



KEYNOTE Speaker of ESREF 2016

Monday, September 19, 2016 - 13:00-15:20 Session 1: Opening Session



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"22FDX and it's application in Energy Efficient Designs, Automotive and IoT - from foundry perspective"

We were used to execute according to Moore's Law over the last decades. This road leads the semiconductor industry into highly scaled technologies: 14, 10 and 7 nanometer. However, economically a foundry should look towards the next hype building up, the Internet of Things. It is critical to offer the right technology to market at competitive cost with high performance, low power consumption and with build in connectivity. This automatically leads to Fully Depleted technologies with optional embedded RF capability as well as 28/22nm patterning, with no need of extensive use of double patterning or new light sources for lithography. 28nm is known as the "sweet spot" in Foundry Industry for yield/performance AND cost. This node is in high volume production and will be the basis to add technology features like embedded RF, Flash, High Voltage (HV) or other value add solutions and is already predicted to have a long lifetime in our industry. In particular embedded RF and HV are key to communicate with the outside analog world in a power efficient and user-friendly way.

Technology-wise, 22FDX is reusing proven 28nm processes, while adding new features. Devices on Fully Depleted SOI substrates can operate at voltages down to 0.4V with outstanding performance. This technology meets the desire of IOT products to be ultra mobile and enables small form factors. In addition, the technology setup is much simpler, requires a lower number of mask layers and is ideal for a broad range of low power devices for automotive and IOT applications at lower cost. 22FDX makes "Faster, cooler, simpler" a reality and delivers FinFET performance at 28nm costs.
