Diamfab Announces €8.7M Round of Funding from Asterion Ventures, Bpifrance and Fonds Régional Avenir Industrie Auvergne-Rhône-Alpes

The deeptech startup specializing in semiconductor synthetic diamonds accelerates its pre-industrialization phase

(Grenoble, France March 28, 2024) - Diamfab, a semiconductor diamond deeptech, has announced a first round of funding of 8.7 million euros, from Asterion Ventures, the French Tech Seed fund managed on behalf of the French government by Bpifrance as part of France 2030, Kreaxi with the Avenir Industrie Auvergne-Rhône-Alpes regional fund, Better Angle, Hello Tomorrow and Grenoble Alpes Métropole.

Based in Grenoble, Diamfab is a spin-off from the Institut Néel, a CNRS laboratory, the result of 30 years of R&D into synthetic diamond growth. Initially incubated within SATT Linksium Grenoble Alpes, the Diamfab project led to the creation of the company in March 2019, founded by Gauthier Chicot and Khaled Driche, two PhDs in nanoelectronics and recognized researchers in the field of semiconducting diamond.

To address the market for semiconductors and power components for the automotive, renewable energies and quantum industries in particular, the company has developed breakthrough technology in the field of epitaxy and doping of synthetic diamond. Protected by four patents, their expertise lies in the growth and doping of thin diamond layers, as well as in the design of diamond electronic components.

While the power electronics industry has traditionally used silicon, the advent of electric vehicles has accelerated the adoption of new semiconductor materials offering far superior performance. Diamfab's technology paves the way for the use of diamond, recognized as the ultimate semiconductor. The components they develop are lighter, more resistant to high temperatures and more energy-efficient, making them ideal for a wide range of applications, including power electronics in electric cars, industry and electricity distribution networks.

This first round of funding will enable Diamfab to set up a pilot line to pre-industrialize its technology, accelerate its development and thus meet the growing demand for diamond semiconductors.

Acknowledged as the new leading player in this field in France, Diamfab's ambition is to bring semiconductor diamonds to the level of development required by industry, by being at the forefront of this revolution.

> "In the development of a cutting-edge industry like ours, each stage is essential. The pilot project will catalyze many discussions with our partners and strengthen our relationships. To be accompanied by investors who are committed to the industry and the climate, and above all who understand its constraints and links, is fundamental. We couldn't have hoped for better partners than those who have rallied around us with Asterion," comments **Gauthier Chicot, Chairman of Diamfab.**
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> "Diamfab is at the crossroads of many of today's challenges: industrial relocation, decarbonization, strategic sovereignty... The technology we have developed makes it possible to reduce the historical carbon footprint of semiconductors considerably, and to do so by relocating a key industry for Europe, which is one of our investment priorities with Asterion. Industrial deeptech companies need calm, long-term support, and that's what we provide," explains **Charles-Henry Choel, the Asterion Ventures partner in charge of the deal.**

Power semiconductors, the cornerstone of the global economy

Controlling and modulating electricity flows, power semiconductors are the driving force behind the development of increasingly electric economies. Their impact is central in terms of system efficiency, power and compactness. They are therefore key to the massive electrification and fortify the decarbonization of entire sectors of the economy.

This fast-growing industry, estimated to be worth tens of billions of dollars by 2030, is traditionally based on silicon, still the undisputed leader today. In recent years, new alternative materials known as "wide band gap" semiconductors have emerged and taken significant market share. Diamond, an "ultra wide band gap" semiconductor, is recognized as the ultimate power semiconductor, with a Baliga Figure of Merit score 40 times higher than SiC and 100 times higher than GaN. It will undoubtedly be the material of choice for this new generation of electronic components for power management.

Diamfab: a unique technology to unleash the full potential of semiconductor diamond

Since its creation in 2019, Diamfab has built up an ecosystem of international partners and customers who are helping to develop the technology, including Soitec, Murata, STMicroelectronics, CEA and Schneider Electric.

