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Fabrication of blue phosphorene

In the last two decades, two-dimensional materials (2DMs) got into a mid of the interest of material scientists due to their tunable properties, that could open us way to new generation of electronics. Since discovery of graphene, the library of 2DMs has rapidly expanded. One of the 2DMs with a great potential is blue phosphorene (blueP) that could be useful in photovoltaics in the future. Previous attempts to prepare blueP, made mostly on Au (111) and Ag (111) substrates, didn't resolve problems of its preparation. Because of that, here we have utilized to use Cu (111) substrate that was also considered to be one of the potentially suitable substrates for preparation of blueP. In this article, we will discuss the structure of the thin phosphorus layer prepared by us on the Cu (111) substrate and compare it with the other publications. The growth was characterized by low energy electron diffraction/microscopy.

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