Quantum transport of graphene nanostructure and its application in quantum information

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In this talk, I will report our recent quantum transport experiments on graphene nanostructure, including parallel double quantum dots, integrated single electron transistor sensor and graphene nanoribbon with superconductor leads. Several interesting phenomena such as supercurrent, multiple Andreev reflection, Fabry-Perort interference and Fraunhofer interference are observed in our experiments. The application of these graphene nanostructures in quantum information will also be discussed in this talk.