Advanced Materials for next-generation Energy and Semiconductor technology

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The purpose of this talk is to provide an overview of the most recent studies in the field of hydrogen storage materials & rechargeable battery research with the focus how computational material science can play an important role in search and design of new hydrogen storage materials & next generation battery materials. Another purpose of this talk is to provide an overview of the most recent studies in the area of materials science with focus on Semiconductor technology. The evolution of semiconductor technology, particularly Silicon (Si) technology, has been a critical driver for the technological advancements that we see around us. Going further, conventional bulk semiconductor technologies like Silicon find it challenging to meet future technology requirements. Therefore, the end of Moore's law and the emergence of beyond-Si electronics, optoelectronics, and quantum technologies are well-accepted directions of the last 15 years and so. Among various emerging technologies, 2-Dimensional (2D) semiconductors promise to offer new opportunities in semiconductor technology.