

## Timeline (The Atom)

- 1872**      **Ludwig Boltzmann** (age 28) Boltzmann equation describes the statistical behavior of a thermodynamic system.
- 1895**      **November: Wilhelm Röntgen** (age 50) discovers X-rays.
- 1897**      **April: J.J. Thomson** (age 40) announces the discovery of the electron.
- 1900**      **December: Max Plank** (age 42) introduces the quantum of energy in his blackbody radiation law.
- 1905**      **June: Albert Einstein** (age 26) published paper on photoelectric effect (light quanta).  
**July: Albert Einstein** publishes paper on Brownian motion.  
**September: Albert Einstein** publishes paper on the special theory of relativity.
- 1911**      **March: Ernest Rutherford** (age 40) announces the discovery of the atomic nucleus.
- 1913**      **September: Niels Bohr** (age 28) presents his new theory of the quantum atom.
- 1914 - 1918**      **World War I**
- 1923**      **September: Louis De Broglie** (age 31) links waves with electrons as he extends wave-particle duality to include matter.
- 1925**      **January: Wolfgang Pauli** (age 25) discovers the exclusion principle (No two electrons in an atom can have the same four quantum numbers).  
**December: Erwin Schrödinger** (age 38) constructs his wave equation.
- 1927:**      **February: Werner Heisenberg** (age 26) discovers the uncertainty principle.  
**October:** The Fifth Solvay Conference and the beginning of the Bohr-Einstein debate.
- 1932:**      **James Chadwick** (age 41) announces the discovery of the neutron.
- 1938:**      **Otto Hahn and Lise Meitner** discover atomic fission.
- 1939 - 1945**      **World War II (Atomic Bomb dropped August 1945)**
- 1964**      **Murray Gell-Mann** and **George Zweig** independently present the quark model of the atom.
- 1997**      Quantum teleportation is achieved.