By reaching industrial standards (wafer size and demonstrator components), deeptech will enable players in the sector to integrate diamond technology into tomorrow's solutions. The result will be unrivaled performance in terms of efficiency, voltage withstand, thermal management and reduced CO2 impact throughout the process: from manufacture to use.

By supporting Diamfab, the French Tech Seed fund managed on behalf of the French government by Bpifrance as part of France 2030, the Fonds Régional Avenir Industrie and Grenoble Alpes Métropole are acknowledging the importance of this technology, as well as their desire to see it develop in France and in a leading European ecosystem.

> "On behalf of the French government, Bpifrance is actively participating in the re-industrialization of France, and is working to ensure the country's sovereignty in strategic sectors such as semiconductors. Diamfab crystallizes these two ambitions: we are proud to be able to support them in this new pre-industrialization phase," adds **Stéphane Lefevre-Sauli, Investment Director at Bpifrance.**
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> "Diamfab, because of its deeptech nature and the industrial nature of the project, fits perfectly into the investment criteria of the brand new Fonds Régional Avenir Industrie, launched by the Auvergne Rhône Alpes region at the end of 2023. We are particularly pleased to support the company at the critical stage of building its pilot line, which will enable it to reach the maturity needed to convince semiconductor manufacturers to invest in this new disruptive technology", adds **Pierre-Antoine Cognard, Business Manager at Kreaxi.**

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About Asterion Ventures
Asterion is a venture capital company that brings together a large part of the French tech ecosystem to invest in high-potential impact and climate tech startups. Thanks to the club deal approach, each investor is free to contribute to projects that support the impact vision he or she wishes to defend. The Asterion team makes sure to create the right "dream team"

of investors with key skills for each company financed. Launched in April 2021, Asterion has already funded 20 French startups and aims to support 100 over the next five years.
To find out more: https://www.asterionventures.com/

About Bpifrance and the French Tech Seed Fund
Bpifrance finances companies - at every stage of their development - with credit, guarantees and equity. Bpifrance supports them in their innovation and international projects. Bpifrance also supports their export activities through a wide range of products. Consulting, university, networking and acceleration programs for start-ups, SMEs and ETIs are also part of the range of services offered to entrepreneurs. Thanks to Bpifrance and its 50 regional offices, entrepreneurs benefit from a single, close and efficient contact to help them meet their challenges.

The 500 million euro French Tech Seed Fund is designed to support the fund-raising of innovative start-ups and VSEs less than 3 years old with technology-intensive innovations. A product of the French government's Programme d'investissements d'avenir (PIA) and operated by Bpifrance, the fund relies on accredited business introducers to identify and qualify these start-ups, and put them in touch with private investors. These business introducers, who guarantee the technological validity of the project, will enable public investment, in the form of Convertible Bonds of up to 400 million euros, to complement the capital provided by private investors. A further 100 million euros will be devoted to equity investment in addition to the conversion of Convertible Bonds.
For further information: www.Bpifrance.fr

About France 2030
The France 2030 investment plan:

- Reflects a dual ambition: to sustainably transform key sectors of our economy (energy, automotive, aeronautics and space) through technological innovation, and to position France not just as a player, but as a leader in the world of tomorrow. From fundamental research, to the emergence of an idea, to the production of a new product or service, France 2030 supports the entire life cycle of innovation, right through to industrialization.
- The scale of the program is unprecedented: €54 billion will be invested so that our companies, universities and research organizations can successfully make the transition to these strategic sectors. The aim is to enable them to respond competitively to the ecological and attractive challenges of the world to come, and to nurture the future leaders of our sectors of excellence. France 2030 is defined by two cross-functional objectives: to devote 50% of its spending to decarbonizing the economy, and 50% to emerging, innovative players, without spending money that is detrimental to the environment (in line with the Do No Significant Harm principle).
- Will be implemented collectively: designed and deployed in consultation with economic, academic, local and European players to determine the strategic

orientations and flagship actions. Project leaders are invited to submit their applications via open, demanding and selective procedures, in order to benefit from government support.

