Ordered Vacancy Network Induced by the Growth of Epitaxial Graphene on Pt(111)

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The strength and the nature of the interaction of epitaxial graphene with metallic substrates is still widely discussed in the literature. In order to give additional contribution to this topic we have studied large areas of (√3x√3)R30º graphene commensurate with a Pt(111) structure [1]. Experimental evidence carefully combined with density functional theory calculations led us to the conclusion that this structure causes a reconstruction on the Pt surface which consists of an ordered vacancy network formed in the outermost Pt layer, and a graphene layer covalently bond to the Pt substrate.

References

[1] G. Otero et al., Physical Review Letters, **105** (2010) 216102.

Figures

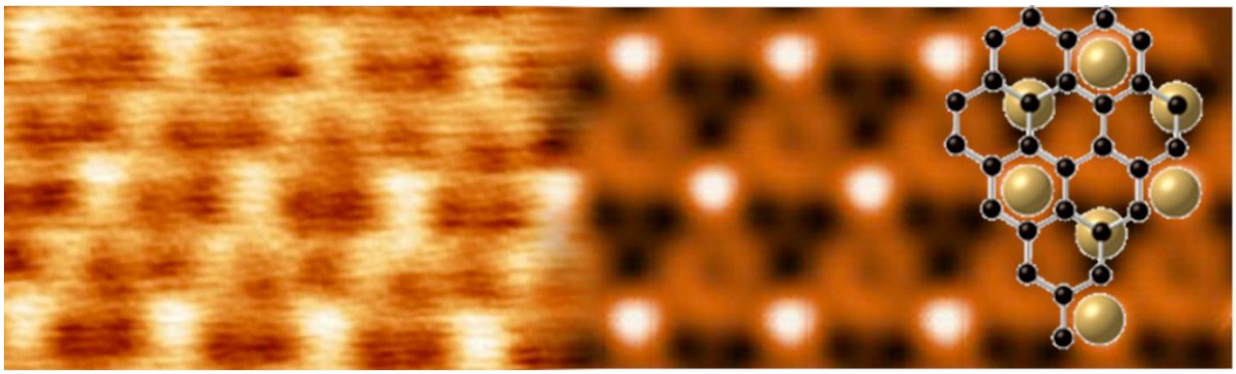

Figure caption. STM image (left) and DFT simulation (right) of the proposed vacancy model (overlaid).