

# Adsorption of Functionalized Fullerene Molecules on Different Noble Metal Substrates: An STM Study

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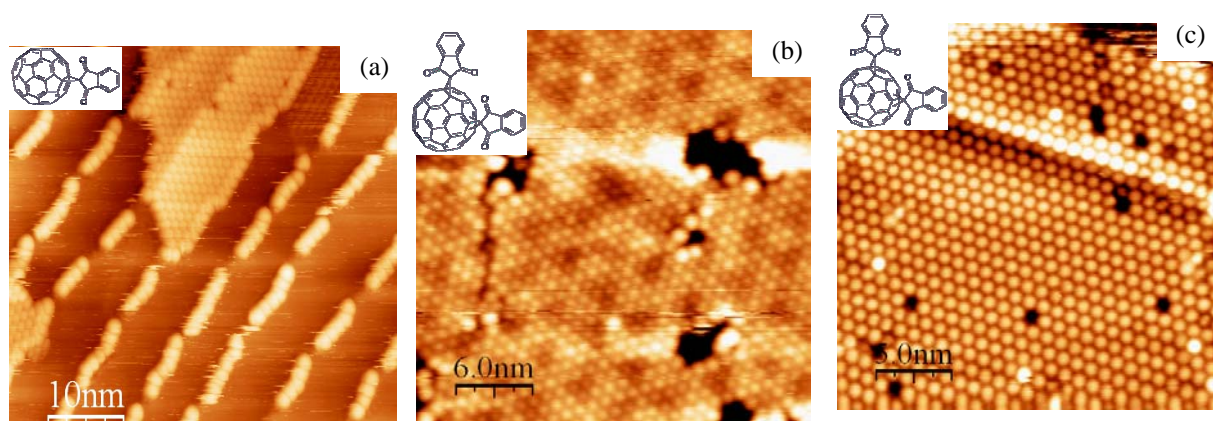
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Functionalized fullerenes are actively tested as electron acceptors in optoelectronic devices and organic solar cells. For efficient charge transfer processes, it is of fundamental importance the ability to tailor molecular levels in the fullerene and their line-up with the contacting metal electrode. Hereby, by means of scanning tunneling microscopy (STM) we have investigated the adsorption of two types of functionalized C<sub>60</sub> fullerenes, namely BINDAN and INDAN, on top of different noble metal substrates, i.e., stepped Au (788), a Gd-Au surface alloy and stepped Ag(111). None of the adsorbed species revealed a specific role associated to the functional groups, such that the motifs were the same found for C<sub>60</sub> fullerenes on top of the same substrates, previously investigated with STM. This fact, together with the absence of 1s oxygen peak in x-ray photoemission spectra, suggests that the functional groups are lost at any stage from their synthesis to the adsorption on the surface top.



STM images showing (a) step decoration of INDAN molecules on Au(788) and structure of a closed packed island ( $50 \times 50 \text{ nm}^2$ ), (b) the close-packing of BINDAN on GdAu<sub>2</sub> substrate with the Moiré reconstruction behind ( $30 \times 30 \text{ nm}^2$ ), and (c) close-packing of BINDAN on Ag (111) ( $25 \times 25 \text{ nm}^2$ )