

## APPENDIX E

### Imaging

For any molecule to be imaged by the STM, it must be attached to a rigid, flat, conducting material. However, this anchoring must not damage the molecule or change it in any way. Hence, large molecules have been imaged by attaching them to substrates such as graphite and gold, or they may be absorbed from electrolyte solutions. Variations of STM have been developed that are capable of imaging samples that are not electrical conductors (atomic force microscopy). Magnetic properties have also been used to image surfaces.

### Moving Atoms

To move an atom, the tip is placed above the atom and lowered to a closer distance than is normally used for scanning. The tip is then moved across the surface, dragging the atom with it. The interaction of van der Waals forces is thought to be the most likely explanation of this phenomenon.