

## Press Release

# ÉTS and Safran inaugurate the Safran Industrial Research Chair on the Development of Sustainable Aero-Propulsion Systems

Montréal, December 12, 2019 - The holiday season is almost here, bringing with it the busiest airports of the year. Unfortunately, this time of friends, family and festivities comes at a price. World air traffic, which is growing by 4 to 5 percent each year, produces more than 2 percent of all human activity-related greenhouse gases. François Garnier, a faculty researcher at the École de technologie supérieure (ÉTS), plans to help resolve part of this problem by reducing fine and ultrafine particles emissions from aircraft engines at their source.

Thanks to the Safran Industrial Research Chair on the Development of Sustainable Aero-Propulsion Systems, inaugurated on December 5th at ÉTS, Professor Garnier will work with Safran, a major aviation industry supplier, to design cleaner aircraft engines.

*“To create cleaner engines, we must fully understand the physical and chemical processes that result in the formation of polluting emissions, both in the engine components and the propulsive jet,”* explained Professor Garnier. His research team will develop models to better identify the dynamics of aerosols and their gaseous precursors. Experimental data will be used to calibrate the models for the best possible representation of reality.

*“Every two seconds, somewhere in the world, an aircraft equipped with a Safran engine takes off. Moreover, though civil aviation has greatly improved its energy efficiency and reduced its effects on air quality over the past few decades, the growth in air traffic is putting pressure on the environment. Faced with this reality, Safran is exploring all possible avenues toward reducing the environmental footprint of the aeronautical industry, and our participation in this Chair will help us achieve that goal,”* said Sylvain Boisvert, General Manager Canada of Safran Engineering.

A transitional certification standard currently exists for non-volatile particles – smoke emissions – which are found in the vicinity of airports, but it does not apply to volatile particle emissions (vPM). This will soon change: two new international standards will come into effect in 2020 – one for vPM emissions and another related to CO<sub>2</sub> emissions. Research work led by François Garnier will help OEMs adapt to the new standards.

The world aerospace industry, through the International Civil Aviation Organization (ICAO), has committed to reducing its environmental footprint. Several research projects directed by ÉTS

aeronautics researchers focus on various fronts identified by ICAO, such as biofuels, the design of more fuel-efficient engines and of electric and hybrid propulsion systems, reduction of aircraft mass and improved management of the various phases of flight.

### About [Safran](#)

Safran is an international high-tech industrial group that specializes in aeronautical propulsion and equipment as well as the space and defence sectors. With a presence on every continent, the Group employs over 95,000 and had revenues of € 21 billion in 2018. Alone or in partnership, Safran holds a leading position in its European and world markets. To keep pace with evolving markets, the group conducts research and development programs that in 2018 generated total spending of approximately € 1.5 billion. Safran Group is listed on Euronext Paris and is included in the CAC 40 and Euro Stoxx 50 indexes. For more information: [www.safran-group.com](http://www.safran-group.com) / Follow [@Safran](#) on Twitter

### About ÉTS

ÉTS is one of the ten constituents of the University of Québec network. It trains engineers and researchers recognized for their practical and innovative approach, the development of new technologies and their ability to transfer their knowledge to private enterprise. Roughly one out of four Québec engineers graduates from ÉTS, which counts some 11,000 students, including 2,650 graduated students. Specialized in applied engineering education and research, it maintains a unique partnership with the business and industrial sector. For more information, visit: [etsmtl.ca](http://etsmtl.ca).

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### Information:

École de technologie supérieure (ÉTS)  
Chantal Crevier  
[chantal.crevier@etsmtl.ca](mailto:chantal.crevier@etsmtl.ca)  
Communications Department  
514 396-8800, ext. 7893

Safran  
Catherine MALEK  
[catherine.malek@safran-group.com](mailto:catherine.malek@safran-group.com)  
T [+33 \(0\)1 40 60 80 28](tel:+33(0)140608028)

Isabelle JAVARY  
[isabelle.javary@safran-group.com](mailto:isabelle.javary@safran-group.com)  
T [+33 \(0\)1 40 60 82 20](tel:+33(0)140608220)