being promoted as part of the Central Innovation Programme for Medium-sized Businesses (ZIM). Network management is the responsibility of Sperlich GmbH, Göttingen. “A common opportunity for all involved to bundle their innovative activities in collaborations and networks offers several advantages for the participating companies,” commented Gimmler further. “This will enable them to reduce development risks and costs while at the same time present the increased innovative power of their network through a common presence on the market.”

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CAN on Trade Show Tour – from Hanover to Atlanta



In 2009, CAN GmbH will again be represented at trade shows featuring nanotechnology. This research facility is presenting developments and applications in the areas of materials research, cosmetics and life sciences aligned with the top themes of the respective exhibitions. The most important technology exhibition worldwide in Hanover will unite 13 international side trade shows under one roof from the 20th to 24th of April. CAN GmbH will be found in **Hall 2, Stand C08**, at the “World of Nano (WON) – Innovations Worldwide” of this year’s **Hannover Messe**. The CAN stand will provide insight into current developments in the CANdots® Series A, M and X as well as applications in the area of medical technology and cosmetic products. “We made a conscious decision for the stand at this side trade show because this is where we can show that we provide our customers with

technology-based solutions for market-driven problems,” explained Dr. Christoph Gimmler, R&D CAN GmbH. On an area of 500 square metres the shared WON stand offers companies, institutions and research facilities in the German and international scene a central platform for the latest developments in nanotechnology.



From the 3rd to 7th of May CAN will be in **Houston** at the **Nanotech Conference & Expo**, the world's largest trade show for nanotechnology (**Stand 700**). Now in its 12th year, Nanotech expects over 5,000 attendees and 250 exhibitors. In Houston the CAN GmbH is partner of the shared VDI stand.



From there the tour will continue to the **BIO International Convention in Atlanta** from 18 to 21 May. Here CAN GmbH will join other companies at the Norgenta stand (**Stand 2733 – German Pavilion**) and be presenting its expertise in the areas of medical applications and material applications to an audience of international experts. Besides introducing the CANdot® Series to the American market, CAN GmbH will be offering services in the areas of toxicology, encapsulation and functionalisation of nanoparticles to potential customers in the fields of medicine and pharmacy. CAN's target core customers are looking for sophisticated solutions requiring biocompatibility as well as stable and specific cell markers for in vivo applications. CAN GmbH would like to use the US trade shows to gain new customers and enter into strategic partnerships in the research and development area.

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CAN GmbH Partners

In good company

Beiersdorf AG www.beiersdorf.com

Eppendorf AG www.eppendorf.com

Olympus Winter & Ibe GmbH www.olympus-owi.de

Nanogate AG www.nanogate.com

Merck KGaA www.merck.de

Free and Hanseatic City of Hamburg fhh.hamburg.de/stadt/Aktuell/behoerden/wissenschaft-forschung

Hamburger Sparkasse www.haspa.de

Hamburg Chamber of Commerce www.hk24.de

Innovationsstiftung Hamburg www.innovationsstiftung.de

Norgenta North German Life Science Agency www.norgenta.de

Competence Center Hansenanotec www.nanoscience.de/hansenanotec

University of Hamburg www.uni-hamburg.de



CAN GmbH offers companies and research institutions contract research and development services in the area of nanotechnology and participates in national and international research programs. The focus of activities is on the utilization of new findings made in chemical nanotechnology and nanoanalysis, particularly in the areas of consumables, special polymers and health care. The main areas of expertise include, in addition to the characterization of nanostructures, the production of numerous nanoparticulate and nanocomposite materials, the encapsulation of active substances as well as the development of nanoparticle-based biological and medical markers.

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