

The effect of substrate and air humidity on morphology of films of L-leucyl-L-leucine dipeptide

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Abstract

The effect of a substrate and air humidity on the morphology of a thin film of L-leucyl-L-leucine dipeptide was studied. For this purpose, conditions for obtaining a thin film of the dipeptide were determined by thermal analysis. The morphology of L-leucyl-L-leucine film deposited on the surface of highly oriented pyrolytic graphite (HOPG) and mica at different humidities was studied by atomic force microscopy. It was established that film was formed on the surface of HOPG and uniformly coated with nanostructures, the sizes and shapes of which depended on the film thickness. Crystallization of the dipeptide with the formation of complex crystalline nanosized objects occurs on the surface of mica. An increase in air humidity results in a decrease in the geometric dimensions of nanostructures on the surface of the dipeptide film in the case of HOPG and complication of crystal agglomerate structure when mica was used as a substrate. © 2014 Pleiades Publishing, Ltd.

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