



复旦大学物理系物质科学报告

Physics Department Colloquium

From Black Phosphorus to Phosphorene

(从黑磷到二维单晶黑磷)

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摘要: Phosphorus is one of the most abundant elements preserved in earth, constructing with a fraction of 0.1% of the earth crust. In general, phosphorus has several allotropes including white, red, and black phosphorus. Black phosphorus, though rarely mentioned, is a layered semiconductor and have great potentials in optical and electronic applications. Remarkably, this layered material can be reduced to one single atomic layer in the vertical direction owing to the van der Waals structure, dubbed phosphorene, where the physical properties can be tremendously different from its bulk counterpart and needed to be further explored. In this talk, we trace back to the 100 years research history on black phosphorus from the synthesis to material properties, and extend the topic from black phosphorus to phosphorene. The physical, electrical, optical and thermal properties are highlighted, aiming at further applications in electronic and optoelectronics devices.

Time: 2:00pm, Wednesday, 2015.12.16

Location: Physics Building, Room 221B

(Cookies and coffee are served from 1:30 pm)