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## **[253] Controlled Manipulation of Single Molecules on an Ag(111) Surface**

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The controlled motion of single molecules gives deeper understanding of the relation between molecular motion and the chemical and geometrical properties of molecules on the surface. However, the thermal motion of molecules is a stochastic process, which is difficult to control. Here, we have used scanning tunneling microscopy, kept at temperatures of about 7 K and ultrahigh vacuum conditions, to move individual molecules controllably across a flat Ag(111) surface. Lateral manipulation is used to gain insight into the dependence of molecular dynamics on the precise chemical structure of the molecules. Moreover, vertical manipulation provides information about the dependence of molecular motion on conformational changes.

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