

Future Challenges and Needs for Nanoelectronics from Manufacturing Viewpoint

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Significant effort and advances are going on in the area of nanoscale science and engineering, which would likely create new applications as well as new breakthroughs for existing technology in broad spectrum of disciplines. However, when we look back what happened in several occasions in the past, e.g. semiconductors coming in to replace vacuum tube technology and products, there were certain set of pre-requisites satisfied in the course of such new science and technology contributing at significant level to our industry and society. A major question in front of us working hard on nanoscale science and technology would be how different, as well as how similar, the nanotechnology of today and tomorrow can be as compared to several successful and also unsuccessful predecessors. This talk will look into those factors from microelectronics side in terms of technology trends and roadmaps and also in terms of applications for the foreseeable future.