

Novel Memory Technologies for Advanced Nodes, *Oleg Golonzka, INTEL*

Dr. Oleg Golonzka is a Principal Engineer at Intel Corporation. He received his BA/MS from Moscow Institute of Physics and Technology and completed his Doctoral and Post-Doctoral studies in Physics at The Pennsylvania State University and Massachusetts Institute of Technology. Oleg Golonzka joined Portland Technology Development Division of Intel Corporation in 2001 and worked on device and process integration of Intel's 65nm, 32nm, and 14nm CMOS nodes. Most recently he led the device development and process integration of Intel's STT-MRAM and RRAM-based embedded Non-Volatile Memory technologies.

Abstract: Recent years witnessed rapid acceleration in the development of new memory technologies. Several of them have reached performance and yield levels suitable for high volume manufacturing and commercialization. This work covers the device physics and array-level characterization for STT-MRAM and RRAM, and further discusses the suitability of these technologies for solving embedded memory needs of advanced CMOS nodes in Non-Volatile and High-Bandwidth-High-Endurance application space.