

38 In the α -particle scattering experiment, a beam of α -particles is aimed at a thin gold foil. Most of the α -particles go straight through or are deflected by a small angle. A very small proportion are deflected through more than 90° , effectively rebounding towards the source of the α -particles.

Which conclusion about the structure of atoms **cannot** be drawn from this experiment alone?

- A Most of the atom is empty space.
- B Most of the mass of an atom is concentrated in the nucleus.
- C The nucleus contains both protons and neutrons.
- D The nucleus is charged.

39 Radon 211, ^{211}Rn , francium 210, ^{210}Fr , and radium 212, ^{212}Ra , are three nuclides