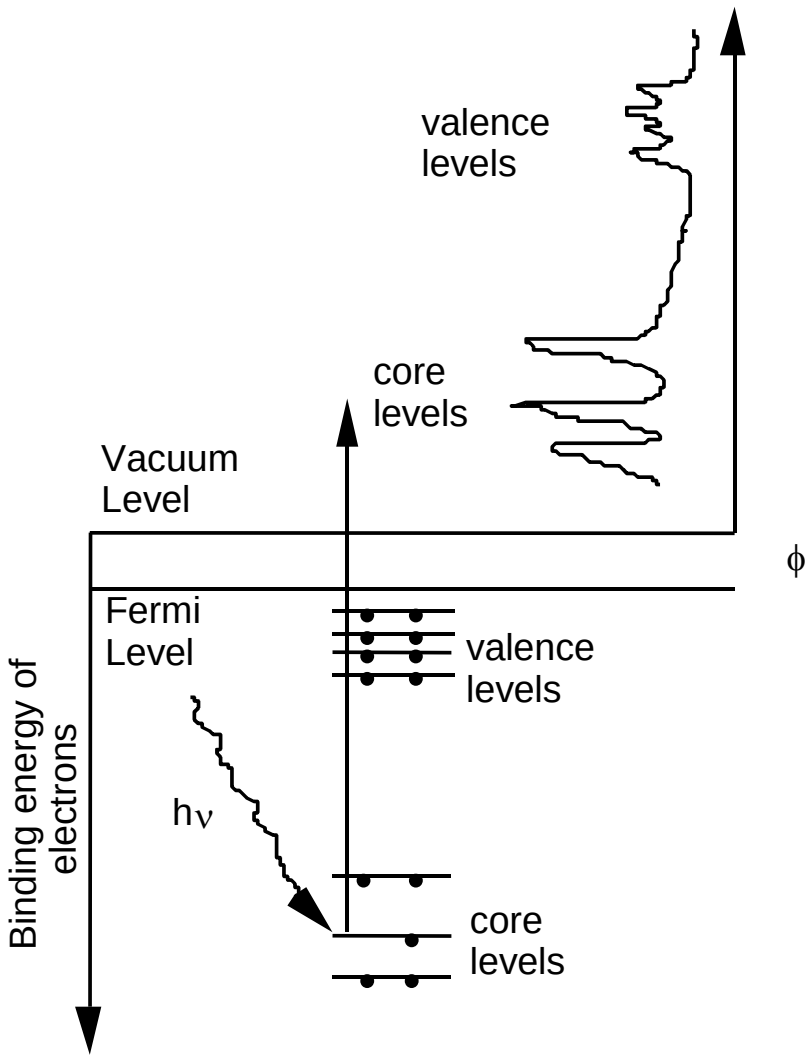

Figure 20.1 A schematic representation of photoemission spectroscopy.

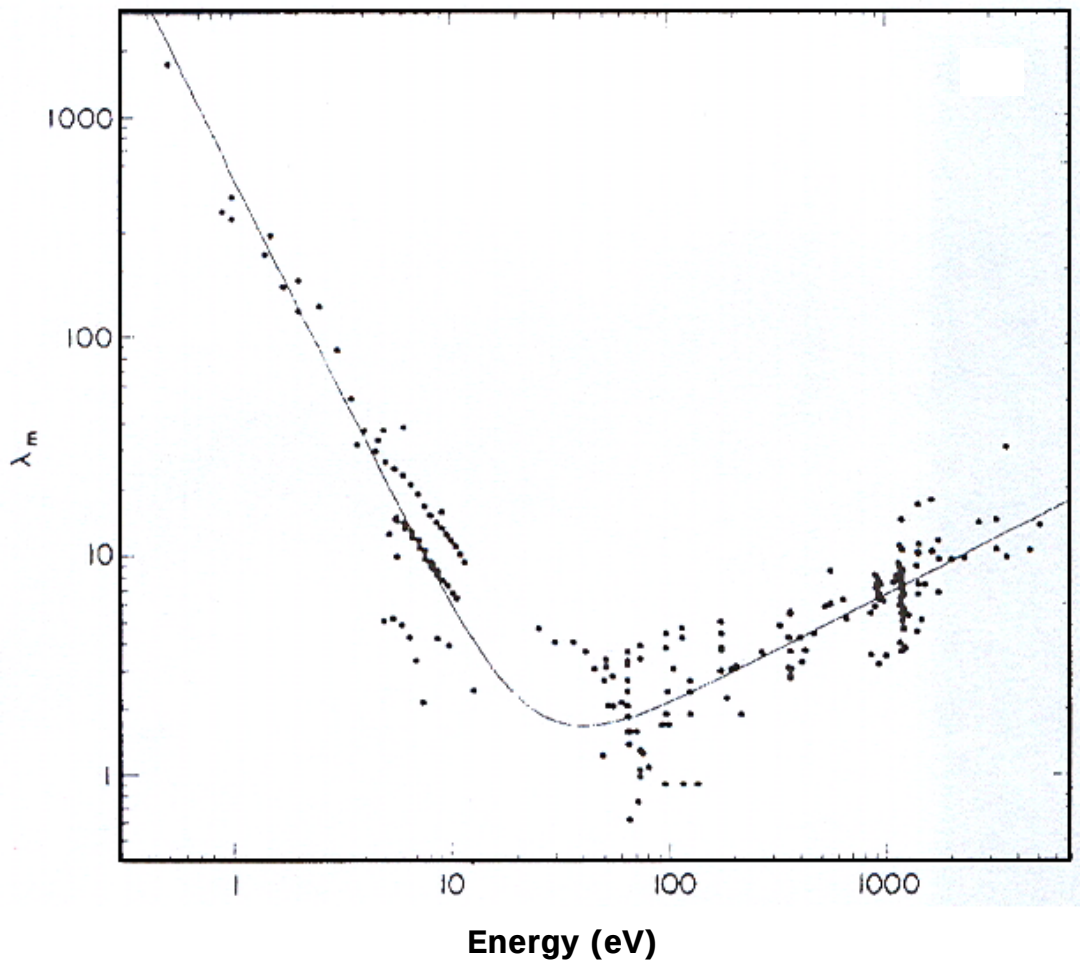

Figure 20.2 Universal curve of electron mean free path in solids (from Seah and Dench, Surf. Interface Anal. **1**, 2 (1979)).

