Challenges in the Present and next Generation of Graphics Processor Units

The present and future use of the graphics processor unit, GPU, shall not be limited to supporting sophisticated Internet use games and complex three dimensional video applications. In the coming years, it is expected that these graphics/video devices will act as co-processors in parallel with the CPU in these applications”.

Moving in that direction, it has been witnessed in the past few years that there has been a tremendous increase in the power dissipation of the GPU in order to address these growing applications and support their requirements. In the present lecture, the performance trend of the GPU in the past 25 years will be disclosed, as well as, its power roadmap. In addition, The ITRS roadmap will be compared in order to give a closer prospective to the growing challenge in this segment of market versus other applications.

This will be followed with the identification of the different types of thermal management techniques to provide enabling solutions to continue the growth of the performance in the future GPU.