Inventing tomorrow
Reimagining partnerships, work spaces & the tools we use

Thursday, July 1st, 2021
GRENOBLE WTC CONVENTION CENTER

2021 TECHNOLOGY SHOWCASE:
presentation of 10 innovative projects developed by regional research laboratories addressing the theme of "Inventing tomorrow"

A 24th edition focused on forward-thinking and exploration

Every year for the last 24 years, the Forum 5i has offered the opportunity for project carriers, research laboratories, investors, and entrepreneurs to meet and discuss ongoing innovations. Last year, despite playing out against the backdrop of the ongoing sanitary crisis, Forum 5i gave all these stakeholders the chance to meet and demonstrated, once again, that it is a standout event on the region's economic calendar. This 24th edition will again feature some restrictions but Grenoble Alpes Métropole felt that keeping the event on was a strong sign of its ever-present support for the local ecosystem, particularly during this period of economy recovery, which must be backed.

Shining a light on this know-how, the Technology Showcase's jury selected 10 projects providing solutions to technological, economic and societal issues of "Inventing Tomorrow". This aim of this exhibition is to promote links between regional start-ups and local laboratories. The chosen theme saw projects submitted addressing issues as wide-ranging as industry, IoT, MedTech, and the environment.

⇨ In 2021, 10 projects will be exhibited on the the topic of "Inventing tomorrow":

CAELI ÉNERGIE

Caeli Énergie is specialised in the design and manufacture of low-carbon air-conditioning systems (high energy efficiency, low environmental impact). This solution is based on the optimisation of an evaporative thermodynamic process and the development of a high-performance heat and mass exchanger. Changing states from liquid to gas takes energy: cooling is provided by water evaporation. What's innovative about this solution is its thermal and energy performances - respectively 60% and 20% better than competing technologies - plus the fact it's 4 times more compact.
- Partners: Locie (CNRS / Université Savoie Mont-Blanc), CSTB Lab, Linksium, Tenerrdis, groupe VINCI, Réseau Entreprendre Isère

DIAMFAB

DIAMFAB technology is positioned as a solution to meet energy transition issues, for which electrical energy is increasingly demanded. Diamond is considered as the ultimate semi-conductor, exceeding the performances of all materials currently on the market. Based on its unique diamond-growing know-how, DIAMFAB is developing a turnkey solution (material + process) for foundries that want to produce semi-conductor components made from diamond rather than silicon to boost energy efficiency and compactness.
- Partners: Institut Néel (CNRS), BPI France, Linksium, Minalogic

H-LINK

What does the future hold for copper or optical fibre? H-Link is the first system capable of transmitting radiofrequency waves both in the air and guided inside plastic fibre using the same in-built component. This inexpensive hybrid technology will replace copper and optical fibre in certain applications requiring increased sturdiness and lightness. This technology has multiple advantages such as low sensitivity to electromagnetic interference, and above all short-distance high bandwidth with low latencies and ultra-low energy consumption. Initially designed for robotics due to its high vibration resistance, H-Link meets the needs of not only the motor vehicle and aeronautics industries, but also data centres and other telecommunications infrastructure.

- Partners: CEA-Leti, Radiall, STMicroelectronics, IMS

IMAGO FLUIDICS

Labs-on-chips make it possible to miniaturise, automate, accelerate, and improve multiple processes using small quantities of fluids, particularly in the biomedical sector. IMagO Fluidics (Intelligent Magnetic Object for Fluidics) proposes a solution to simplify the management of these fluids using a system featuring a patented in-built pump: the MAGgot pump. Using a magnetic field, this wireless, remotely-operable precision peristaltic micro-pump guarantees simple design and use. This device is custom-built to customer specifications. The fields of application are vast: diagnostics, cell culture, organs-on-chips, custom medicine, etc.