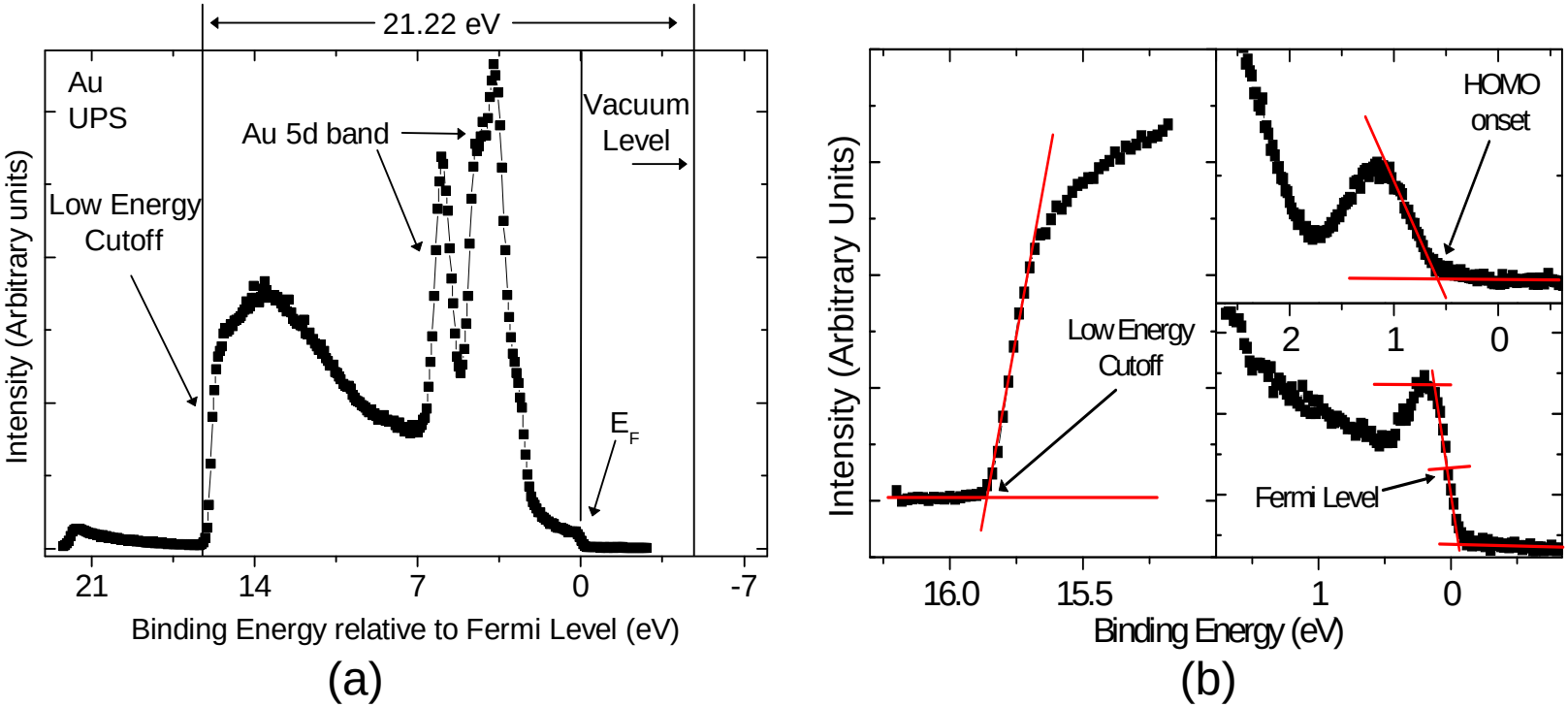

Figure 20.3 (a) UPS spectra of a clean Au surface; (b) UPS feature position determination.

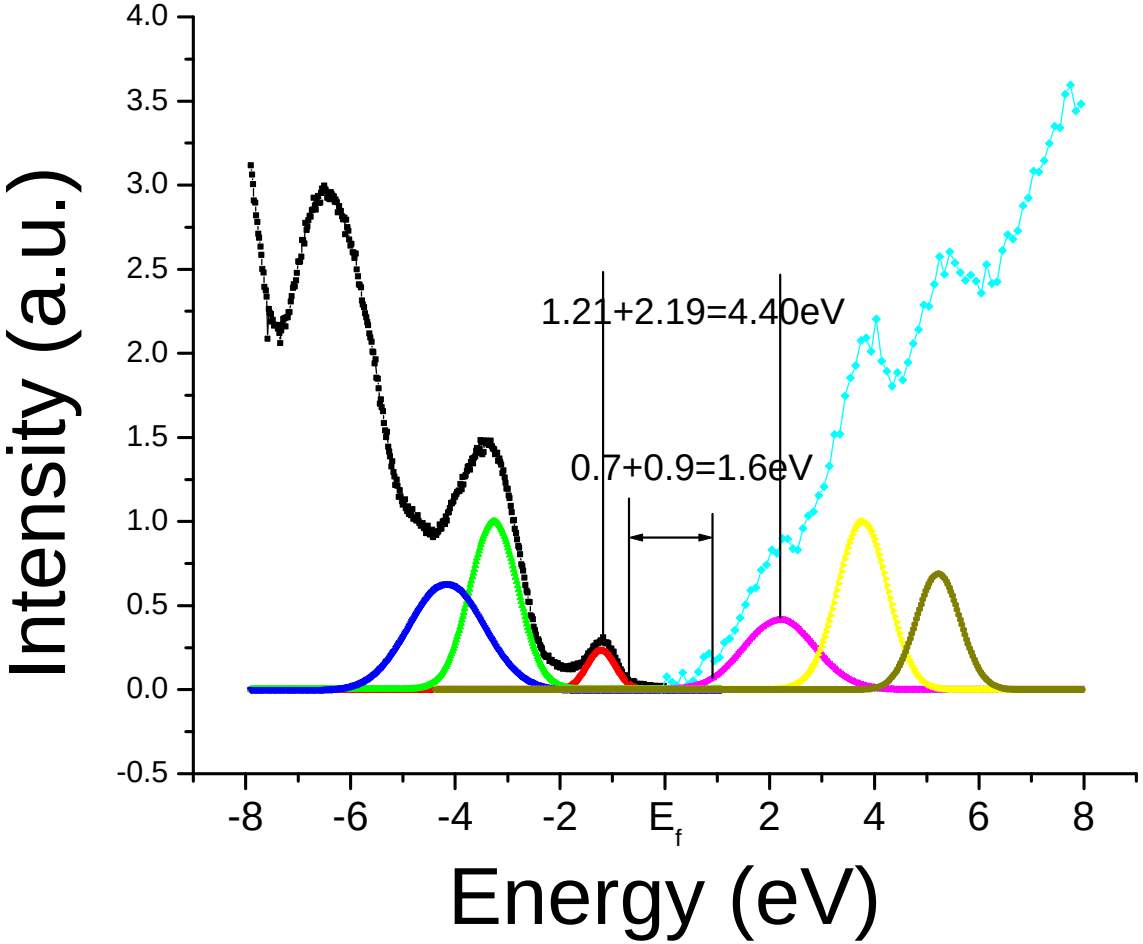

Figure 20.4 UPS and IPES spectrum of CuPc.

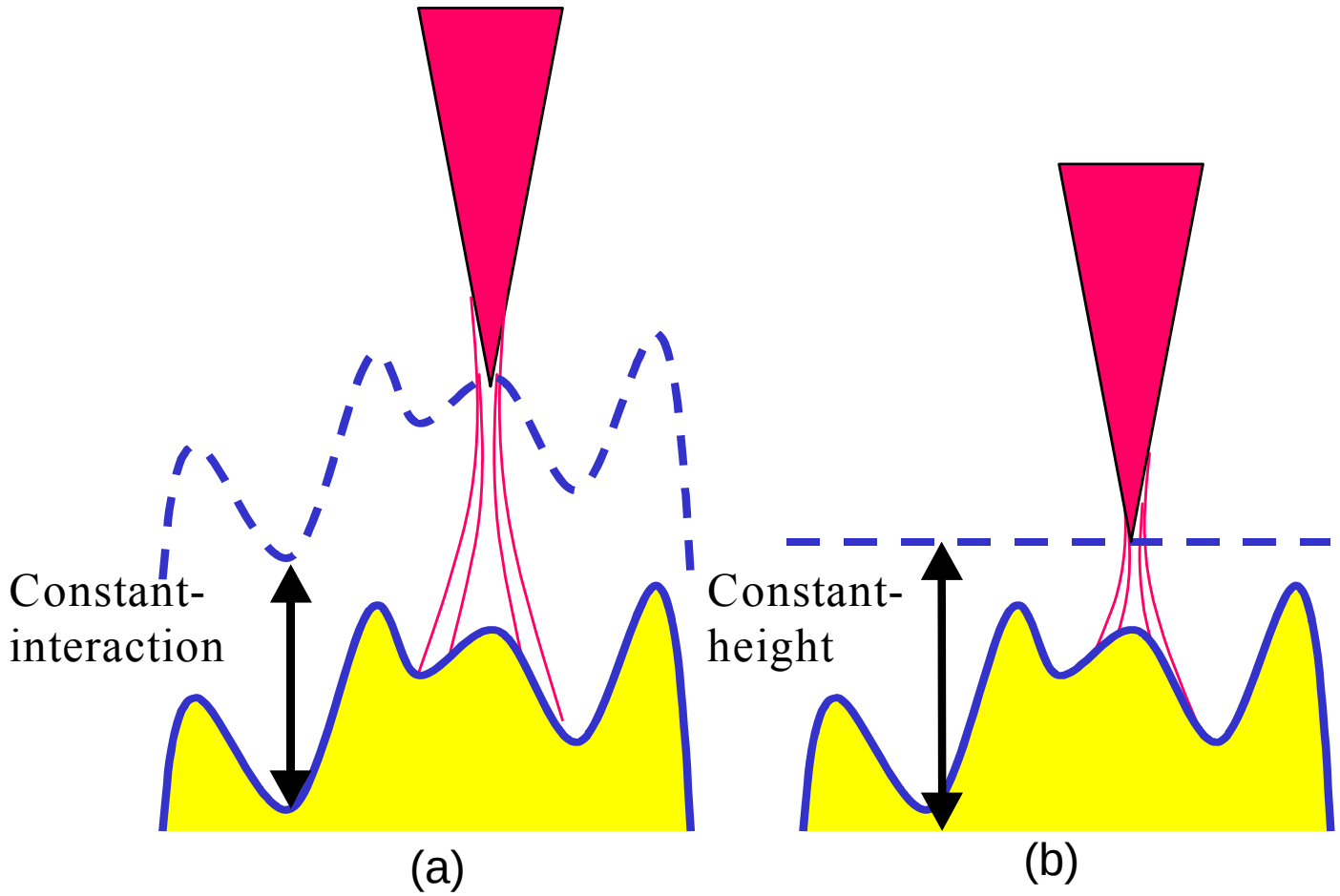

Figure 20.5 Two modes of operation in scanning probe microscopy (SPM): (a) constant-interaction mode; (b) constant-height mode.

