



CARAC an event to learn more about advanced techniques of characterisation

CARAC 2020 will take place as an online meeting over half a day with online talks (English spoken).

The conferences will take place in the morning of November 24th between 9 and 12 am. In the context of COVID19 pandemic this 7th edition will be only an online event. It will be **an occasion to learn more about materials characterisation techniques for the industries and new facilities in the Grenoble area.**

After a short introduction, each registered person will attend to different speeches. Conference organizers will introduce upgrades and news in keynote talk. Our business team and scientists will then be available to schedule a meeting with you.

What is CARAC ?

CARAC is a unique event dedicated to **materials characterisation for industry**. It is led by the Technological Research Institute [IRT Nanoelec](#), a real innovation accelerator for the microelectronics industry. As part of its activities, and in association with [European Synchrotron ESRF](#), the [Institute Laue Langevin \(ILL\)](#) (an international research center at the leading edge of neutron science and technology), [The Laboratory of Subatomic Physics and Cosmology \(LPSC\)](#) and the French [Alternative Energies and Atomic Energy Commission \(CEA\)](#), IRT Nanoelec created the [Platform for Advanced Characterisation Grenoble \(PAC-G\)](#).

CARAC event is supported by PAC-G with the participation of Consortium des Moyens technologiques Communs - Institut Polytechnique de Grenoble (CMTC-INP), the Néel Institut of Grenoble and Institut de Recherche Interdisciplinaire de Grenoble (IRIG).

This facilitated half day session can **compress months of getting to know each other to a few short hours**. It will bring together a panel of characterisation experts for lectures

in English and industrial case presentations on characterisation techniques and their applications in the **fields of microelectronics and semiconductors**.

[Ennio Capria](#), the director of the Characterisation Programme of the IRT Nanoelec, says *"Carac 2020 aims to bring the scientific excellence available in the large scale research infrastructures of Grenoble right at the heart of the R&D main challenges of industry. We can bring novel solutions that go beyond what is commonly available in the laboratory. With the support of our instruments we can answer unmet needs from industry. This will result in an acceleration of their time to market and the possibility to manufacture more reliable products, with an evident advantage on a more and more competitive market."*

This 7th edition will **focus on improvements in the facilities of the various characterisation players**, such as the starting up of the new extra-bright light source at the ESRF-EBS European Synchrotron, the ambitious "Endurance" project at the Institut Laue-Langevin (ILL) or the improvement of the GENESIS accelerator at the LPSC.

Aware of the limits of a remote event, the organizers preferred to concentrate the conferences on half a day, whereas the last event was held over two days.

Registration is done directly online on the dedicated website:

<https://irtnanoelec.virtualrooms.actandmatch.com/373418869/register>

The IRT Nanoelec

It is a consortium of 21 private and public sector organizations. They collaborate on multi-partner R&D programs, on technology diffusion, and training programs to help companies create value and grow in the areas of digital transition, energy transition, and secure connected systems.

Nanoelec leads seven **research programs** dedicated to the development of breakthrough technologies and methodologies in the field of micro and nanoelectronics. One of these programs focuses on the characterisation and irradiation of components and systems, in particular thanks to the large European instruments present on the scientific peninsula of Grenoble, and in particular using neutrons (ILL, LPSC) and X-rays (ESRF). In addition, in the program, CEA-LETI can support the development of new methodologies, by bringing its expertise in nanoelectronics and by relying on the skills of the Platform for Nano Characterisation (PFNC). Finally, the presence in this program of key industrial partners in the sector, offers a tangible opportunity to ensure development in line with current industrial needs, **to accelerate R&D and Innovation actions**. Currently, Schneider Electric, SOITEC and STMicroelectronics are partners in the characterisation program.

About Characterisation

To understand a material, it is essential to analyze its properties, i.e. to characterise it. To do this, many different analytical approaches are available to scientists. Those proposed on the PAC-G by the IRT Nanoelec (through the infrastructures of ESRF-EBS, ILL and LPSC) provide characterisation tools dedicated to micro/nano-electronic innovation. Once the industrialist has presented his challenge, that it has been evaluated and that an action plan has been approved, PAC-G organizes access to the major European instruments available at ESRF,ILL.

What is the goal of characterisation on large instruments?

This program aims to enable the industry of semiconductors and microelectronics in general to access the characterisation power provided by Grenoble's major large scale European instruments (ESRF, ILL, LPSC). These facilities can provide performances beyond the ones available in the laboratory and provide new insights into the materials and devices. It is a customer focused approach and can result in a real acceleration of the R&D activities of the industrial partners, and provide novel solutions non available elsewhere.

CARAC is a unique opportunity to meet both scientists and business team of research infrastructures in a same place. If you wish to contact our scientists before the event, write to ennio.capria@esrf.fr Our team will introduce you to the right person whom will provide you the answer to your questions.

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