Niels Bohr

1885 - 1962

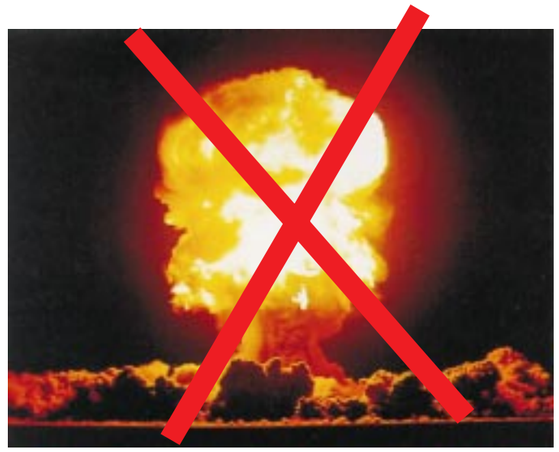
Awarded the Nobel Prize for Physics in1922

Niels Bohr was one of the most famous physicists of the 20th century, a founder of quantum mechanics. He received the 1922 Nobel Prize for Physics, **'for his study of the structure of atoms and of the radiation emanating from them'.**

He was born on October 7th, 1885 in Copenhagen in the very intelligent and happy family of Christian Bohr and his wife, Ellen Adler. Niels' father was Professor of Physiology at the University of Copenhagen and later the Vice Chancellor of the University. Niels had an older sister, Jenny, who later taught history and a younger brother, Harald, who was to become a prominent mathematician.

During the years of their childhood, and also in later life, Niels and Harald were almost inseparable. At the University, they both played the modern soccer. Harald even played for the national team and became famous as one of Denmark's best soccer players.

Niels chose for his first research in physics a precision measurement of the surface tension of water. He completed it in 1906, when he was still a student at Copenhagen University, and it won him a Gold Medal from the Academy of Sciences. After finishing his studies in Copenhagen in 1911, Bohr went to Cambridge and then to Manchester, where the physicist Ernest Rutherford had established a flourishing laboratory. There, Bohr laid the foundations for his most important scientific discovery: ***the model of the atom.*** While considering the simplest atom, hydrogen, and studying its atomic line spectrum, he postulated that its electron radiated energy only when it ***dropped from one allowed level to a lower energy level***. The atom can absorb and emit energy only in ***quanta***, which correspond to the energy differences between allowed levels.



He was against the atomic bomb

Bohr returned to Copenhagen in 1916 as a Professor, and in 1920 he became the Founder and Director of the newly established Institute of Theoretical Physics. In 1936 he proposed a model for the atomic nucleus and explained the fission process in which the nucleus behaves like a deformable drop of liquid. In Copenhagen, Bohr gathered round him many of the to-be-prominent young quantum physicists.

Bohr married Margrethe Norlund. She was a perfect and invaluable support to her husband and their marriage lasted over 50 years. They had six sons. Bohr's greatest grief was when his eldest son drowned before his eyes in a sailing accident.

During World War II, in 1943, under the threat of immediate arrest, Bohr and his family escaped from occupied Denmark, first to Sweden, then by Mosquito plane to England and at last to the USA where he and his son, Aage, participated in the atomic bomb 'Manhattan' project at Los Alamos. On returning to Copenhagen in 1945, **Bohr engaged in the peaceful uses of atomic energy and international atomic control.** He was strongly interested in philosophy and coined the term ‘complementarity’. He was honoured by the highest Danish medal 'Order of the Elephant' and chose as his heraldic emblem the ying-yang symbol.

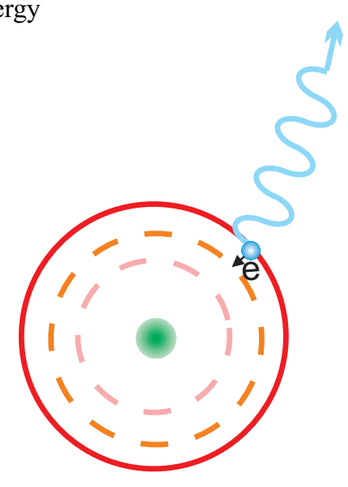
Bohr was very fond of the arts and literature. His circle of friends was large and included artists, scientists and acquaintances of his childhood and youth. He liked to ski and used to travel to the Institute by bicycle. He and his friends had their own sailing boat.

Bohr was a very kind and open-minded person. Everybody who knew him, even slightly, mentioned ‘the feeling of warmth and affection arising from his humanity and kindness’.

S.E.

‘And now our distinguished guest will repeat his famous lecture on chain reactions’

Bo Bojesen for the Copenhagen newspaper *Politiken*



The ‘Bohr atom’