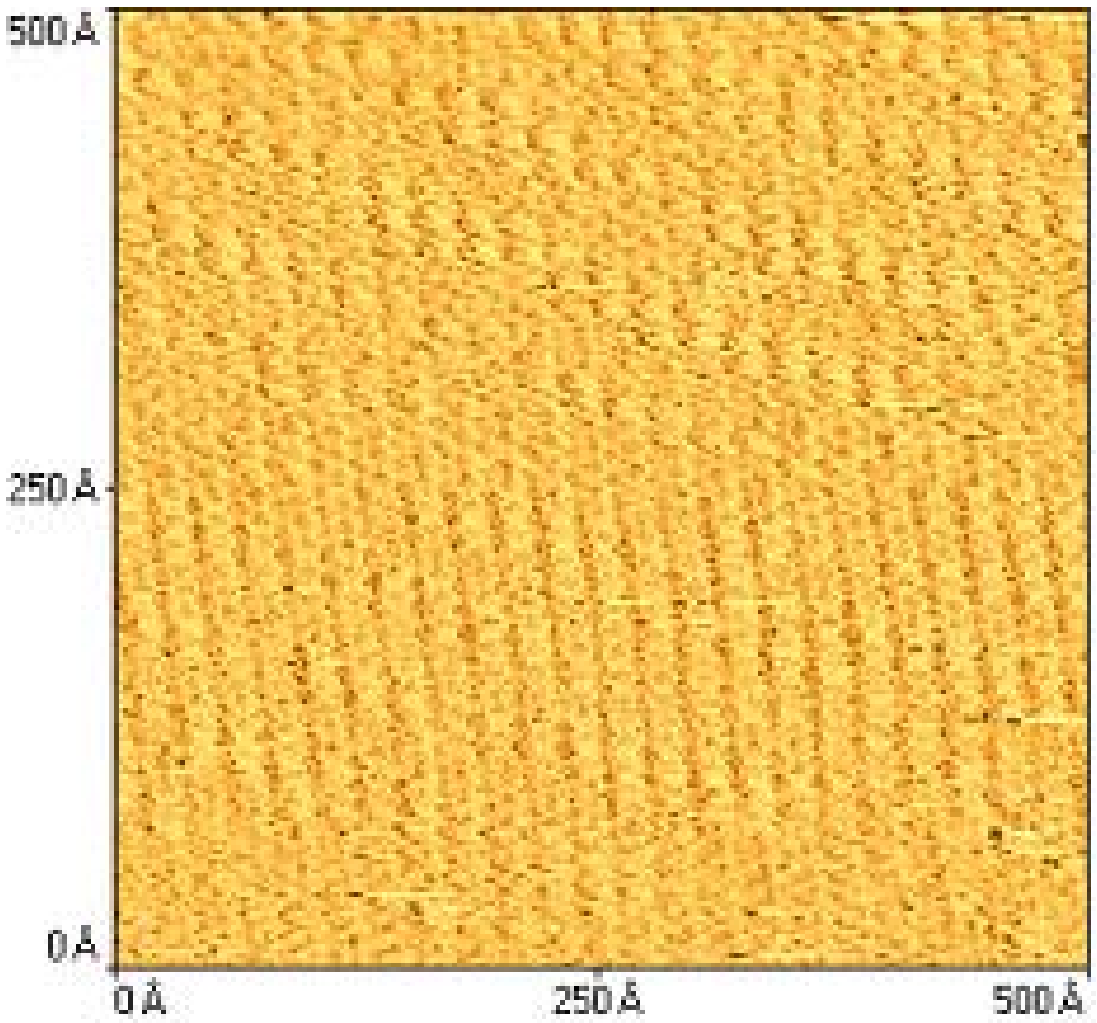

Figure 20.6 Molecular resolution STM images of PTCDA deposited on HOPG taken in air.

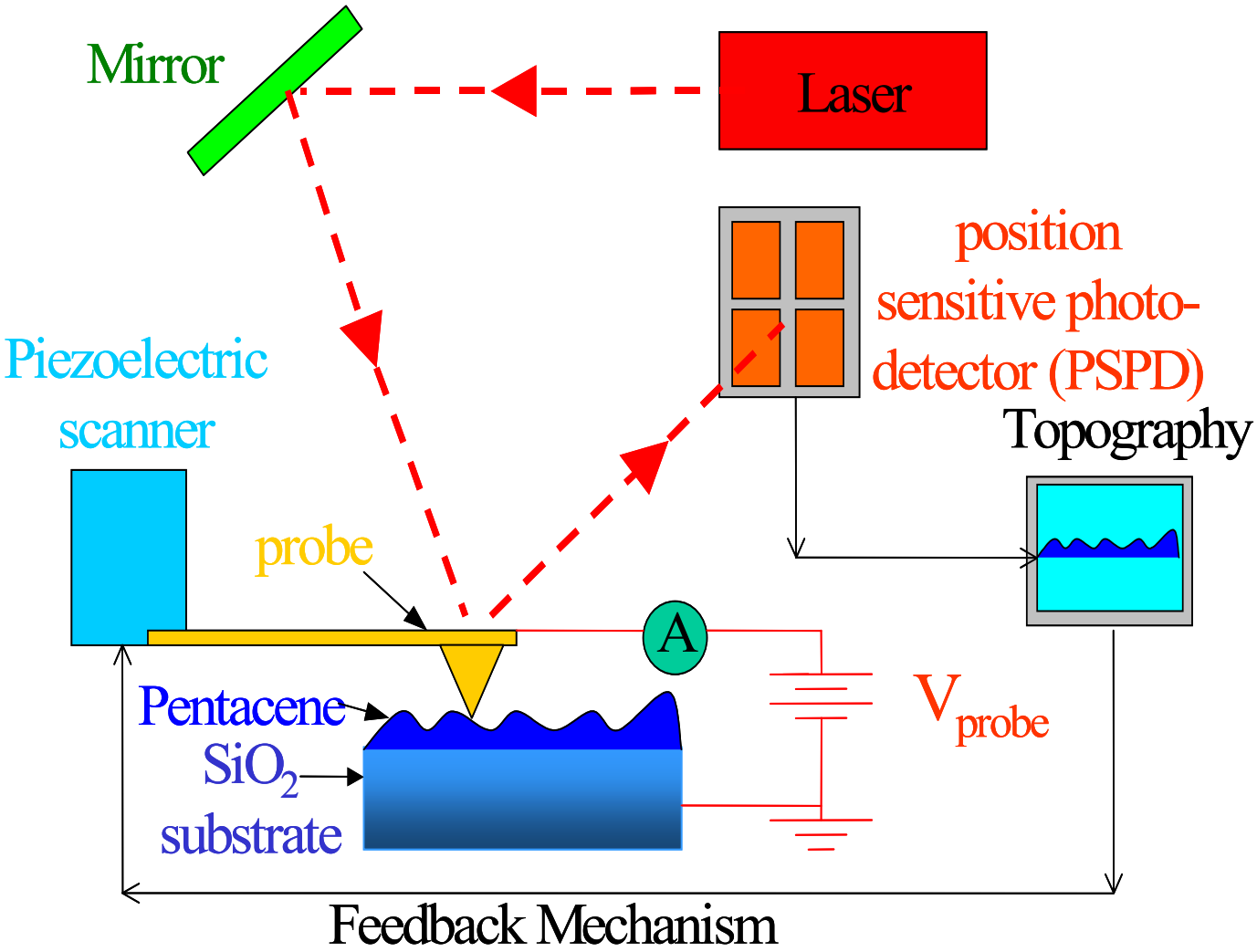

Figure 20.7 Schematic diagram of atomic force microscopy (AFM) with conducting probe AFM option.

