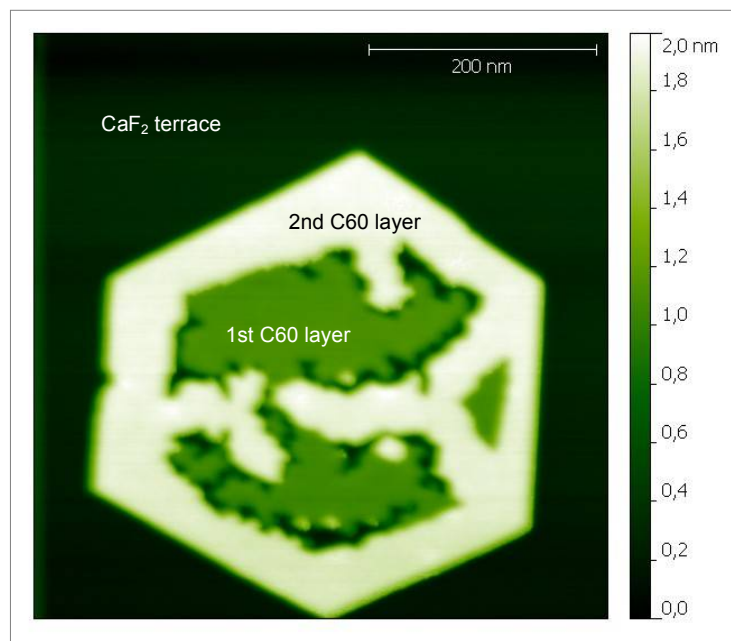


## Morphology and electric potential of C<sub>60</sub> islands on CaF<sub>2</sub>(111)

Matthias Temmen, Julia Schütze, Pascal Sommer, Jannis Lübke, Michael Reichling  
*Fachbereich Physik, Universität Osnabrück, Barbarastr 7, 49076 Osnabrück, Germany*  
E-mail: mtemmen@uos.de

The size and morphology of C<sub>60</sub> islands created by molecular deposition onto CaF<sub>2</sub>(111) strongly depends on the kinetics of structure formation that is, in turn, determined by the deposition rate and the substrate temperature.<sup>1</sup> The concept of *facilitated dewetting* has been introduced to explain the nanoscale morphology of molecular islands from the details of atomic diffusion processes at step edges and three different morphologies have been identified.<sup>2</sup>

Here, we present further experimental evidence and details of complex C<sub>60</sub> islands and reveal hitherto unexplored structures and morphological characteristics as by non-contact atomic force microscopy (NC-AFM) imaging. Kelvin probe force microscopy (KPFM) imaging is used for a detailed investigation of the surface potential of molecular islands that is found to be distinctly different from that of the fluorite surface and that varies with the height of the islands. Results for islands prepared under different kinetic conditions and differently located at the surface (on a terrace or at a step edge) are analysed to obtain an understanding of the influence of contact potential, polarisation and charge on the island potential.



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