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LETI BACKGROUNDER

LETI AT GLANCE

- Founded in 1967
- 350 industrial partners
- 1,900 researchers
- 2,670 patents in portfolio
- 8,500 sq. m. cleanroom space, 8" & 12" wafers
- 60+ startups launched
- €315 million annual budget
- 700 publications each year
- ISO 90001 certified since 2000

Leti is a technology research institute at CEA Tech and a recognized global leader in miniaturization technologies enabling energy-efficient and secure solutions. Committed to innovation, its teams create differentiating solutions for Leti's industrial partners.

By pioneering new technologies, Leti enables innovative, applicative solutions that ensure competitiveness in a wide range of markets, while creating jobs and improving people's lives. Leti tackles critical, current global issues such as the future of industry, clean-and-safe energies, health and wellness, sustainable transport, information and communication technologies, space exploration and safety & security.

Leti's multidisciplinary teams deliver solid expertise on micro- and nanotechnologies for applications ranging from sensors to data processing and computing solutions, leveraging world-class pre-industrialization facilities. Leti's pioneering technologies include low-power platforms for the IoT, low-cost multi-sensor solutions and 3D integration for cost-effective devices featuring higher performance and reliability, while consuming less energy.

For 50 years, the institute has built long-term relationships with its industrial partners – global companies, SMEs and startups – providing tailor-made solutions through bilateral projects, joint laboratories or collaborative research programs and a clear intellectual-property policy. Leti's startups program actively supports the launch of new technology companies.

Over the years, Leti has collaborated with major research technology organizations and academic institutions to help bring upstream research to the marketplace.

The institute is based in Grenoble, France, and has offices in the Silicon Valley (USA) and Tokyo (Japan).

**Carnot Institutes network: French network of 34 institutes serving innovation in industry.*

PRESS CONTACT

Agency

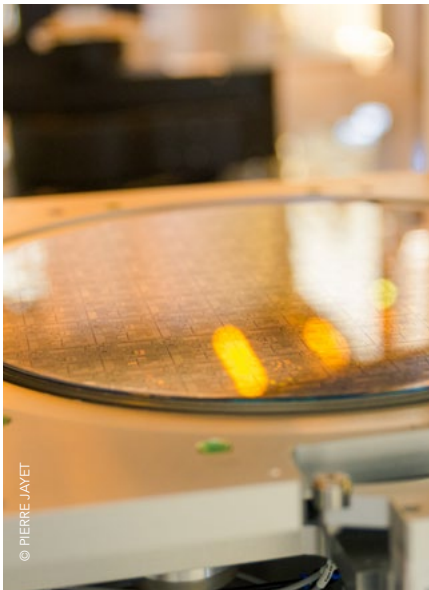
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LETI'S TECHNOLOGY SOLUTIONS

- Computing
- Wireless Communication & Networks
- Image & Vision
- Sensing
- Power Electronics
- Photonics
- Medical Devices
- Cyber-Security

LETI TAILORS INNOVATIVE SOLUTIONS TO MEET ITS PARTNERS' GOALS. THEY BENEFIT FROM:

- A large range of pre-industrialization facilities
- High level multi-disciplinary expertise and services
- Lower risks in developing breakthrough solutions
- Customized innovation projects
- A clear intellectual property policy to provide competitive advantage
- A complete ecosystem: startups, industrial partners along the whole value chain
- Coordination of world-class European projects

LETI, A KEY TECHNOLOGY PARTNER FOR CONSUMER-ELECTRONICS INNOVATION

- Microdisplays for augmented reality
- Sensors for mobile phones
- ICs for consumer products (FDSOI)
- Energy-recovery systems
- Transceivers for radio-access technologies (cellular, WLANS, WANS, IoT)
- Security systems and components



BIOGRAPHY OF **EMMANUEL SABONNADIÈRE** **LETI CEO**

Emmanuel Sabonnadière has been named Leti CEO in November 2017.

Sabonnadière, who has more than 25 years of executive leadership experience in a variety of large technology environments, joins Leti from CEA Tech, where he led the industrial-partnership program. He brings a strong background in new-technology development with broad private-sector expertise in operational excellence, team building and guiding multicultural organizations in business transformation in Europe and globally.

Prior to joining CEA, Sabonnadière was CEO of the Philips Lighting's Business Group Professional in Amsterdam. From 2008 to 2014, he was CEO and chairman of General Cable Europe in Barcelona, and from 2005 to 2008 he served as CEO of NKM Noell in Würzburg, Germany. Before that, he served as vice-president of Alstom T&D for five years. Early in his career, he held multiple positions at Schneider Electric, including managing director of development for equipment units.

During his career, he has designed and implemented strategic plans for process optimization, product redesign-to-costs, market repositioning and system development.

Sabonnadière holds a Ph.D. degree in physics from the École Centrale de Lyon, an MBA degree from Ecole Supérieure des Affaires de Grenoble and an engineering degree in information technology from the Université Technologie Compiègne.

Sabonnadière is a fully qualified instructor at the ski school in Les Ménuires, and member of the advisory board of IAC.

