nc-AFM study of C\textsubscript{60} islands on organic layer compound crystals

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Organic layered compound crystals have rarely been investigated by the means of noncontact atomic force microscopy (nc-AFM). This kind of materials offers the possibility to design surfaces with different chemical compounds and molecular orientations [1]. The study of adsorbed molecules on such surfaces under ultra-high vacuum (UHV) conditions is of great interest in the field of optoelectronics.

In this study the behaviour of fullerene (C\textsubscript{60}) molecules on the salt bis(benzylammonium)bis(oxalate)cupurate(II) (BNL) was investigated. BNL is a transition-metal oxalate complex which exhibits layer-type crystal structures (Fig a) [2]. The organization of the C\textsubscript{60} molecules in large islands with similar shapes and behaviour than what was previously reported on KBr(001) [3,4] was studied. These triangular- or hexagonal-shaped islands (Fig b) are formed of less than ten layers of C\textsubscript{60} molecules and are typically 20 to 30 nm wide. Successful tip-induced displacement as well as shape evolution of these islands will be presented.