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Press release

III-V Lab counts on RIBER's equipments, with France Relance's support, for the realization of photonic and nanoelectronic components of the future

III-V photonic and electronic component fabrication requires suitable, modular and scalable equipments. III-V materials, at the core of Telecom, Defence, Security and Spatial Systems, are created atomic layer by atomic layer in epitaxy reactors. By choosing the supplier Riber with France Relance's support, III-V Lab is acquiring state-of-the-art epitaxy reactor for the realization of its advanced components.

Palaiseau, 10 January 2023

InPERIUM (InP for optoelectronic with Molecular Beam Epitaxy)

In the framework of the French recovery plan, III-V Lab is supported by the Government to adapt and modernize its R&D and production tool. Thus, III-V Lab chose to rely on a RIBER epitaxy equipment whose set up realized during the first half of the year, will expand its optoelectronic and microelectronic semiconductors manufacturing platform.

" InPERIUM is a project implemented in the framework of the French recovery plan that allows us to increase our manufacturing capacity of wafers, components and optoelectronic and microelectronic modules for our strategic sectors " says Jean-Pierre Hamaide, President of III-V Lab.

While RIBER presents the MBE 412 system as the most suitable 4 inch wafer research and production pilot tool for III-V and advanced materials, III-V Lab considers it as an equipment with decisive options for its needs.

MBE412 Molecular Beam Epitaxy

"The MBE 412 convinced us thanks to its reliability and its great modularity", explains Olivier Delorme, researcher in epitaxy at III-V Lab, "Thanks to our understanding of physics of materials, combined with the versatility of epitaxy reactor, we explore many

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combinations of III-V semiconductors in order to develop high-performance components”.

The cluster robot operating under ultra vacuum, allows to automatically transport wafers in different modules connected to the 8 available ports of the equipment. In particular, a preparation module, equipped with a hydrogen plasma source, has been installed improving the performance of components by providing optimum surface morphology.

Finally, the in situ characterization instrument EZ-CURVE® from RIBER will be integrated and adapted for precise and continuous control of the growth process, thus contributing to a better control of the epitaxy processes allowing to improve the electronic or photonic performances and ultimately to increase the manufacturing efficiency of the components.

“Our MBE system cluster allows both product development and production. Our deposition reactor easily integrates various control instruments needed for the development of new materials. The modularity of the cluster design offers the opportunity to add additional reactors for pre/post process and analysis steps, or multiplying reactors to optimize product development and/or increase production efficiency. Our platform is fully automated and is driven by our software Crystal XE. Developed about ten years ago, the MBE 412 has been a worldwide success since then, with 25 operating systems worldwide and covering different applications: detectors, lasers, photovoltaic ...” concludes Michel Picault, Chairman of the Management Board of Riber.

About III-V Lab

III-V Lab is an Economic Interest Group (“Groupement d’Intérêt Economique”) between Nokia, Thales and CEA, dedicated to industrial research and development of optoelectronic and microelectronic components based on III-V semiconductors, and their integration with silicon circuits. Created in 2004, III-V Lab brings together 120 researchers in the Paris region and cooperates with CEA-Leti’s laboratories at Grenoble. III-V Lab has prototyping and production start-up resources to foster the emergence of high added-value component technologies which are then transferred to the industrial entities of the parent companies or their partners. www.3-5lab.fr

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About RIBER

RIBER S.A is the world's leading supplier of Molecular Beam Epitaxy (MBE) products and related services for the compound semiconductor research and industrial field. Riber MBE equipment is the most versatile and precise tool to deposit very thin layer of materials onto substrates with a very high control. MBE technology is used to design and create the newest semiconductor structures for manufacturing of a wide range of novel devices, with the best performances.

RIBER delivers MBE machines worldwide to major universities, material science institutes, compound semiconductor foundries or epiwafer suppliers. RIBER is indisputably the world leader in the field. Expert in Ultra High Vacuum technology since its date of creation in 1964, RIBER moved towards Molecular Beam Epitaxy in 1977, and has developed since a large range of research or production MBE tools, MBE components and processes, in order to support increasing demands in different fields like datacommunications, 5G/6G and VCSELs lasers, photonics, sensors, 3D sensing, displays,...

RIBER is labeled Innovative Company by BPI France and is listed on the Euronext Growth Paris market (ISIN: FR0000075954).

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