**Towards Next Generation of Computing**

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In the past 50 years computing was driven by *“smaller & denser”* resulting in *“faster & cheaper”*. Cost per function has decreased tremendously, while system performance and reliability have been improved significantly. Scaling alone is no longer sufficient and significant innovation in materials, devices and architectures is required to further improve performance. Semiconducting nanowires play an important role in that regard as they provide a new device geometry, allow for new materials to be integrated on the silicon platform and facilitate the implementation of novel device functionalities.

In this presentation I will give an overview of our recent research on III-V semiconducting nanostructures integrated on silicon for future device applications. I will cover the recent advances in experimental works that reveal the potential of these technologies, as well as discuss the most significant challenges from technology points of view, and provide perspectives on the future of semiconducting nanowires for nanoelectronics.