- The program is managed by the Secrétariat Général pour l'Investissement on behalf of the Prime Minister, and implemented by the Agence de la Transition Écologique (ADEME), the Agence Nationale de la Recherche (ANR), Bpifrance, Banque Publique d'Investissement and the Caisse des Dépôts et Consignations (CDC).

For further information: www.gouvernement.fr/secretariat-general-pour-l-investissement-sgpi

About the Fonds régional Avenir Industrie Auvergne Rhône Alpes

As the undisputed leader in economic development, the Auvergne-Rhône-Alpes region places business growth at the heart of its concerns. It is resolutely committed to providing a range of economic services tailored to the needs of industrial and industrial services companies, as well as local businesses. At the initiative of the Region, the Avenir Industrie Auvergne-Rhône-Alpes fund, managed by Kreaxi and UI Investissement, is positioned as the mechanism to support industrial start-ups during their seed phase.

More information: auvergnerhonealpes.fr

About KREAXI

KREAXI is one of the top French Venture Capital specialist investing in early stage start-ups with hypergrowth profile, with € 145m under management through pan-european funds and regional funds. KREAXI has backed more than 550 companies since the last 30 years (out of which 22 went public), has an active portfolio of 60 companies, with a team of 12 professionals based in Lyon and Paris.

About Linksium, SATT Grenoble Alpes

Linksium is the technology transfer acceleration company (SATT) for Grenoble Alpes research laboratories. Linksium favors the creation of startups, which become vectors for technology transfer. Linksium is part of a network of 13 French SATTs specialized in the upstream phases of technological innovation projects. Linksium is a private company with public capital, supported by the French government via the Programme d'Investissements d'Avenir (PIA), the Auvergne-Rhône-Alpes Region and Europe (FEDER), and whose shareholders are Bpifrance, CEA, CNRS, Grenoble INP-UGA, INRIA, UGA, USMB. Since 2015, with €55M invested, Linksium has supported 218 deeptech projects, developed 172 patents and enabled the creation of 84 startups.

For further information: www.linksium.fr

À propos de Hello Tomorrow

Hello Tomorrow is a global initiative that transforms breakthrough discoveries in science and technology into products and services that can help improve human and planetary health, and allow businesses to develop more sustainably.

Over the course of nine editions, the Hello Tomorrow Global Startup Challenge has received 30,000 applications from 132 countries, partnering with universities and research institutions worldwide to identify deep tech solutions that have real global impact. Through their international events, Hello Tomorrow connects all key players to harness their full potential. Through consulting services in strategy and innovation and customised startup programs, they help companies understand how deep tech will impact their business, how to stay competitive and to launch new solutions.

More about Hello Tomorrow: https://hello-tomorrow.org/

About Better Angle

Better Angle is an investment vehicule co-founded by Nicolas Douay & Baptiste Hamel. We invest in Pre-Seed and Seed deals, angel size tickets ranging from 50k€ to 100K€ with a possibility to follow on later up to 200k€. Better Angle is backed by 190+ entrepreneurs, operators, VCs and angels.

About Diamfab

Diamfab is an internationally recognized pioneer in semiconductor diamonds. Founded in 2019 and based in Grenoble (France), Diamfab is a spin-off from the Centre National de la Recherche Scientifique (CNRS) headed by Gauthier Chicot, Khaled Driche, Ivan Llaurado and currently employs 15 people. The company synthesizes high value-added diamond wafers for the semiconductor industry. It also designs diamond-based electronic component architectures, and develops the corresponding manufacturing processes.

With electrical and thermal performance superior to SiC and GaN, record efficiency (99%), compactness, and a reduced carbon footprint throughout the process (from material manufacture to component use), Diamfab's high value-added diamond wafers are designed to play a major role in the electrification of society. From electric cars to the future high-voltage grid, from hybrid aircraft to batteries for connected objects, diamond will be at the heart of the energy transition.

For further information: www.diamfab.com