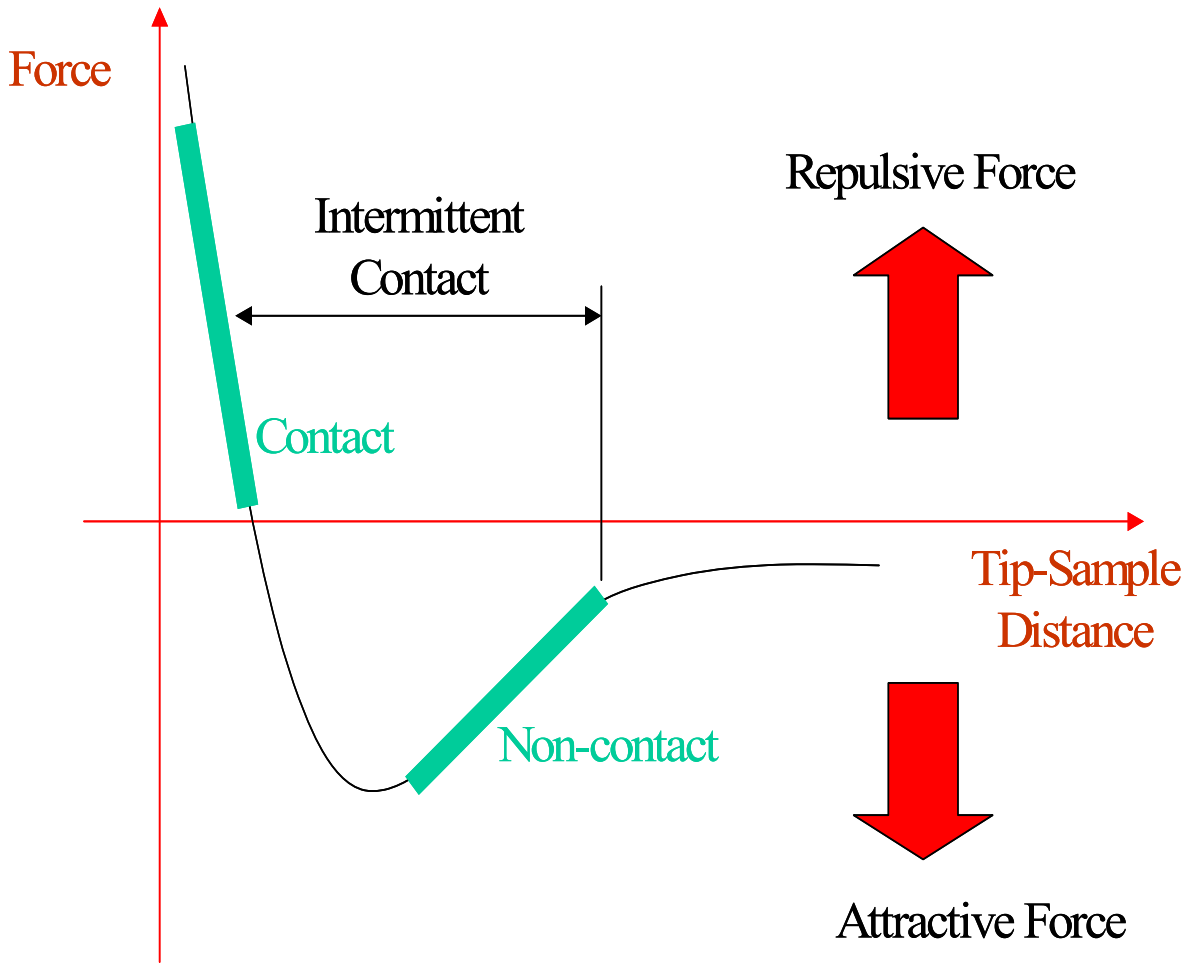

Figure 20.8 The van der Waals forces as a function of the distance between the tip and sample.

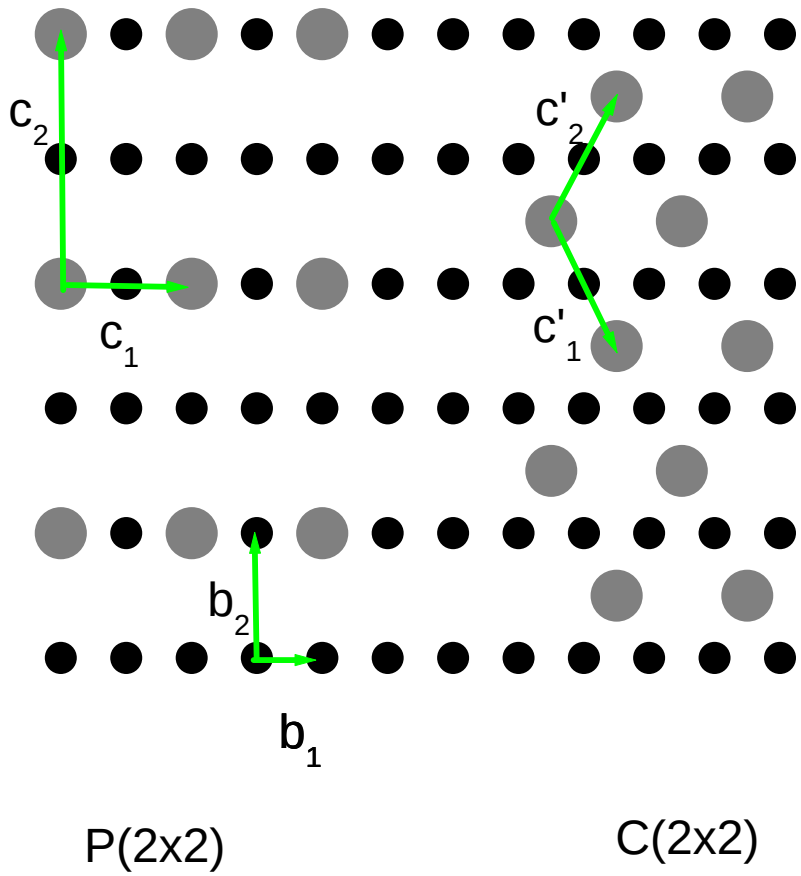

Figure 20.9 Surface reconstruction of p(2x2) and c(2x2) of fcc(110).

