

6th ASCENT Newsletter –July 2017

#1 Video: Prof. Teranishi, Okayama University, Japan, visited Tyndall to carry out High Frequency Characterisation of Ferroelectric Materials. This short video gives an insight into his research work & experience of ASCENT.



[Watch the video->](#)

#2 See you at ESSDERC 2017 - Leuven, Belgium 11th-14th September

ASCENT will deliver a workshop in conjunction with MOS-AK on Monday 11th September 2017. This is being run during the ESSDERC 2017 Conference which is being held in Leuven, Belgium.



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

Professor Jim Greer (Tyndall), Dr Thomas Chiarella (imec) will present along with a case study presented by an invited researcher who has used the ASCENT programme. There will also be ASCENT researchers present to assist with any questions and an opportunity to discuss proposal ideas

To arrange a brief meeting with ASCENT simply reply to this email and we can schedule one to suit you during the Conference.

ESSDERC: <http://www.esscirc-essderc2017.org/>

#3 Publications from ASCENT projects

One of the important deliverables of ASCENT projects is to release their research information to other researchers by publishing results in Conference & Journals. This is important to further share researchers findings so others in the research community can benefit and drive the research forwards in a timely manner.

Though the ASCENT programme is running for a limited time we are beginning to see these coming onto the research arena. Here are some examples already published:

ASCENT Project Ref No 050

P. Schüffelgen; D. Rosenbach; E. Neumann; M.P. Stehno; M. Lanius; J. Zhao; M. Wang; B. Sheehan; M. Schmidt; B. Gao; A. Brinkman, "Stencil lithography of superconducting contacts on MBE-grown topological insulator thin films", Journal of Crystal Growth ...

DOI: 10.1016/j.jcrysgr.2017.03.035

ASCENT Project Ref No 030

J. Muñoz-Gorrioz; S. Monaghan; K. Cherkaoui; J. Suñé; P.K. Hurley; E. Miranda, "Spatial analysis of failure sites in large area MIM capacitors using wavelets", Microelectronic Engineering, vol 178, pp. 10-6

DOI: 10.1016/j.mee.2017.04.011

ASCENT Project Ref No 030

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A. Rodriguez-Fernandez; S. Monaghan; J. Suñé; P.K. Hurley; X. Aymerich; E. Miranda, “Nonhomogeneous Generation of Filamentary Paths in High-K Oxide Films Caused by Localized Electrical Stress”, International Workshop on Oxide Electronics, October 2016, Nanjing, China

ASCENT Project Ref No 030

J. Muñoz-Gorri; S. Monaghan; K. Cherkaoui; J. Suñé; P.K. Hurley; E. Miranda, “Exploring the Breakdown Spot Spatial Distribution in Metal-Insulator-Metal Capacitors Using the Wavelets Method”, DRIP XVII, 17th Conference on defects-recognition, imaging and physics in semiconductors, October 2017, Valladolid, Spain

ASCENT Project RefNo 011

ASCENT Project RefNo 036

T. Karatsori; C. Theodorou; R. Lavieville; T. Chiarella; J. Mitard; N. Horiguchi; C.A. Dimitriadis; G. Ghibaudo, “Statistical Characterization and Modeling of Drain Current Local and Global Variability in 14nm Bulk FinFETs”, 30th IEEE International Conference on Microelectronic Test Structures (ICMTS), Grenoble (France), 27-30 March 2017, pp. 49-53

DOI: [10.1109/...???](#)

ASCENT Project RefNo 043

M. Karner; O. Baumgartner; Z. Stanojević; F. Schanovsky; G. Strof; C. Kernstock; H. W. Karner; G. Rzepa; T. Grasset, “Vertically stacked nanowire MOSFETs for sub-10nm nodes: Advanced topography, device, variability, and reliability simulations”, IEEE International Electron Devices Meeting (IEDM), San Francisco (USA), 3-7 Dec 2016, pp. 30.7.1-4

DOI: [10.1109/IEDM.2016.7838516](#)

ASCENT Project Ref No 029

Ye, Liang, “Molecular monolayers for doping silicon: from doping dose control to device applications”, PhD thesis, Chapter 6, pp. 77-90; Univ. of Twente, ISBN 978.90.365.4149-7

DOI: [10.3990/1.9789036541497](#) (Open Access)

Univ Twente Repository

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#4 ASCENT network survey feedback

In May we sent an email to all members of the ASCENT network inviting you to complete a short survey. Thank you all for your feedback which provided useful information and was presented at the mid-term review of ASCENT held in Brussels on 17th May last.

Key stats from the survey (based upon 70 replies)

85%: Yes, programme is relevant.

75%: Have not applied for access yet.

44%: Plan to apply.

88%: Rated application process at highest option 'good'.

100%: Would recommend this programme to colleagues.

Some of the comments why ASCENT is recommended are summarised below:

- Access to world class cutting edge facilities for device fabrication and characterization which are not available in our country.
- Short turnaround time.
- Provides fully documented experimental data.
- Free access to well-equipped infrastructure and financial support for travel.
- Opportunity to exchange ideas and interact with experts in the field.
- Opportunity to fabricate new specific devices with enhanced performance.
- Access to state of the art devices and characterisation equipment will lead to high impact publications
- Easy access: “you only have to write a short proposal, explaining which devices you're interested in, what you're planning to do, and submit it. After a short time, you get the data, the devices, or your visit approved”.

#5 MIXDES Report:

Report from MixDes 2017 (Mixed Design of Integrated Circuits and Systems) conference in Bydgoszcz, Poland held from 22nd-24th June.

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The ASCENT team recently attended the MixDes 2017 Conference which took place in Bydgoszcz (Poland). MixDes (<https://www.mixdes.org/Mixdes3/>) is an annual Central-European forum for the presentation and discussion of recent advances in design, modelling, simulation, testing and manufacturing of micro and nanoelectronics, semiconductors, sensors, actuators and power devices.

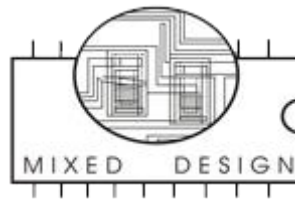


As part of our participation in MixDes we were invited to present the programme at the IEEE Electron Devices Poland-Chapter Colloquium. ASCENT organised a Workshop on Widening Participation, where we showed an overview of the programme together with detailed presentations on the facilities available at each of the partners' sites as well as an introduction to the Virtual Access to 14nm technology data. The audience, with a large representation of modelling and TCAD community, were particularly interested on the availability of data and gave a very positive response to the offerings.



ASCENT was also presented at the main MixDes conference with an invited talk. We had a booth for the full three days of the conference, where attendees were able to learn more about the programme and start discussion with the team on enquiries and potential projects.

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