NANOSCIENCE COLLOQUIUM

Physics and applications of semiconductor/molecular hybrid nanostructures

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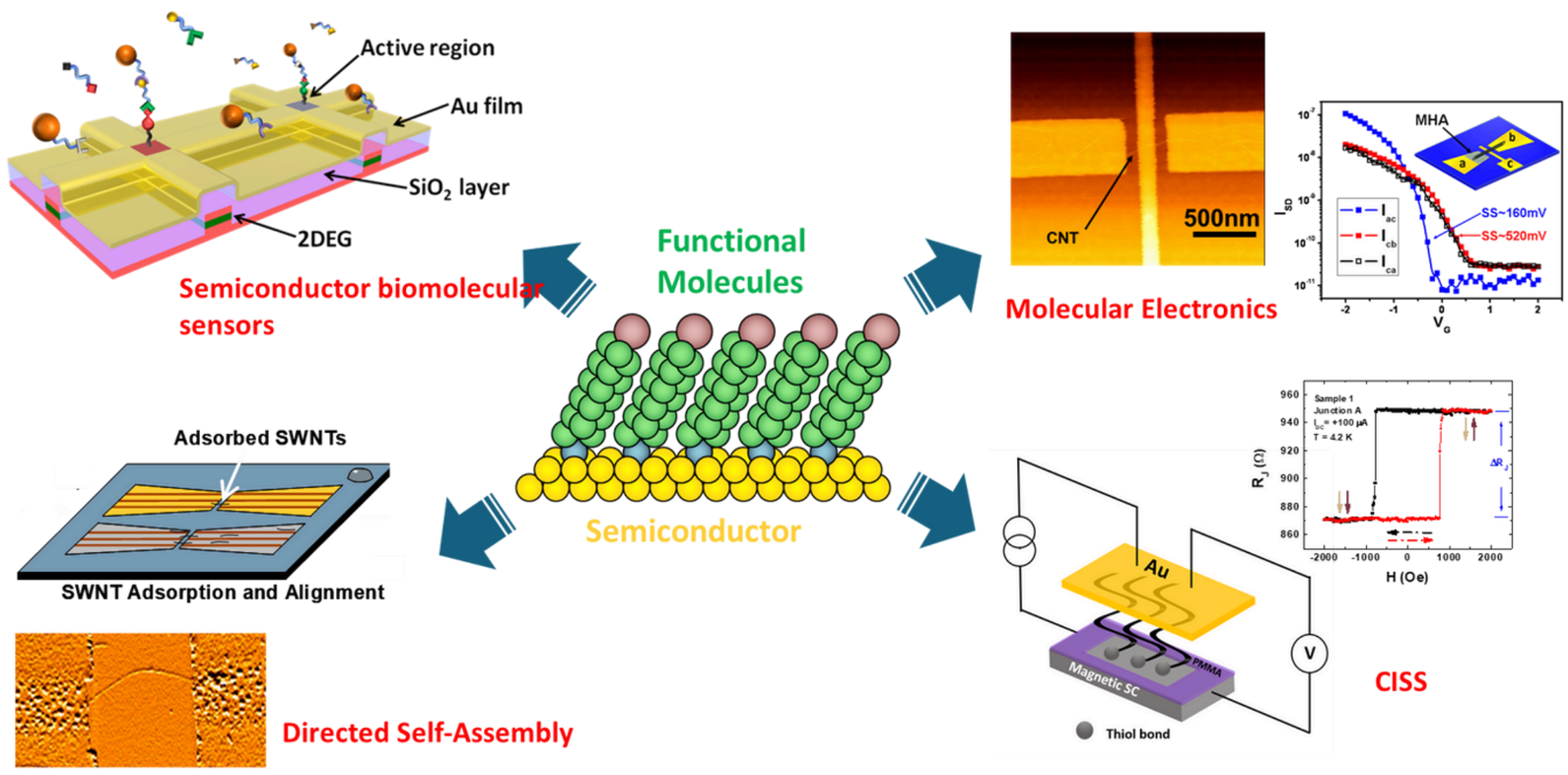
ABSTRACT:
Integration of organic molecules with inorganic semiconductors holds vast potential for fundamental physics studies and device applications. For instance, surface functionalization with organic molecules can afford semiconductor devices unusual functionalities such as molecular recognition, which can be harnessed for biomolecular sensing and bottom-up assembly of semiconductor nanostructures.
On the other hand, organic molecules can also be utilized as means of modulating and enhancing electronic characteristics of semiconductor devices, and even serve as active components for producing novel charge and spin transport effects.
In this talk, I will present several examples of research from an interdisciplinary effort focusing on the fabrication and studies of various semiconductor/molecular hybrid nanostructures, with an eye towards both demonstrating new device functions and discovering new physics.



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