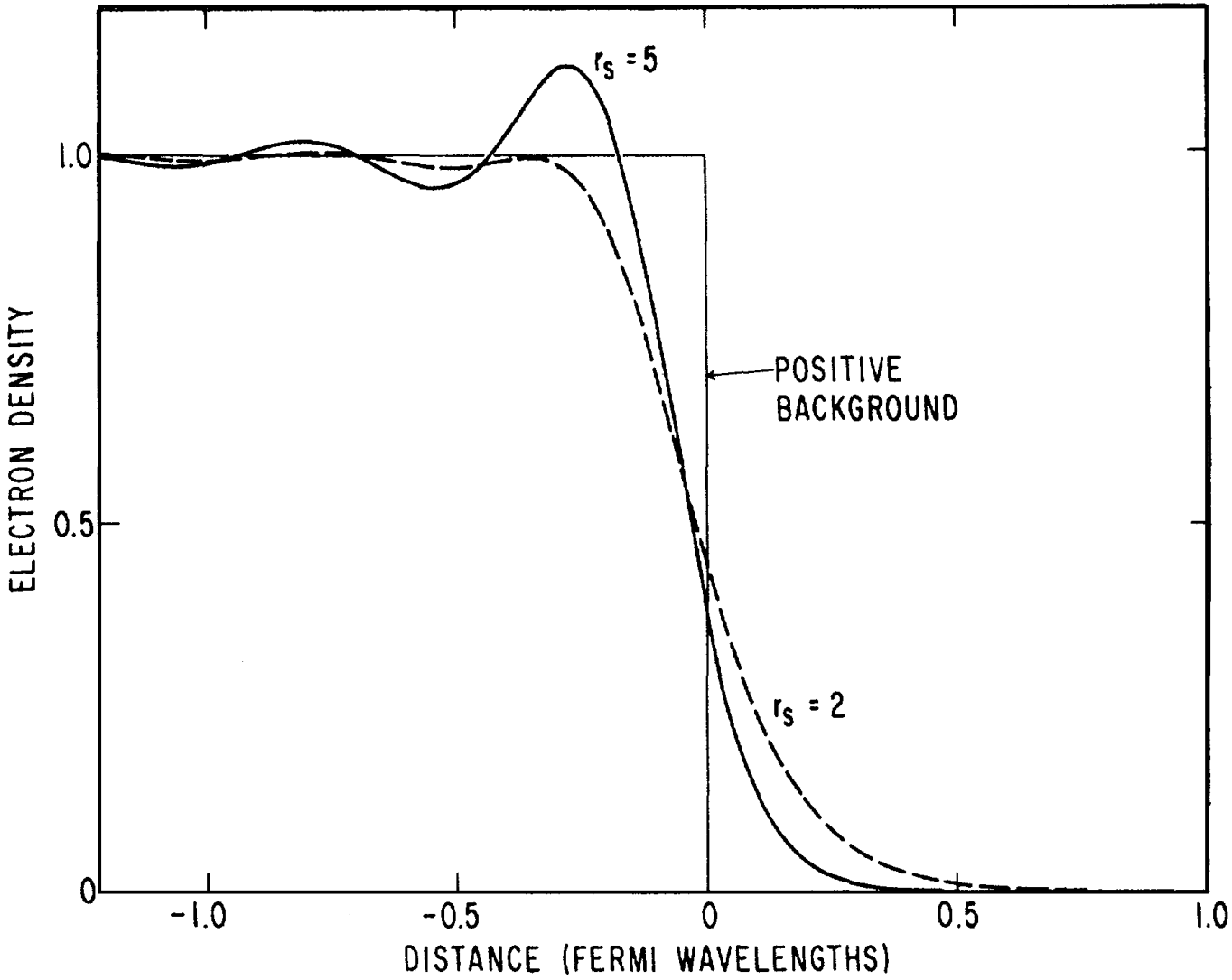

Figure 20.10 Electron distribution at metal surface (from N.D. Lang and W. Kohn, Phys. Rev. B**1**, 4555 (1970)).

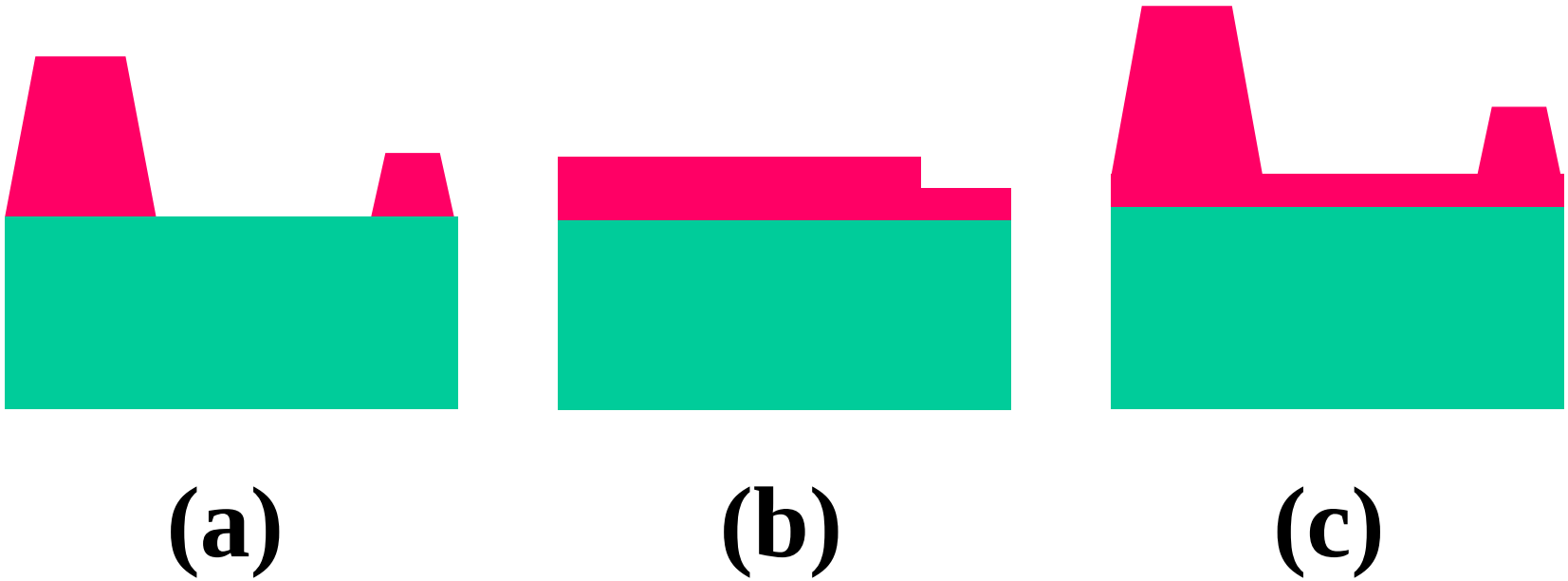

Figure 20.11 Growth scenarios when organic molecules are deposited: (a) Volmer-Weber or 3D-island growth; (b) Frank-van der Merwe or layer-by-layer growth; (c) Stranski-Krastanov mode or layer+island growth.

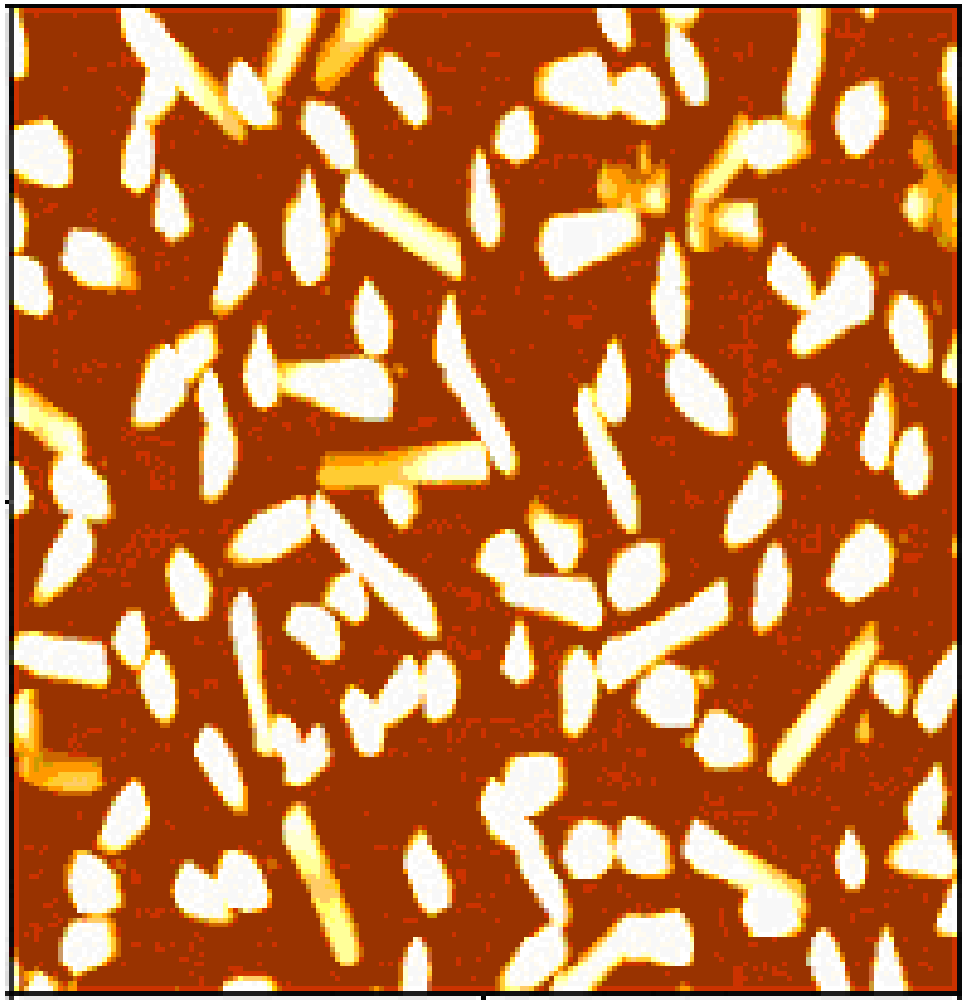

Figure 20.12 Tapping mode AFM image (10x10 μm^2) of perylene deposited on Au (bottom) substrate at room temperature.

