

Healthcare industry BW

Mechanical engineering meets medical engineering: implant research ‘made in Stuttgart’

Engineers from the University of Stuttgart have initiated a project on the “Development and optimisation of bioactive and bioresorbable ceramic layers on implants” designed to investigate implants that are more durable, better tolerated by users and cheaper than those that are currently on the market. The winners of the “Idea Competition in Biotechnology and Medical Technology” launched under the Baden-Württemberg Biotechnology Funding Programme have now been announced and an expert jury consisting of independent reviewers has selected the Stuttgart University project, coordinated by Prof. Rainer Gadow from the Institute for Manufacturing Technologies of Ceramic Components and Composites (IFKB), as one of the best ideas. A total of 120 proposals were submitted to the Idea Competition.



High-velocity suspension flame spraying (HVSFS) developed at the University of Stuttgart allows the use and processing of nanoscale powder materials

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The demand for artificial implants is increasing year on year. It is generally believed that the increasing demand for joint replacements is due to increasing life expectancy and the growth in associated degenerative diseases.

For the reasons given above, a feasibility study will be carried out to assess the ability of coating implants with a novel spraying method developed at the IFKB. This method, known as high-velocity suspension flame spraying (HVSFS), allows the use and processing of nanoscale powder materials. It also allows the processing of a broad range of particle sizes, ranging from a few micrometres to 50 nanometres, for the production of ceramics of biomedical interest. The researchers anticipate that the improvements will lead to longer and more reliable life cycles of the implants, which in

turn is expected to reduce production costs and lead to greater benefits for users. Funding from the Baden-Württemberg Biotechnology Funding Programme will now give the researchers the opportunity to turn their ideas into reality.

The goal of the Idea Competition is to reinforce and safeguard the long-term competitiveness of Baden-Württemberg science and industry in the field of biotechnology and medical technology. The idea competition is designed to fund original and interesting projects on synthetic biology, biochemical engineering, molecular bionics and medical technology where a successful outcome cannot be taken for granted. Further activities are being planned as part of the "Stuttgart-Tübingen Interuniversity Centre for Medical Technology" (IZST).

Further information:

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Press release

28-Feb-2011

Source: Universität Stuttgart - 23.02.2011 (P)