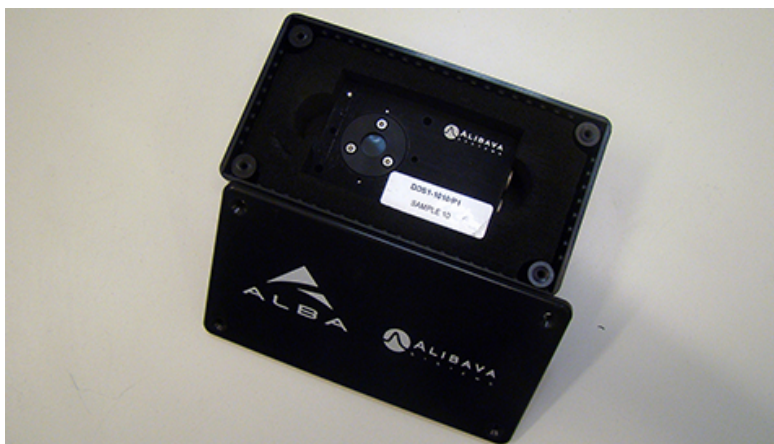


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The ALBA Synchrotron, CSIC and Alibava Systems develop an X-ray detector



The ALBA Synchrotron, CSIC and company Alibava have signed a license agreement for commercialising this X-ray detector, a compact and portable system for X-rays characterisation.

A team of researchers and engineers of the ALBA Synchrotron have collaborated with members of the company Alibava Systems and the Institute of Microelectronics of Barcelona (IMB-CNM CSIC) to develop a radiation detector aimed at measuring the intensity of the beam with high precision when performing an experiment at a synchrotron facility. This new detector enables a correct development of the experiment, ensuring the quality of the obtained data and reducing the time of the experiment.

Most of the experiments performed at synchrotron radiation facilities require to measure with precision the intensity of the X-rays used for analysing samples. This is the way to guarantee an appropriate data acquisition and make the most of the experiment time. However, there is no versatile and low priced detector in the market. Current detectors are too thick and, when the X-rays pass through them, some intensity is lost. Because of that fact, it is unavoidable to diagnose before starting the experiment.

The device developed by the researchers and engineers of the ALBA Synchrotron, in collaboration with the Institute of Microelectronics of Barcelona (IMB-CNM CSIC), is based on very thin transmissive photodiodes (about 10 microns in comparison with 300 microns of the

current devices) which are able to detect and characterize X-rays absorbing only a small part of the intensity. “The capabilities of our device make possible to diagnose the intensity of the beam during the experiment, certifying the value of the obtained data. This is how we are able to diagnose the beam continuously and to detect any intensity deviation immediately”, highlights Óscar Matilla, head of the Electronics section of the ALBA Synchrotron.

The collaboration between the ALBA Synchrotron and Alibava Systems, a spin-off company of the Spanish National Research Council (CSIC) located at the UAB Research Park, has been complemented with a license agreement that lets Alibava commercialise a product originated from research results of the synchrotron facility and the CSIC. The company, that works on the field of particle detectors, has offered its entrepreneurial experience in commercial and legal aspects as well as in the manufacture of the product.

As of today, the device has been successfully tested at the ALBA Synchrotron and other synchrotron facilities, such as the European Synchrotron Radiation Facility (ESRF). It is expected to sell the first detectors in the following months to universities and synchrotron facilities and the responsible of the project estimate to sell about 50 devices per year.

This project is part of the Innovation Team Program (EDI), led by the Catalan Government, whose aim is to improve knowledge transfer from research institutions to companies. According to Núria Valls, scientist of the Industrial Office at the ALBA Synchrotron, “our participation in this program has been essential to promote and accelerate the previous steps of a detector commercialization like, for example, the intellectual property of the technology, a market research and a business plan, among others”.

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