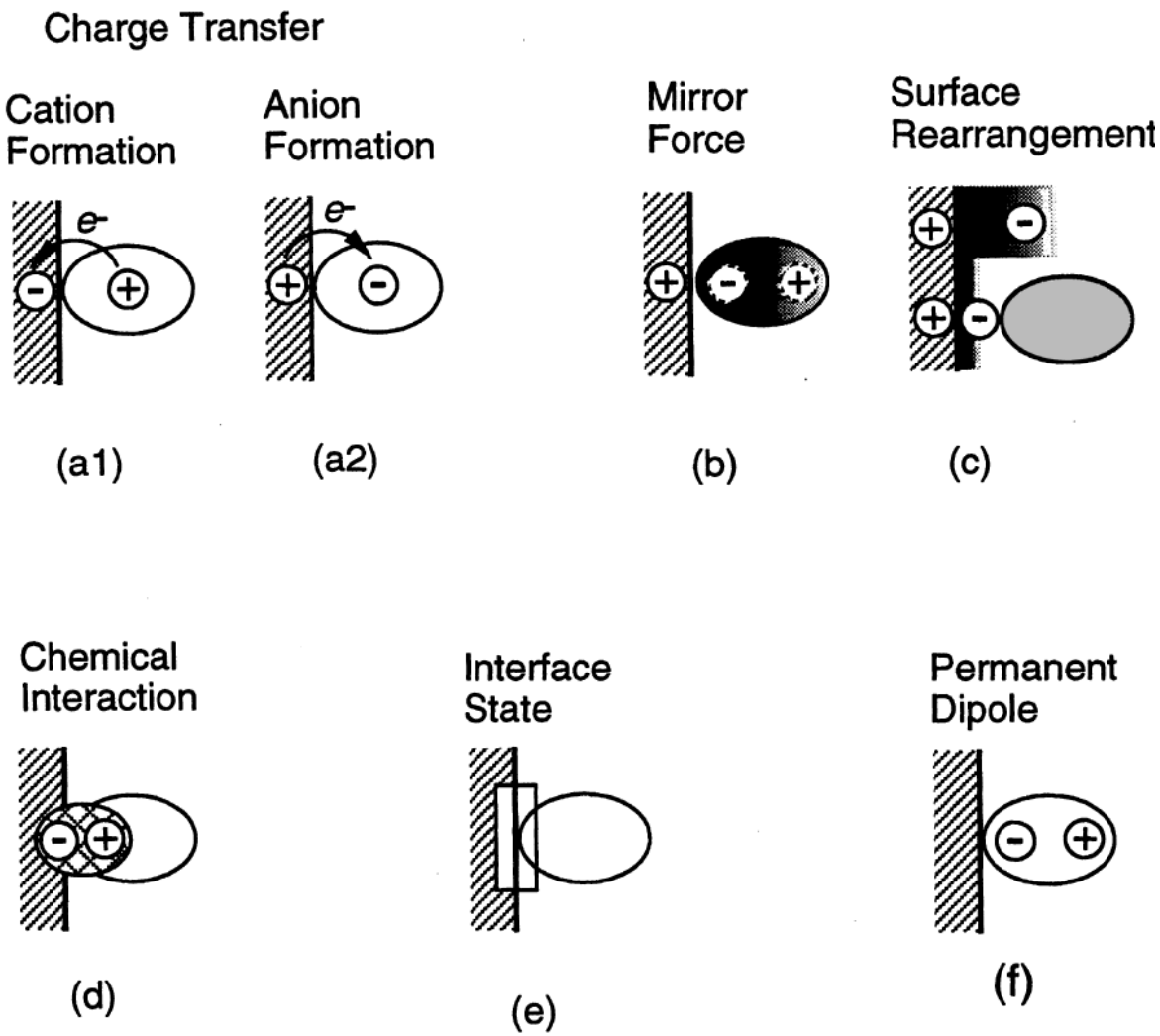

Figure 20.13 Models for interface dipole layer formation (from Ishii et al., Adv. Materials **11**, 605 (1999)).

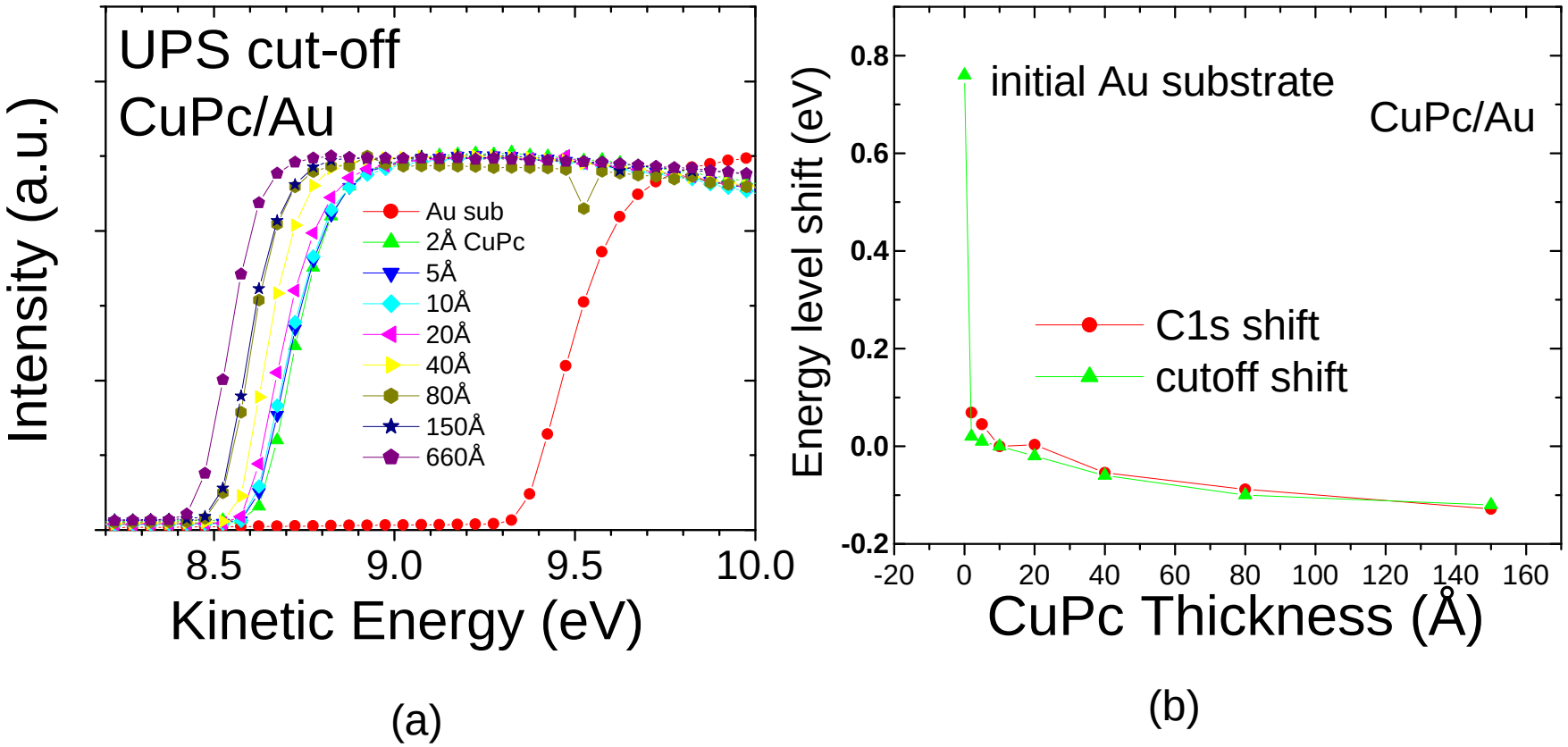

Figure 20.14 Determination of interface dipole at CuPc/Au interface: (a) normalized cutoff of UPS spectra; (b) comparison of cutoff shift and the C 1s shift.

