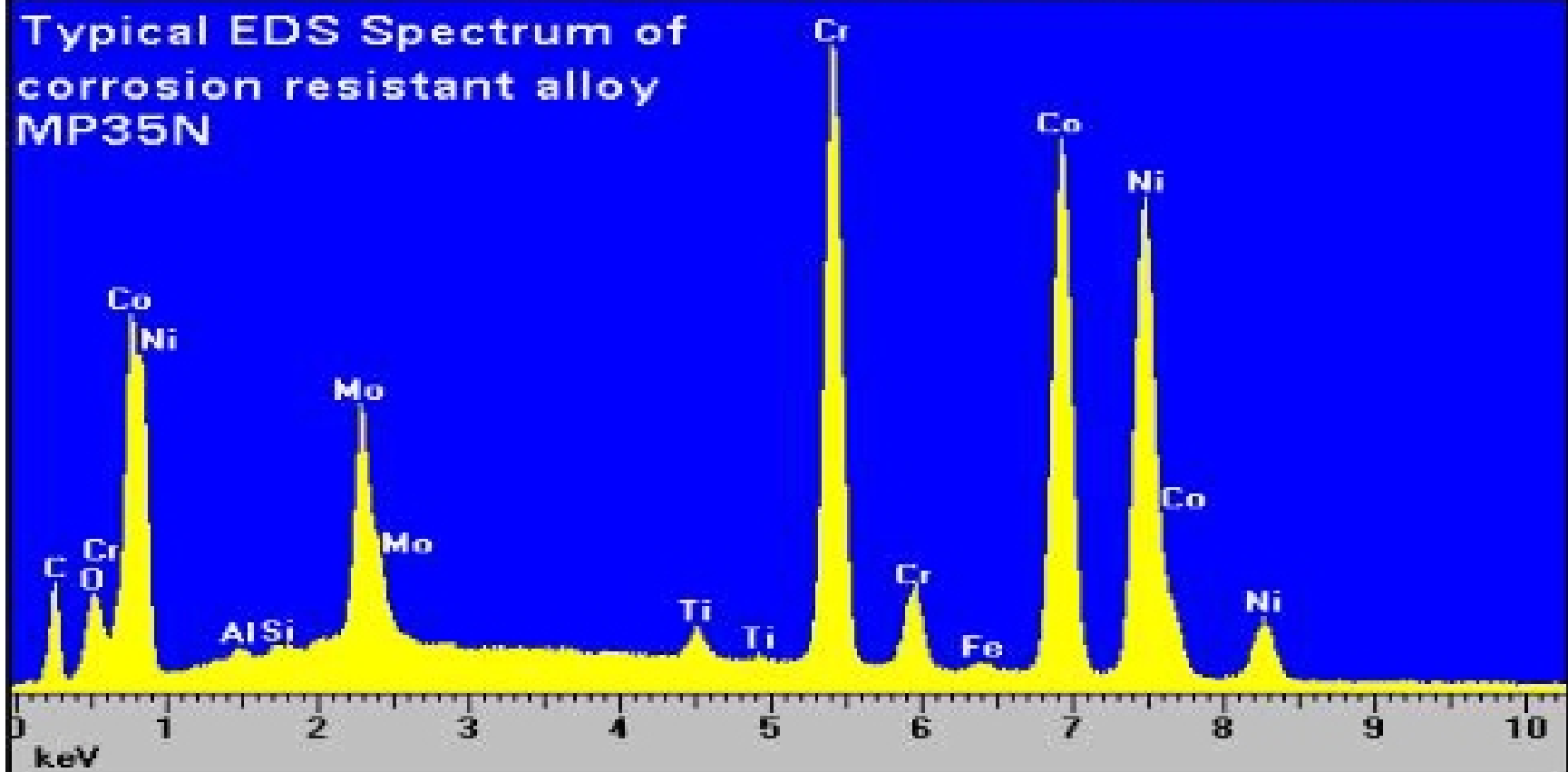


# Electron Probe Microanalysis EPMA

## Energy Dispersive Spectrometry (EDS)

Typical EDS Spectrum of  
corrosion resistant alloy  
MP35N

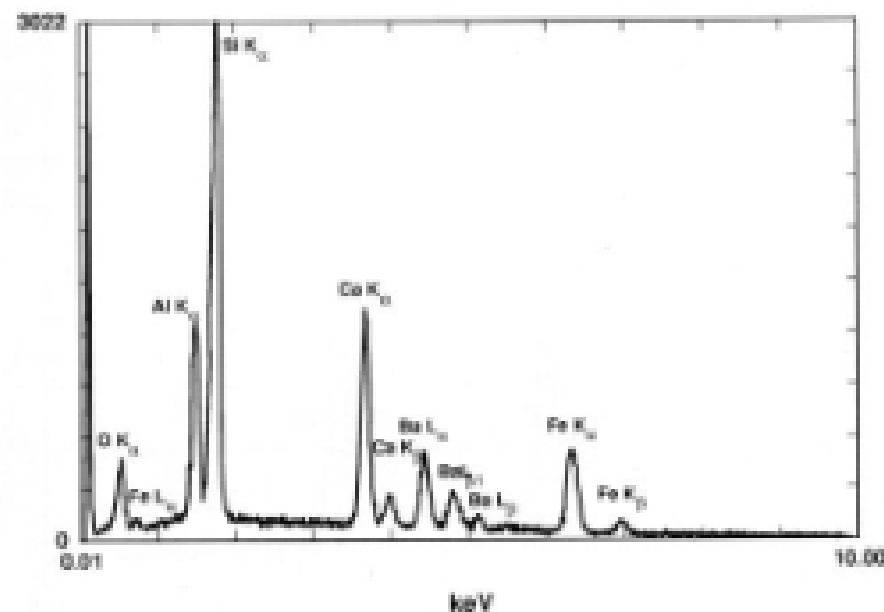




# What's the point?

Using X-rays to produce e-hole pairs (charges proportional to X-ray intensity), which are amplified and then “digitized”, put in a histogram of number of X-rays counts (y axis) versus energy (x axis). A solid state technique with unique artifacts.

EDS spectrum for NIST glass K309





# Summary

- X-rays cause small electric pulses in a solid state detector. Associated electronics produce ‘instantaneously’ a spectrum, i.e. a histogram of count (number, intensity) vs the energy of the X-ray
- Relatively inexpensive; there are probably 50-100 EDS detectors in the world for every 1 WDS (electron microprobe)
- Operator should be aware of the limitations of EDS, mainly the specific spectral artifacts, and the poor spectral resolution for some pairs of elements