

Abstract Submitted  
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**Adsorption of NO on Rh(111) studied by STM.** J.H.A. HAGELAAR, Eindhoven University of Technology, C.F.J. FLIPSE — The ability of Rhodium to efficiently dissociate NO makes it the most suitable metal for the removal of nitrogen oxides from automotive exhaust gasses in catalytic converters. Using a STM, the adsorption of NO on Rh(111) was studied in ultra high vacuum. First, the NO is adsorbed at  $T=200$  K, giving rise to two structures with coverages of 0.5 ML and 0.75 ML. These structures differ from the 0.5 ML (4x2)-2NO and 0.75 ML (2x2)-3NO structures found in literature. Once a structure was obtained, the sample was cooled down to 4.8K to perform inelastic electron tunneling spectroscopy (IETS) on the individual molecules within the structure. The molecules in the 0.5 ML structure showed a significant shift in the NO-stretch frequency compared to the expected frequency of  $1600\text{ cm}^{-1}$ . These results will be presented and discussed in detail.

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