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The amazing kinetic stability of the high temperature ($\sqrt{3}$ × 6)rect. striped structure of decanethiol SAMs on Au(111) and other interesting properties. A scanning tunneling microscopy study.[1] LLOYD BUMM, DAMINDA DAHANAYAKA, ABHIJIT BISWAS, RONALD HALTERMAN, The University of Oklahoma — We present an STM study of the properties of the high temperature ($\sqrt{3}$ × 6)rect. phase of decanethiol SAMs on Au (111). Although this phase is known, it has not been extensively studied. We show a simple reliable way to grow the ($\sqrt{3}$ × 6) rect. phase and show that its coverage is 75% of the normal (2 $\sqrt{3}$ × 3)rect. phase. Although it has lower density compared to the normal alkanethiol SAM structure, it shows a remarkable kinetic stability with respect to uptake of additional alkanethiol molecules and reversion to the normal (2$\sqrt{3}$ × 3) rect. phase. Other properties of the ($\sqrt{3}$ × 6)rect. phase will be discussed.

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