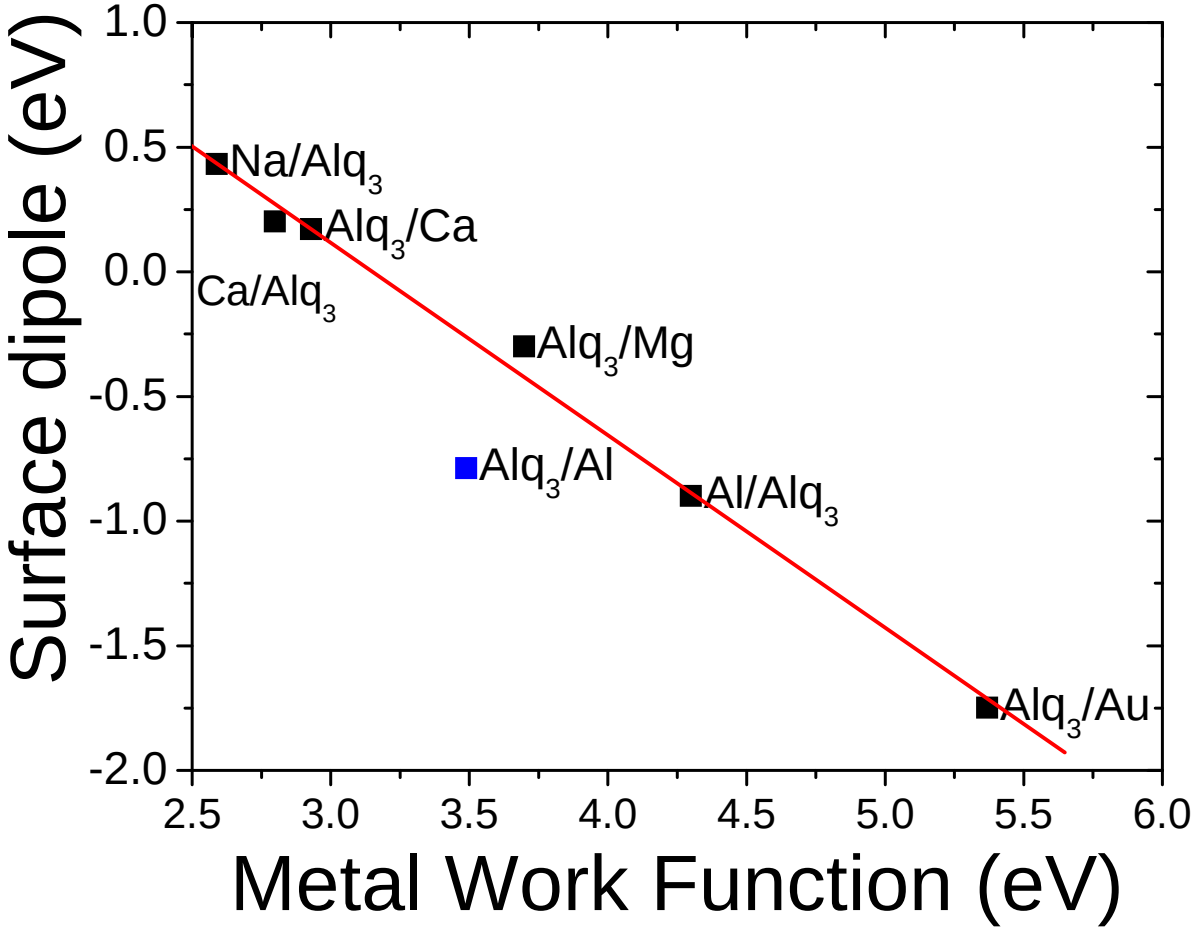

Figure 20.15 Interface dipole at metal and Alq_3 interfaces as a function of the metal work function.

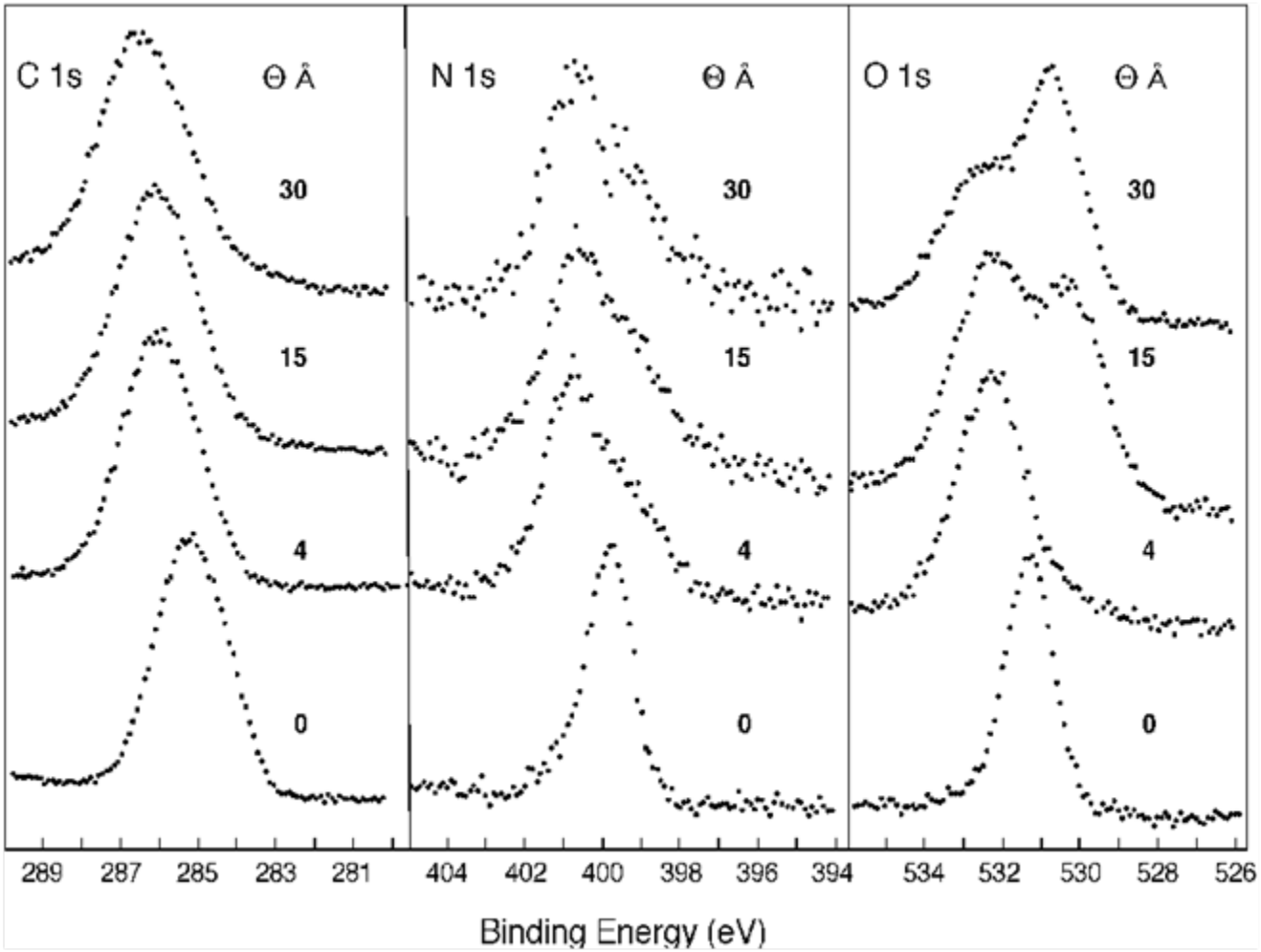

Figure 20.16 Evolution of XPS C 1s, O 1s and N 1s core level electron density curves (EDCs) as a function of increasing Ca thickness Θ_{Ca} on Alq3.

