

## Growth of copper phthalocyanine on hydrogen passivated vicinal silicon(1 1 1) surfaces

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### Abstract

Using ultra-high vacuum scanning tunneling microscopy (UHV-STM), we show that copper-phthalocyanine (CuPc) grows in a well ordered manner on hydrogen passivated vicinal silicon surfaces. CuPc grows one-dimensionally parallel to the monatomic steps on the vicinal silicon surface. Surprisingly, elongated clusters of the CuPc parallel to the step directions are formed even on the middle of the terraces well away from the step edges. The one-dimensional growth mode continues even after the full monolayer coverage on the substrate which results in strongly oriented growth mode of a thin film of CuPc on the vicinal silicon surfaces.

**Keywords:** Vicinal surface; Low dimensional structure; Organic molecular engineering

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