



Press release
Toulouse (France), January 19th, 2016

The IRT Saint Exupéry is launching NanoRun 2016, its 1st International Forum on nanoscale microelectronics

NanoRun 2016 is the 1st IRT Saint Exupéry Nanoscale Runners International Forum to promote disruptive technologies in interdisciplinary technics and understanding of Space, Aeronautical, Ground Transportation, Energy and Environment, or Telecommunication Systems. It is scheduled for February 23 and 24 on the premises of the INP-Enseeihtⁱ school of Toulouse in France. Supported by Aerospace Valley competitiveness cluster, IRT Nanoelec and LAAS-CNRSⁱⁱ, NanoRun 2016 edition highlights industrial, commercial, and government endeavours delivering high performance and low consumption systems based on nanoscale products operating under harsh environment. The focus of the forum will be the reliability of power transistor gallium nitride (GaN) technology and Ultra Large Scale integrated silicon deep submicron microcircuits (DSM). Nowadays, silicon chips assembled in smartphones and tablets are including more than 10 billion electronic transistors. Under these conditions, how to reach and guarantee targeting 'zero defect' for more than ten years in operation as required for high reliability applications?

The **Nanoscale Runners** are these actor builders - industrial players, manufacturers, agencies or laboratories - those who are engaged in the **cutting edge nanotechnology**, develop our communications and entertainment activities. They are hunting fundamental principles of quantum physics in uncharted seas close to science frontiers. The **global race focused on miniaturization** creates an exciting technical challenge in this quest to re-ignite Moore's law saying each new generation of integrated circuits will double number of transistors every 18 months. The Nanoscale Runners tackle this technology node down to the extreme scale of a few nanometers.

GaN technologies are Nanoscale drivers: *"Semiconductors fuel innovation, creating the backbone of technology advancement and subsequently, the economy at large,"* said Alex Lidow, EPC (Efficient Power Conversion) CEO and co-founder. *"It has been my driving passion to save energy by developing more efficient semiconductors. The innovative team at EPC has delivered the industry's first off-the-shelf enhancement-mode gallium nitride transistors and ICs and will continue to partner with our customers to use GaN to change the way we live."*

Reaching the limits of Moore's law, **silicon Deep submicron technology chipset vendors are new more Nanoscale Runners:** technologies in the leading-edge silicon technology market are bulk processes but foundry business is heating up as some new and large players are entering the 16-14 nanometres market even more recently IMECⁱⁱⁱ claimed that they had fabricated 5 nanometres test chips.

Two recognized international experts on the emergence of breakthrough technologies have been selected to lead the conference discussions with plenary session presentations:

- From the academic environment
Professor **Joseph Bernstein (University of Ariel, Israel)** internationally recognized expert in the area of reliability associated with these new GaN transistors and DSM. He collaborated with the CALCE, University of Maryland, USA (renowned research centre on the reliability of electronic systems), NASA, the US Air Force and the US Navy to develop a new model to predict reliability of complex systems in an operational environment. He is leading the reliability program on microelectronics at the University of Ariel in Israël.
- From the industrial point of view
Dr. **Alex Lidow, co-founder and CEO of EPC (Efficient Power Conversion)**, a well-known producer of power GaN transistors. In addition to his seminal work in the use of gallium nitride for semiconductors, he is the co-inventor of the power HEXFET™ transistor. On the academic front, Dr. Lidow serves as Trustee of the California Institute of Technology (CalTech) and co-authored the textbook, "*GaN Transistors for Efficient Power Conversion*" published by J. Wiley and Sons. Most recently, Dr. Lidow was selected as the recipient of the 2015 "**SEMI Award for North America**" for the innovation of power device technology, enabling the commercialization of GaN.

Following the plenary sessions, NanoRun 2016 will feature panel discussions with internationally prominent researchers working on frontiers of nanotechnology science and engineering. Presentations will be given by managers, experts and scientists from leading companies and research centers including **ST Microelectronics**, **CNES**^{iv}, **CEA Leti**^v, the **DGA**^{vi}, the **ESA** (European Space Agency), **Thales Avionics**, **Airbus Innovations Group** and **Zodiac Aerospace**.

More details and registration information: <http://www.irt-saintexupery.com/nanorun2016>

About IRT Antoine de Saint Exupéry

IRT Antoine de Saint Exupéry is a partnership of public and private research institute of technology in aeronautics, space and embedded systems leading research and technology in high performance multi-functional materials, more electrical aircraft and embedded systems. Its world class expertise and technology platforms, as well as its collaborative environment boost the maturation and transfer of breakthrough technologies (TRL 4-6) to its industrial partners. Launched between 2012 and 2013, the 8 IRTs benefits from the French Government Programme "Investissements d'Avenir" (Investments for the Future Program) to boost high value competitive technological sectors.

Press contact: Anne Mauffret – Mob. +33 6 77 72 58 93 – anne.mauffret@comsci.eu

ⁱ National Polytechnic Institute of Toulouse - Electrical engineering, Automation, Electronics, Computer Science, Applied Mathematics, Hydraulics, and Telecommunications

ⁱⁱ Laboratory of Analysis and Architecture of Systems of the French National Centre for Scientific Research

ⁱⁱⁱ Institut de microelectronique et composants

^{iv} French National Centre for Space Studies

^v Leti is a lab from the French Alternative Energies and Atomic Energy Commission with activities in energy, IT, healthcare, defence and security

^{vi} French Department of Defense DoD