

## Bragg's Law

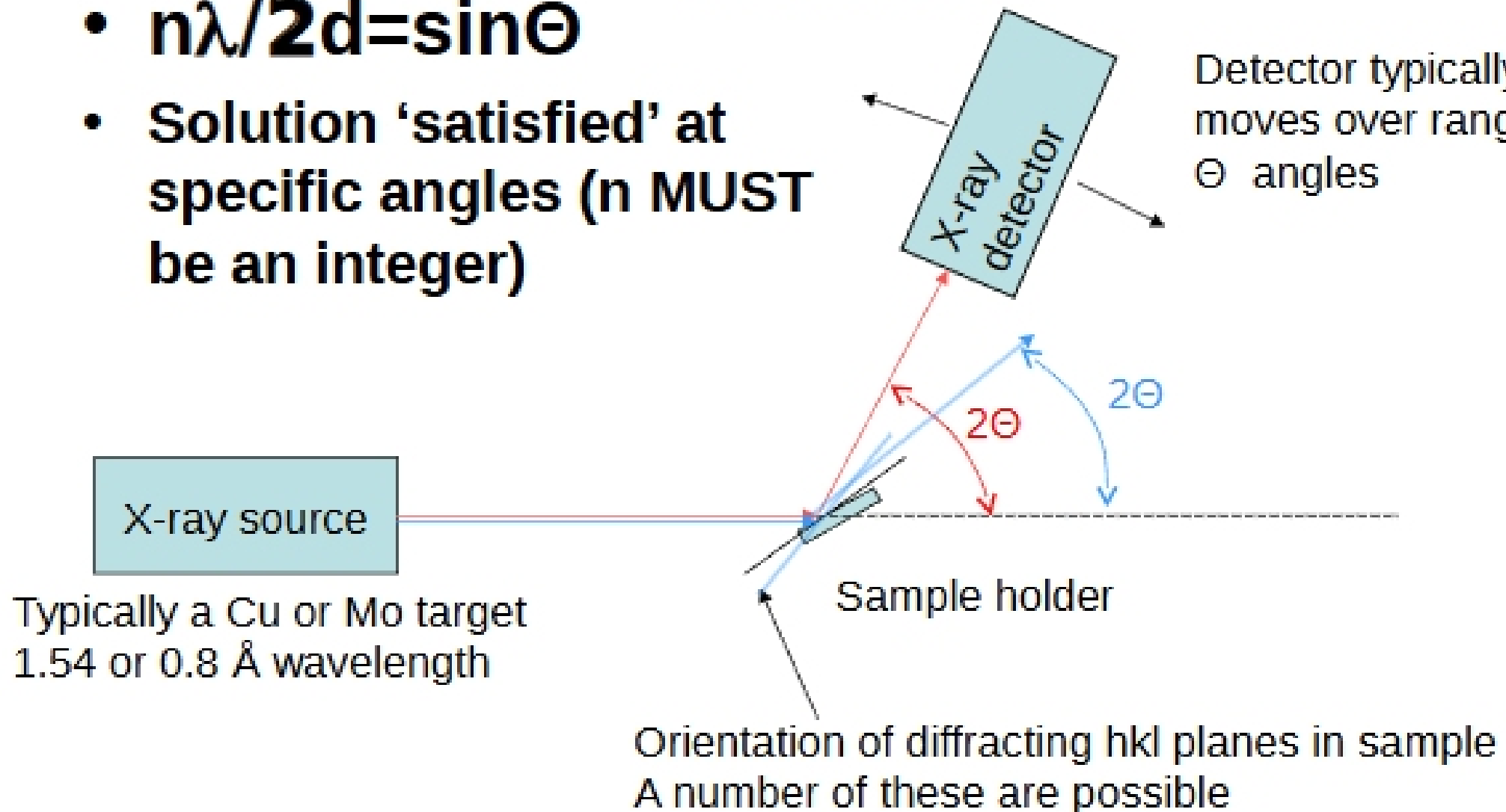
- $n\lambda = 2d \sin\theta$
- Just needs some satisfaction!!

# X-Ray Diffraction (XRD) equipment

- $n\lambda = 2d\sin\Theta$
- $n\lambda/2d = \sin\Theta$
- Solution 'satisfied' at specific angles (n MUST be an integer)

XRD machines vary angle as  $2\Theta$  because that angle is always relative to incident X-ray beam trajectory

Detector typically moves over range of  $2\Theta$  angles



# XRD Part II

- Theoretically, almost an infinite number of planes can exist, but certain ones diffract more strongly
- Related to the atomic density – both of  $##$  of atoms and in those ions' atomic density