LETI STARTUPS@CES2018

Leti stands behind its high-tech startups. Whether it is through patent licenses, common labs, or spin-offs, Leti actively supports the creation of value and jobs by launching promising new high-tech businesses. Over the course of the past 30 years, 60 startup companies have benefited from the Leti Startup Program, including Soitec (IPO), Sofradir, ULIS, Tronics (IPO), Movea (acquired by InvenSense), MICROOLED, and in more recent years, AVALUN, Primo1D, EnerBee, iskn and BeSpoon, to name a few.

The Leti Startup Program is now stepping up the pace to develop a more collaborative and open process of innovation, to generate more startups. Geared towards both entrepreneurs and the whole innovation and entrepreneurial ecosystem in Grenoble, France, and beyond, the program now accelerates between 15 and 20 high-tech startups per year, in such fields as biotech, cleantech, virtual and augmented reality, smart manufacturing and industrial and consumer applications.

There is four Leti start-ups at CES2018:



MOOVLAB

Interactive athletic training circuits for Fitness 2.0

Moovlab's fun, interactive training circuits can be adapted to each user's personal fitness goals, making them a key weapon in any gym's customer-retention arsenal.

Europe's health and fitness market is booming, with 56 million club members across the continent. However, the average member stops working out after just three months—a trend Moovlab intends to reverse with its interactive training circuit platform. The platform is made up of sensors equipped with algorithms that recognize movements and measure physical activity and a "hub" that manages the training circuits. The technology is protected by fourteen patents and proprietary Leti know-how. Users configure their fitness goals—lose weight, train for a marathon, or just feel better—and the platform recommends training circuits that can be completed at the gym.

During the workout, the user's physical activity level is assessed in real time. Progress can be measured from one workout to the next, and more difficult circuits can then be completed.

Moovlab is also developing multi-player active games with storylines that include sports like boxing, cycling, and rowing. The company's first game, "Escape to Mars," was co-developed with game designer UrbanExpé and is offered by Keep Cool, France's third-largest chain of fitness clubs.

Join Moovlab at CEA Tech Village, Eureka Park, **Booth #50653**.

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LETI STARTUPS@CES2018



Biochemical sensors for Odor detection

Aryballe Technologies uses a combination of biosensors, databases, and signal processing to develop multi-purpose electronic noses for both commercial and consumer applications. Aryballe Technologies leverages the exceptional versatility of its biochemical sensors to deliver a universal detector that, in the near future, will be able to detect thousands of different scents stored in a database. The sensors use a typical lab testing technique—surface plasmon resonance imaging (SPR)—but are packaged in a miniaturized system. Launched in 2014, the startup has established R&D contracts with Leti and INAC and uses three patent families belonging to the CEA, CNRS, and Grenoble-Alpes University in the development of its technology. Its first product, NeOse Pro, is a portable, professional-grade odor detection device. The startup has identified more than 50 applications for its technology, including olfactory tests in the food and cosmetics industries, environmental monitoring, the detection of undesirable or dangerous household smells, and medical diagnostics. Aryballe Technologies has already signed partnership agreements with a pharmaceutical company and a household appliance manufacturer. Around 20 NeOse Pro prototypes have already been sold.

Join Aryballe Tech at Sands, Hall G (Hardware Club), **Booth #51303**.



Artificial pancreas for type-1 diabetics

Diabeloop's connected artificial pancreas will improve blood-sugar regulation and enhance quality of life for type-1 diabetics. The artificial pancreas developed by Diabeloop is made up of a continuous glucose sensor and a miniature patch insulin pump connected by Bluetooth to a dedicated smartphone equipped with algorithms developed by Diabeloop in partnership with Leti to calculate insulin doses and send the information to the pump automatically. The data are also sent to a patient monitoring center. The technology brings a major change for type-1 diabetics who, until now, had to test their blood sugar themselves many times throughout the day. Diabeloop's artificial pancreas will give patients the peace of mind of knowing all they have to do is tell the system about their meals and physical activity and their blood sugar will be regulated much more effectively than before. The efficacy of Diabeloop's artificial pancreas has been confirmed by several clinical trials (2014, 2016, and 2017). The company is now working to obtain the CE mark, a necessary prerequisite to the product's commercial release. Diabeloop has partnerships with diabetes treatment research center CERITD and around a dozen university medical centers, and has a joint lab with Leti.

Join Diabeloop at Sands, Hall G (La Poste), **Booth #50722**.



Air quality monitoring sensors and services

eLichens sensors are miniaturized, connected, powerful, and ultra-energy-efficient, making them ideal for hyper-local air quality monitoring in residential and commercial buildings. eLichens worked with Leti to develop a particularly innovative NDIR (nondispersive infrared detector) CO₂ and CH₄ sensor that is six times smaller than its direct competitors, uses ten times less energy, and is drift-proof throughout the product lifetime. The sensors, when used with eLichens' data fusion and analysis software, form a complete and connected air quality monitoring solution that can be implemented at a variety of scales, from workshops and factories to neighborhoods and entire cities. eLichens sells its products to systems integrators on the industrial security, HVAC, smart city, home automation, gas leak detection, and automotive cabin air quality monitoring markets. The company has a portfolio of 30 patents and a joint lab with Leti, where it conducts research and development to maintain—and lengthen—its technological lead.

Join eLichens at Sands, Hall G, **Booth #52134**.