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Helmholtz Association facilitates new spin-offs

The Helmholtz Association is providing up to €130,000 of funding for each of four new spin-off proposals by Helmholtz researchers. This brings the total number of Helmholtz centre spin-offs funded by the Association through its Initiative and Networking Fund to 86 since 2005. The Helmholtz Enterprise funding programme supports spin-offs during the critical start-up phase, helping research findings to be applied rapidly for the benefit of society and the economy.

Enabling research findings to be rapidly translated into practical applications is one of the Helmholtz Association's primary aims, according to Rolf Zettl, Managing Director of the Association. "For achieving this goal, we support scientists from our centres who aim to take their ideas and become entrepreneurs, above all in the difficult early stages", he says, adding that the Helmholtz Enterprise programme is also a great help in other aspects, such as covering the staff shortages which arise at the individual Helmholtz Centres when spin-offs are set up. "We also give our scientists who are founding a spin-off the necessary resources to enable them to develop their business plan, for example." The support given also includes the provision of external management experts and intensive consultancy provided by the Helmholtz Centre transfer points.

The four new projects to be funded are:
1.) Commercializing DESY detectors – commercial distribution of technologically advanced X-ray cameras
This spin-off project opens up new opportunities for commercialising LAMBDA, an x-ray detector developed in the DESY accelerator centre. LAMBDA is the first detector capable of producing x-ray images in colour, providing valuable additional information about the subject under examination. The detector also operates at high speed to create very detailed images in high resolution, delivering a greatly improved data set in a very short space of time compared to standard detectors. This is particularly advantageous for large-scale research apparatus, as it enables several examinations to be carried out at the same time. The aim is to make the detector available for other synchrotrons and x-ray sources in the field of high-end experiments through collaboration with the planned spin-off X-Spectrum GmbH, which will take on the commercial distribution of the detector including installation, initial operation and maintenance.
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2.) ELiSE – Marine plankton provide models for light structure engineering
An interdisciplinary team of founders from the Alfred Wegener Institute Helmholtz-Center for Polar and Marine Research (AWI) is setting up ELiSE GmbH as a spin-off. In a first step, the business model was developed with the help of start-up funding and the new company is now ready to be launched. The basis for this spin-off is the bionic process known as ELiSE (Evolutionary Light Structure Engineering) developed at the centre, whereby light structure engineering is improved by the systematic use of a variety of naturally pre-optimized light-weight structures modelled on marine plankton. This procedure differs from other optimization methods in the huge range of structures shown by the natural models, making it capable of generating several significantly different variant solutions in each case. The ELiSE

development process has already been applied successfully in a range of industrial projects. The main target industries are the automotive industry, the aerospace industry, mechanical engineering, medical technology and consumer goods.
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3.) Sunbelt Energy Technologies – solar tower system with integrated energy storage system for the production of electricity and heat for industrial high-temperature processes
The solar tower system under development is designed for the production of electricity and heat for high-temperature industrial processes in countries which get a lot of sun. The system was developed at the German Aerospace Center (DLR), using its expertise in solar receivers and related system technologies. The concentrated solar power is directly absorbed by nearly black ceramic particles in the receiver. The particles are used in a cycle both to absorb the energy and to store it. The system delivers hot air with an integrated storage system to compensate for fluctuations in solar radiation and can even provide energy at night. The system's unique selling point is the receiver's basic components. The proposed spin-off will take over the commercial exploitation of the technology as soon as the system's validation at the solar tower in Jülich has been successfully completed.
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4.) CLASS 5 PHOTONICS – Developing and marketing an innovative high-performance femto-second laser
The planned spin-off CLASS 5 PHOTONICS of the Deutsches Elektronen-Synchrotron (DESY) and the GSI Helmholtz Centre for Heavy Ion Research will be located on the DESY campus as a high-tech company. It will develop and market OPCPA laser amplifiers with record average power and pulse duration. The spin-off will provide commercial solutions for femto-second lasers with innovative amplifier technology for the first time. The laser provides new levels in average power and short pulse duration, achieving a ten-fold increase in process speed. It also enables the miniaturisation of high-brilliance x-ray sources.
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The Helmholtz Association contributes to solving major challenges facing society, science and the economy with top scientific achievements in six research fields: Energy; Earth and Environment; Health; Key Technologies; Structure of Matter; and Aeronautics, Space and Transport. With almost 36,000 employees in 18 research centres and an annual budget of approximately €3.4 billion, the Helmholtz Association is Germany's largest scientific organisation. Its work follows in the tradition of the great natural scientist Hermann von Helmholtz (1821-1894).

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