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Erratum: Nanostructuring surfaces: Deconstruction of the Pt(110)-(1×2) surface by C_{60} [Phys. Rev. B 81, 041404(R) (2010)]

X. Torrelles, V. Langlais, M. De Santis, H. Tolentino, and Y. Gauthier

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In our paper, the paragraph that begins on the left column of page 3 ("Our x-ray diffraction results…vacancies on Pt, respectively.") could induce a misinterpretation of the work labeled as Ref. 18 in our paper [T. Orzali, D. Forrer, M. Sambi, A. Vittadini, M. Casarin, and E. Tondello, J. Phys. C **112**, 378 (2008)].

For this reason we substitute it with the following text which would better express the concept that authors would like to transmit to the readers. The modification doesn't change any of the conclusions/results presented on the manuscript:

Our x-ray diffraction results supply relevant information on the C_{60} interaction with the Pt(110) surface. Indeed, while we conclude a similar—albeit not identical—configuration for the C_{60} orientation with respect to the surface, the outcome of the diffraction analysis is quite at odds with density functional theory (DFT) predictions.

Basically, there are two preferred surface configurations to account for the ordering of C_{60} on Pt(110) that appear at different sample preparation temperatures, the so-called low and high temperature phases. The surface structure of the low temperature phase was studied using STM while the high temperature one was studied combining STM and DFT techniques[18].

i) The proposed structure for the low temperature phase considered a quasi-hexagonal c(4×4)-C_{60} distribution on the initial Pt missing row arrangement. Moreover, other substrate local orderings with atomic vacancies were also tested and rejected on the basis of the STM images.

ii) The studied models by STM and DFT for the high temperature phase proposed chemisorbed C_{60} on biatomic and triatomic vacancies and C_{60} adsorbed on (1×1)-Pt without vacancies.

Since the models tested by DFT omit the intermolecular interaction, i.e., only "isolated" molecules were considered the DFT results could even be extrapolated to the low temperature phase we report in this paper. The results derived from the combination of DFT and STM techniques on the models described in ii) make them more compatible with the C_{60} adsorbed on a (1×1)-Pt surface without vacancies. Consequently, as first interpretation it could be concluded that the vacancy models would be excluded by DFT for any of both phases. However, our x-rays results show unambiguously the presence of biatomic type of vacancies at the interface with fullerenes for the c(4×4) measured phase.

These results demonstrate the limitations of DFT for the considered models to distinguish between vacancy and unreconstructed type of surfaces. A C_{60}-Pt interface formed by a local arrangement with nanopits for the high temperature phase would offer a more coherent picture in the framework of C_{60} systems studied by diffraction techniques.