

4. PRODUCTION AND PROPERTIES OF RADIATIONS

vibrations and nonpolar groups are most easily studied by Raman scattering, antisymmetric vibrations and polar groups by infrared scattering (Grasselli, Snavely & Bulkin, 1980)]. The valence states or the bonds of surface atoms and the local structure in the immediate neighbourhood of the chosen atoms can be studied by ultraviolet radiation in the energy range 10–50 eV by means of angle-resolved photoelectron emission (Plummer & Eberhardt, 1982).

4.1.5.4. *Radiofrequency and microwaves*

Electromagnetic waves of frequencies 10^6 – 10^{10} Hz are used in nuclear magnetic resonance (NMR) and electron paramagnetic resonance (EPR) experiments for studies of interatomic bonds, local atomic configurations, ordering, and relative population of atomic sites as well as for the determination of orientational features of magnetic structures (Kaufman & Shenoy, 1981).