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C_{60} on nanostructured Nb-doped SrTiO_3(001) surfaces\(^1\) BO XU, CHAO LU, ERKUANG ZHU, ZHONGYUAN LIU, YONGJUN TIAN, Yanshan University, Qinhuangdao, Hebei 066004, China — Nanostructured SrTiO_3(001) surfaces were carefully calibrated with respect to Si(111)-(7\times7) surface using STM. The surface patterns for observed nanostructures were assigned. Sequential C_{60} deposition onto these nanostructured templates reveals distinct growth modes, including discrete small C_{60} islands on c(4\times2) reconstruction surface, parallel one-dimensional C_{60} chains on (6\times2) dilines, C_{60} double-chains on (8\times2) trilines, epitaxial C_{60} close packed adlayers over (11\times2) tetralines, and two-dimensional ordered C_{60} dimer arrays on (7\times6) waffles. These structural diversities mainly stem from the relatively strong adsorbate-substrate interactions as well as the surface topography demands. The nanostructured oxide surfaces as templates are thus with great potentials in the molecular nanoarchitecture.

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