P-OGD11: Multilayer growth of upright standing oligo-phenyl molecules

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Para-Quaterphenyl (4P) and para-Sexiphenyl (6P) have been deposited under UHV conditions onto Au, TiO₂(110) and SiO₂ surfaces and investigated by atomic force microscopy (AFM) under ambient conditions. For some of these film/substrate combinations, growth of three dimensional crystallites consisting of lying oligo-phenyl molecules have recently been found. By carefully adjusting the growth conditions it is also possible to grow smooth multilayer films of upright standing molecules in these systems. Compared to the crystallite arrays, these multilayer films exhibit a very low rms roughness. We could identify stepped growth hillocks as well as several 100 µm² large terraces of single, double and triple layers. Depending on the substrate conditions, these films of upright standing molecules represent either the predominant morphology, or may coexist with the crystallites formed by lying molecules in a delicate equilibrium.

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