

Abstract Submitted
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STM study of adsorption and dissociation of trichloroethylene molecules on the Si(111)7x7 surface.¹ POUYA MARAGHECHI, Department of Physics, University of Lethbridge, Lethbridge, Alberta, T1K 3M4, Canada, STEVEN A. HORN, Department of Physics, University of Lethbridge, Lethbridge, Alberta, T1K 3M4, Canada, WEIMING LIU, Department of Physics, University of Lethbridge, Lethbridge, Alberta, T1K 3M4, Canada, S.N. PATITSAS, Department of Physics, University of Lethbridge, Lethbridge, Alberta, T1K 3M4, Canada — We have performed, for the first time, STM studies of the adsorption of trichloroethylene (TCE) on clean silicon. The results were taken with a home-built UHV STM operating at room temperature. Our STM is capable of obtaining both topographic as well spectroscopic images. One of the products of the dissociation has been determined to be single chlorine atoms bound to Si adatoms as evidenced by topographic imaging and tip induced diffusion.¹ The other product of the dissociation is believed to be a vinyl group attached to an adatom as proposed in a study using EELS and TDS.² Results on the binding site preference (ex. corner vs. middle adatoms) for the Cl and vinyl group will also be presented as well as conclusions about the diffusion of Cl on Si. 1) Nakamura *etal*, *Surf. Sci.* **487**, 127 (2001). 2) He *etal*, *Surf. Sci.* **583**, 179 (2005).

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