



Adrian M. Ionescu, Nanolab, Ecole Polytechnique Fédérale de Lausanne, Switzerland, email: adrian.ionescu@epfl.ch

Will Democratic Artificial Intelligence Shape the Future of Semiconductor Technology?

Abstract

In this talk we will discuss the present and future challenges of semiconductor devices and technologies in terms of scaling and energy efficiency, with main focus on Edge Artificial Intelligence applications. We will illustrate the talk with examples of near-100mV electronic steep slope devices and sensors. We will particularly show there is a need to anticipate and address future Digital Hardware challenges with focus on the Edge Computation and technology-system-algorithm related topics such as: machine learning on the Edge, energy efficiency, custom form factors, close to real-time operation, enhanced security features and enhanced customer experiences.

Speaker's Bio

Adrian M. Ionescu is a Full Professor of Nanoelectronics at Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland. He received the B.S. & M.S. in Electronics and Telecommunications in 1989 from the University 'Politehnica' Bucharest, Romania. He held staff and/or visiting positions at Commissariat à l'Énergie Atomique (CEA-LETI), Centre National de la Recherche Scientifique (CNRS), and Stanford University, USA. He was Invited Professor with Tokyo Institute of Technology, Japan, in 2012 and 2016.

He is an IEEE Fellow and he was an Editor of IEEE Transactions on Electron Devices and as member of the PUB committee of IEEE –EDS). Prof. Ionescu has published more than 600 articles in international journals and conference proceedings. He is the recipient of IBM Faculty Award 2013 for contributions to the Engineering of the recipient of André Blondel Medal 2009 of the Society of Electrical and Electronics Engineering, Paris, France. In 2018 he received the IEEE George Smith Award that will be presented at IEEE IEDM, San Francisco, 2018.

In 2015 he was elected as a member of the Swiss Academy of Sciences (SATW). In the same year he received the Outstanding Achievement Award of SATW for the successful coordination and delivery of the first national Swiss Technology Outlook. In 2016 he received an Advanced ERC (European Research Council) Grant for individual senior scientists in Europe to develop a 5-year research programs aiming at energy efficient computation and sensing for Internet-of-Things.