

Leveraging semiconductor technology for the benefit of society

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Thanks to relentless scaling, coupled along with advances in materials and process integration of semiconductor devices have enabled the exponential growth of applications enabling sensors and information technologies that have transformed society. The level of instrumentation grows daily with ever increasing intelligence and ability to communicate and automate many processes and industries in what is now known as the Internet of Things (IoT). Thanks to these advances the world is smaller and flatter. The reality of living in a globally integrated world is upon us and is presenting us with many opportunities and challenges. This increased information content gives us a unique path to alleviate and find solutions to the problems of many of the most important issues facing the world today. These advances must remind us that we are all now connected – economically, technically and socially. But we are also learning that just being connected may not be sufficient. We must solve many problems. As engineers, we have the knowledge and the responsibility to do so. In this talk, we will discuss how Semiconductor technology and electron devices have benefited society and the world in which we live. The multiple advances in devices and materials have provided us with unprecedented amounts solutions and information at continually decreasing costs. We will provide tangible evidence that illustrates how electron devices are influencing society, enabling us to better use the energy in a more sustainable manner and changing our interaction with other people near and far. We are now able to provide many people the ability to have access to advanced technology even in the most remote corners of the planet. We must leverage these advances to expand educational opportunities while helping to preserve a sustainable and greener environment. Ultimately we must always bear in mind that the large number of scientific and technological advances must produce tangible results for the benefit and progress of humanity.