

## 1<sup>st</sup> ASCENT Newsletter – February 2016

### ASCENT attracts worldwide interest

ASCENT was launched at the Tyndall National Institute, Ireland in November 2015. Professor Jim Greer outlines this new exciting project, which will deliver Access to European Nanoelectronics Infrastructure at the three partner sites; imec (Belgium), CEA-Leti (France) and Tyndall National Institute (Ireland).



I am delighted to report that there has been worldwide interest in the ASCENT programme since we launched last November. To date over 100 researchers have signed up as members of the ASCENT network from 27 countries. These include researchers from Universities, small companies and large multinationals. 36 members have now followed up with specific technical enquiries and we are very pleased to have 6 *virtual access* users already up and running. We expect to have our first *transnational access* users approved shortly and they will have immediate access to our advanced nanoelectronics facilities. I encourage all researchers to sign-up, enquire and apply to ASCENT– it's a very simple process and we are here to help you with any questions you may have.

A key aspect of ASCENT is that we have established an independent *Industry Innovation Committee*. This steering Committee will ensure that access activities address key technological topics relevant to the European nanoelectronics industry. They will also outline the technical challenges facing the industry and foster the rapid uptake of research outputs. I am pleased to announce that initially four leading companies (Intel, Qualcomm, STMicroelectronics and Synopsys) have agreed to participate on the Committee and are already actively discussing how ASCENT can best address the many challenges created by an ever-evolving and demanding digital world.



We have also established a *Users Group* that will represent the research community and contribute to defining topics for ASCENT Workshops and Joint Research Activities. The inaugural group includes leading researchers from ETH, Switzerland; University of Glasgow, UK; Universitat Rovira i Virgili, Spain and the Technical University of Sofia, Bulgaria. Members of the Users Group are also on the Selection Panel which

decides which applications for access are funded.

ASCENT is a unique opportunity to access truly world-class facilities in imec, Leti and Tyndall. I hope you join us on this exciting programme and that together we can build a really interactive network of nanoelectronics researchers. I am confident that by opening the doors to leading research infrastructure we will produce new and exciting results and have a real impact on future advanced CMOS device development.

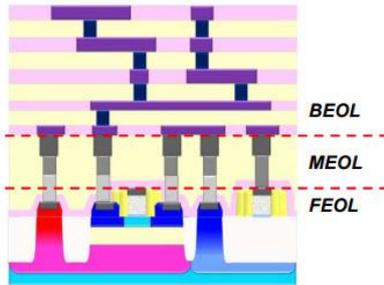


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## 1st ASCENT Virtual User Approved

Dr Wang from Glasgow University is the first researcher to access the imec and Leti's CMOS datasets through the ASCENT programme.

Since then, researchers from Bulgaria, France, Ireland, Armenia and Belgium have received access and are using the advanced CMOS data to enhance their research.



Dr Xingsheng Wang is a Research Associate with Device Modelling Group in the School of Engineering at University of Glasgow. Dr Wang's current research interest involves nanoscale MOSFET devices, TCAD and atomistic modeling and numerical simulations. He is particularly interested in intrinsic parameter fluctuations due to statistical variability and reliability. The modelling and simulation tools include TCAD suite Sentaurus and the Glasgow 'atomistic' simulator for process and device simulations; BSIM4, BSIM-CMG and UTSOI2

for compact modelling and SPICE-like simulators. He has been developing advanced methodologies and practices in variability-aware design-technology co-optimization (DTCO) of nanoscale devices.

### *What will you use the CMOS datasets for?*

*I have been working in advanced MOSFET architecture and compact modelling for many years and I am currently developing novel statistical compact models. I am coordinating the EU H2020-funded REMINDER project on behalf of Prof. Asenov at University of Glasgow and access through ASCENT came just at the right time for me. My key questions are, for example, how do the industry researchers and developers characterise the silicon data, how do they deal with the technology challenges and how do they model the variability?*

### *Have you already started using the datasets in your research?*

*Yes, I have accessed the data and I am currently reading and digesting the data and will be ready to use them in the near future.*

### *Did you find it easy to gain access?*

*Yes, it is quite easy to obtain access once the password is gained.*

### *Are there any comments / feedback for the ASCENT project team regarding the datasets?*

*Not yet, since I am still decomposing the data, but I intend to report back once I have had time to do further work.*

### *Is there anything else you'd like to see available in these folders?*

*Basically the current form is more than I expected but a more detailed text description would be very helpful. For example, I would like more information about imec finFET, its process and device information. In addition, some parameters are not yet described even though readers can gain understanding from the text.*

## Profile: Dr Valentina Terzieva (imec)

Dr Valentina Terzieva manages the ASCENT project in imec. She has been at imec for 16 years and was initially involved in research activities for CMOS metallization processes and Ge materials research. Now she is responsible for public funding strategy in imec's Department of Corporate, Business and Public Affairs. Valentina has always been involved in building collaborations with external researchers and ASCENT is an ideal program for her as it provides a funding mechanism to enable these collaborations.



Valentina Terzieva received her Master's Degree in Chemistry in 1994, and PhD in Chemistry in 1999, both from the University of Sofia, Bulgaria. She completed a post doc scholarship at the Department of Materials Engineering, Catholic University of Leuven (KULeuven), Belgium. Her research was focused on the electrochemical synthesis of metal composite coatings.

In January 2000 she joined imec's Interconnect Industrial Affiliation Program and was involved in research activities focusing on the development of Back-End-of-Line CMOS processes (metallization and chemical-mechanical planarization). In 2004 she joined the Ge III-V materials program at imec where she specialized in the development of different routes for the manufacturing of 200mm Ge, Germanium-on insulator and Silicon-Germanium-on-insulator substrates compatible with imec Si processing line.

In 2007 she joined imec's Business Development Department as Sales Manager where her responsibilities included pursuing and managing new partnerships with industrial partners such as IC logic and memory companies, equipment suppliers or materials suppliers in variety of scientific and technical fields.

In 2011 she joined the Department of Corporate, Business and Public Affairs at imec where she is responsible for the Public Funding strategy of imec in the area of CORE CMOS. This covers areas such as nanoelectronics, semiconductor manufacturing, equipment development and assessment, integrated metrology and advanced process control.

The work includes exploring EU sources for early identification of initiatives and upcoming calls for proposals in CORE CMOS and beyond, nanomaterials and infrastructure and follow-up to policy developments in EU funding programs such as Horizon 2020, ECSEL JU, FET flagships, CATRENE, EUREKA, as well as national funding schemes/ instruments.

In the last year she has also focused on exploring the funding opportunities with partners from the Eastern European Countries and establishing contacts/collaboration with various governmental, public and scientific bodies where a match with imec strategy is identified.



In addition to these activities Valentina manages interactions and collaborations between imec and all Flemish Universities.



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