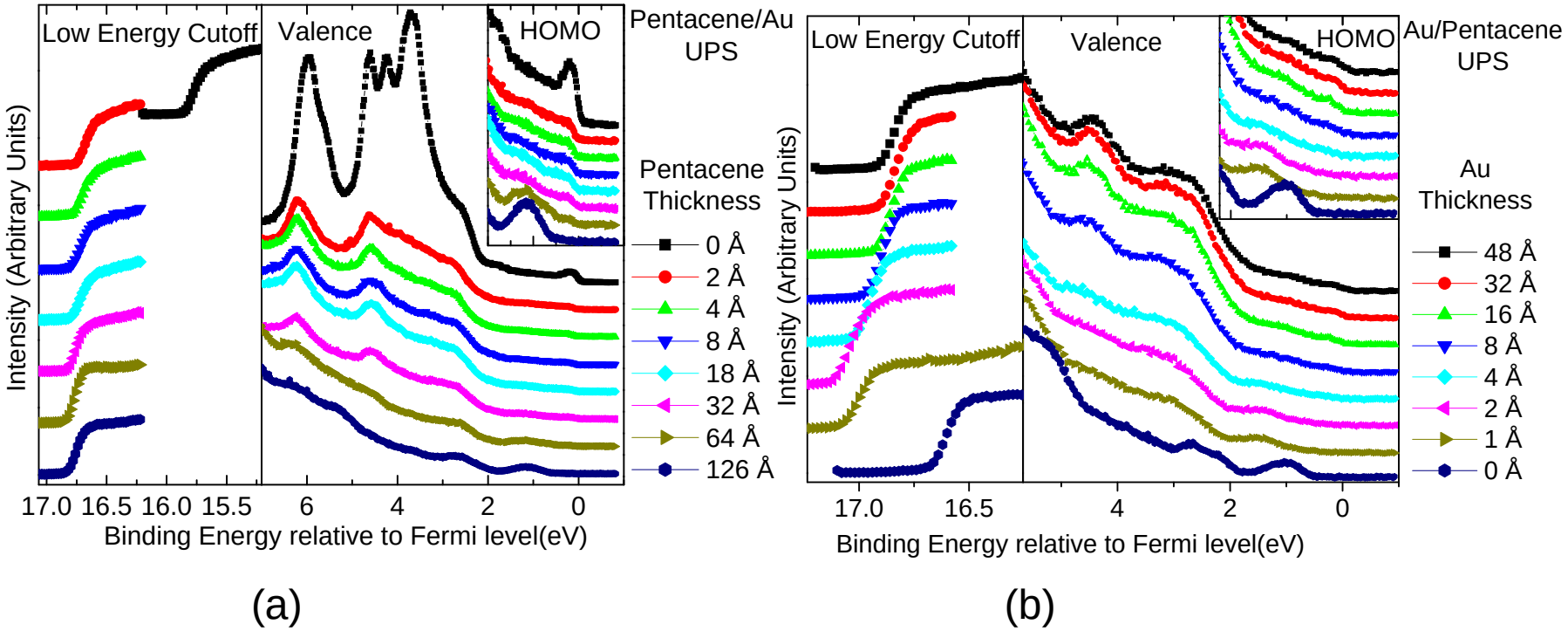

Figure 20.17 (a) UPS spectrum evolution as a function of pentacene deposition thickness onto gold; (b) UPS spectrum evolution as a function of Au deposition thickness onto pentacene.

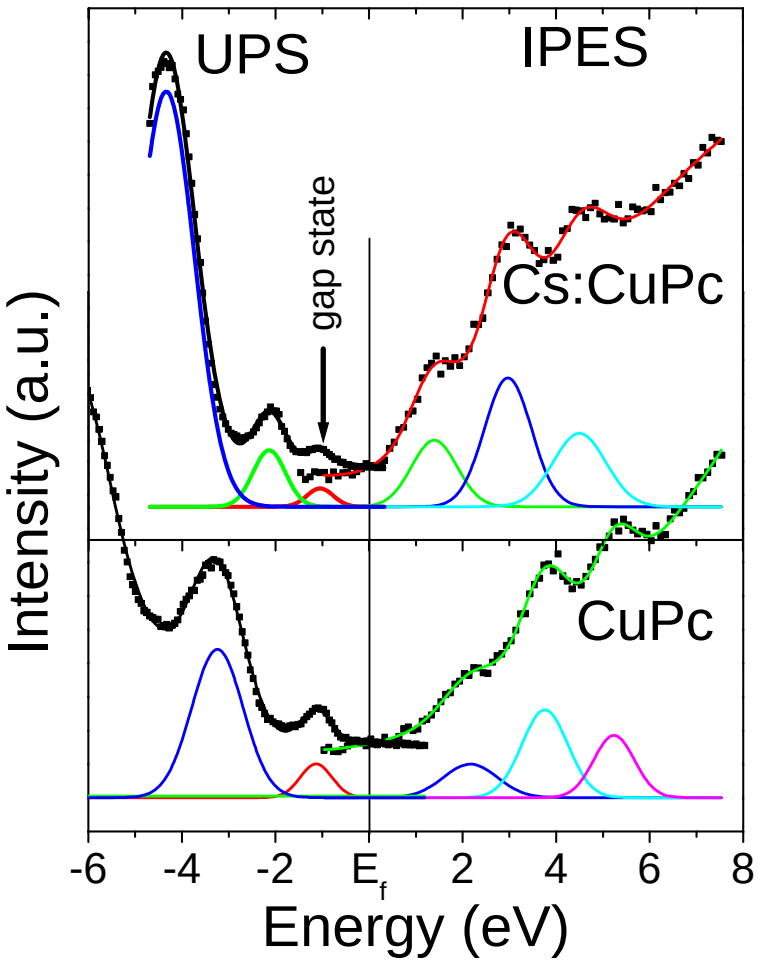

Figure 20.18 Comparison of the UPS and IPES spectra of pristine and Cs doped CuPc films.

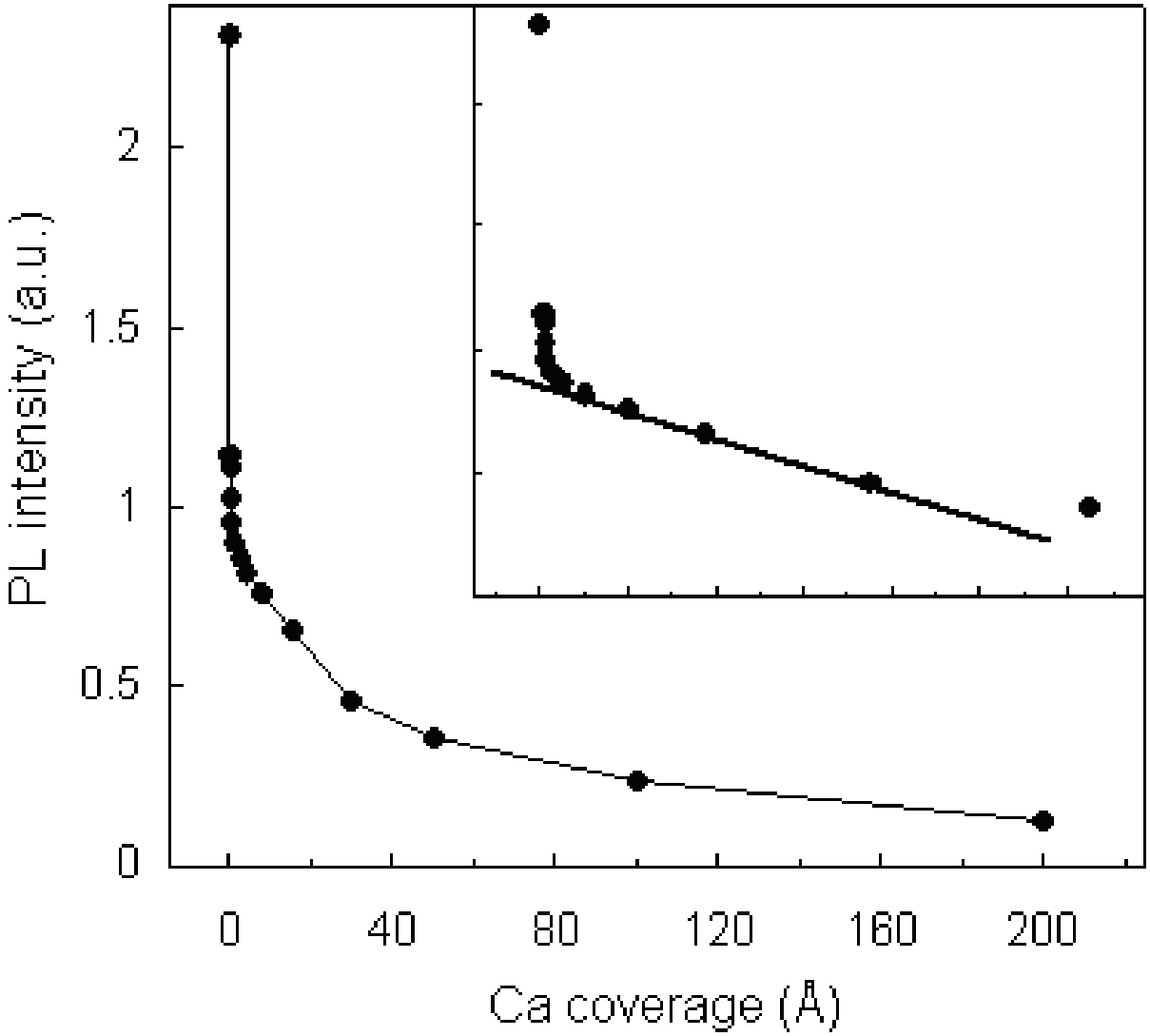

Figure 20.19 The evolution of PL peak intensity as a function of Ca coverage, Θ_{Ca}. The inset emphasizes the early stages.