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Asymptotic Freedom

See ▶ Color Charge Degree of Freedom in Particles Physics; QCD; QFT.

Atomic Model

See also: ▶ Bohr's Atomic Model; Rutherford Atom.

Atomic Models, J.J. Thomson's "Plum Pudding" Model

Klaus Hentschel

In 1897, Joseph John Thomson (1856–1940) had announced the discovery of a corpuscle. Others soon called it ▶ electron, despite Thomson's stubborn preference for his original term, borrowed from Robert Boyle (1627–91) to denote any particle-like structure. Very soon afterwards, Thomson began to think about how to explain the periodicity of properties of the chemical elements in terms of these negatively charged corpuscles as atomic constituents. Chemical properties would thus have to depend on the number and constellations of these corpuscles inside the atom. They would have to have stable positions in it, bound by electrostatic and possibly kinetic forces. Because under normal conditions chemical atoms are electrically neutral, the total electric charge of all these negatively charged electrons had to be compensated for by an equal amount of positive charge. For Thomson it was natural to