

## 12<sup>th</sup> ASCENT Newsletter – January 2019

### #1

### ASCENT visitor experience at Tyndall

Olga Ishchenko, from TE-OX in Orsay (France) spent a week at our electrical characterisation facilities in Tyndall. Her work on VO<sub>2</sub> films for Microwave and RF switches required the electrical characterisation at very high frequencies (up to 50 GHz) in a range of temperatures from RT to 85 °C. These RF measurements allowed to better understand the metal-insulator transition of these materials. The samples were also optically characterised. The results of this work supported by ASCENT will allow TE-OX to optimise the synthesis of the VO<sub>2</sub> films and their physical properties to improve their switching performances and lead to fully operational RF and microwave devices.



*Olga and Mircea discussing analysis results*

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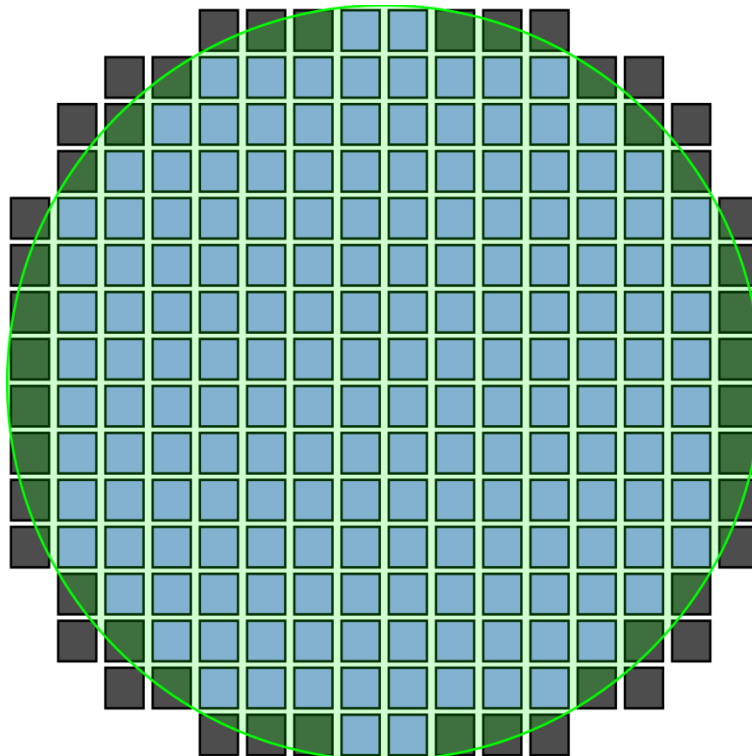
This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 654384.

## #2

### Second White Paper coming soon!

Late in 2018 the first white paper was released from one of the Joint Research Activities associated with the ASCENT programme entitled "*An Exploration of Contamination Types and Contamination Control Techniques Currently used in the Fabrication of Nanoelectronics*".

Now the same group are preparing to release another white paper entitled: "*Failure mechanisms and device forensic techniques in existing and extended CMOS devices*"



*Short extract from the upcoming White Paper ...*

A review is provided of reliability and failure mechanisms of existing and extended CMOS devices, tracking the evolution of transistors through the adoption of metal gate high- $\kappa$  dielectrics to FinFETs and beyond. Emphasis is placed on existing device forensic methods for these advanced nodes, culminating in a review of new emerging techniques.

#### **Take action!**

If you would like to have a copy emailed to you directly when it is released shortly please email Paul: [paul.roseingrave@tyndall.ie](mailto:paul.roseingrave@tyndall.ie)

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## #3 EF ECS Conference Report

The ASCENT team had a stand at the EF ECS 2018 Conference in Lisbon on 20-22<sup>nd</sup> November 2018. EF ECS is one of the most important conferences of the year as it brings the industry and academic communities together to learn about latest developments and take a strategic approach to how we can work together to strengthen the European electronics industry. This year the focus was on Europe's Digital Future and how we need to innovate to survive in a highly competitive global market.



*Nicolás setting up the ASCENT stand along with photos from the conference*

The ASCENT stand was busy throughout the event and we had really interesting discussions with potential users of the ASCENT programme. It was also an opportunity to discuss with policy makers about the importance of funding access to infrastructure for researchers so that we can contribute to future innovation in a meaningful way. All the EF ECS 2018 presentations are available on-line at <https://efecs.eu/programme.html>

Lisbon was a really beautiful venue for the conference and we look forward to EF ECS 2019 in Helsinki (19-21 November 2019).

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## #4

### Still open for business! – just 3 months remaining

With just over 3 months remaining in the ASCENT project we are appealing to anyone who wishes to know more about how to access the partner infrastructure to make contact immediately.



*Selection of visiting researchers through the ASCENT programme*

We will entertain short projects and would be delighted to discuss your ideas by phone or email.

Simply email Paul ([paul.roseingrave@tyndall.ie](mailto:paul.roseingrave@tyndall.ie)) to start discussions.



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