- Partners: Institut Néel (CNRS), Linksium

LUCIOL

LUCIOL is a prototype developed based on a miniaturised spectrofluorometer with the aim of directly detecting and quantifying PAHs (Polycyclic Aromatic Hydrocarbons) in polluted soil. Using LIF technology and specially-developed models, LUCIOL lets you quickly estimate the presence of pollutants in soil. In-field deployment of this technology reduces the time and cost of analyses and increases the spatial resolution of diagnostics. LUCIOL can be easily tailored to your needs and also be used to detect microplastics in aquatic environments or even mineral phase uranium in archaeological settings.

- Partners: SpecSolE, laboratoire commun ENVISOL – EDYTEM (CNRS / Université Savoie Mont-Blanc), Axelera

RISQID

RISQID is an innovative project developed by the SME Géolithe that uses RFID (Radio Frequency Identification) tag (or "chip") technology to monitor landslides and unstable cliff-top boulders. How it works: tags are directly set up on the relevant site to measure movements. The chips are remotely powered by a radio wave from an interrogator, which it bounces back to communicate data wirelessly. Via this process, RISQID technology provides continuous monitoring that is both simple to set up and energy efficient. In the future, these technologies could also be used to monitor civil engineering structures, including highway infrastructure.

- Partners: Laboratoire ISTerre (UGA, CNRS), LCIS (Grenoble INP, UGA), shared laboratory Geo3iLab (ISTerre, Géolithe), Geolithe Innov

SERENE-IoT

The SERENE-IoT project features 3 countries (France, Germany, Spain) and is focused on connected medical devices designed to meet the needs of patients remotely monitored by healthcare professionals. The local Grenoble consortium is more specifically working on an IoT module developed by Maatel for connected feeding pumps, which can also be used to prevent post-operative infections. SERENE-IoT, which stands for "Secured & EneRgy Efficient health-carE solutions using IoT technologies", was set up to develop high-quality connected healthcare and diagnostic services, based on the use of smart healthcare devices, to meet new challenges encountered both in hospital settings and in case of at-home care.

- Partners: CHU Grenoble Alpes, CEA, LCIS (UGA, Grenoble INP), Fresenius Kabi, Maatel, Medtronic, Orange Labs, STMicroelectronics

TERRIFLUX

The transition to a low-carbon economy means we need to know more about the production chain: who produces what? Who consumes what? What are its socio-economic and environmental impacts? Where do supplies come from? etc. The start-up TerriFlux maps flows of materials, segment by

segment, based on a data reconciliation methodology called AF-Filières and converts them into concise flow diagrams (Sankey diagrams). The aim is to help local authorities to better account for their flows of materials in terms of usage, resources, supplies, and, ultimately, to promote the circular economy on a local scale.

- Partners: Groupe INRIA, TerriFlux, Grenoble-Alpes Métropole/CREG/UGA, AURA-EE (TerriStory platform)

TESTNPASS

TestNPass is a single-use, stand-alone digital diagnostic test for in-field detection of SARS-CoV-2 virus carriers. This test also features a digital sanitary pass, i.e. a physical object detachable from the test and readable using contactless smartphone technology, and can be combined with biometric recognition (optional) that secures and customises the information, without breaching the GDPR. The biosensor is made from functionalised graphene that is paired battery-free to a smartphone application. This fast in-field diagnostic test is designed to guarantee the sanitary security of sensitive sites, such as airports, cruise ships, meeting places, entertainment venues, hospitals, and high-priority public services.

- Partners: Institut Néel (CNRS), Grapheal, Biopolis, Linksium

X-AR

X-AR is a set of tools (featuring both software and services) designed to create and deploy interactive assistance applications for use in industry (training, quality control, assembly assistance, communication, etc.). Depending on usage context and in-field restrictions, this assistance is provided via Augmented Reality / Virtual Reality, on a mobile device or standard PC, with the option of projecting a range of digital content directly into the real-world environment. Usage data can also be processed, e.g. to monitor a learner's progress.

- Partners: GSCOP (UGA, Grenoble INP, CNRS), Linksium

More information on www.forum5i.fr
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