

NANO 703/703L - Quiz 2

Match the following terms with their descriptions by assigning the correct letter from below:

Terms

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|---------|---------------------------------|---------|------------------|
| a. ____ | forward | h. ____ | ionization |
| b. ____ | Bragg | i. ____ | elastic |
| c. ____ | form factor | j. ____ | incoherent |
| d. ____ | Rayleigh | k. ____ | bremsstrahlung |
| e. ____ | Moseley | l. ____ | structure factor |
| f. ____ | differential | m. ____ | screening |
| g. ____ | weak-phase object approximation | n. ____ | Schrodinger |
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Descriptions

- A. Assumes that the only effect of scattering is a slight change in phase.
- B. Type of scattering in which kinetic energy is conserved.
- C. Developed an equation for quantum-mechanical particles/waves.
- D. Observed that the energies of characteristic X-rays are simple functions of atomic number.
- E. A continuous spectrum of X-rays produced by acceleration of electrons.
- F. A sum of scattering amplitudes times phase factors over the atoms in a crystal's unit cell.
- G. Another name for electron scattering amplitude of an atom.
- H. Derivative of the total cross-section with respect to solid angle gives this type of cross section.
- I. Most electrons travel in this direction after inelastic scattering processes.
- J. Developed a simple resolution criterion based on superposition of incoherent sources.
- K. Can result in emission of either characteristic X rays or Auger electrons.
- L. Developed a simple law for diffraction from crystal planes.
- M. Reduction in electrostatic potential of an atom due to its orbital electrons.
- N. Waves of this type have no specific phase relationship with each other, so they do not interfere.