He was born in Budapest, on August 1, 1885. He obtained his doctoral degree in Zürich and then went to Manchester to work with Rutherford (1911). He worked later here with his best friend, Niels Bohr.

Working on the developing isotopic research, together with Paneth he discovered the radioactive tracing in 1913. From 1920 he worked in Bohr's institute and two years later he discovered the element hafnium (atomic number 72). He started investigations on the possible biological applications of radioactive tracing.

Between 1926 and 1934 he was head of the physics-chemistry department of the Freiburg University. During this period he studied tracing in animal tissues. He continued research in Copenhagen and then in Stockholm and discovered the activation analysis. After that, he was only involved in biochemical, biological and medical research.

When it became possible to produce isotopes artificially, he achieved results using these isotopes in different fields, like metabolism processes, renewal of cells, paths of molecules, examination of tumors etc.

He obtained the Nobel prize in chemistry in 1943.
His full name was János Lajos Margittai Neumann and the world knew him as John von Neumann. He was considered as a professional mathematician during his secondary school years. In 1921 he started to study simultaneously in Budapest, at the University of Sciences and at the University of Berlin. He obtained a doctoral degree in mathematics in Hungary and in the same year he got a chemical engineering diploma in Berlin. Later he taught at the mostly respected universities.

In the United States he participated in the research on the development of a nuclear bomb in Los Alamos. In 1955 the government appointed him member of the Atomic Energy Commission, which consisted of five persons only.

He studied the mathematical problems of quantum mechanics and achieved revolutionary results (1932). He invented the theory of games and he was one of the founders of the theory of sets. The extremely complicated equations he obtained during investigating shockwaves required a lot of numerical computation. This fact confirmed him of the necessity of computers. He joined the ENIAC and EDVAC projects and later he lead developments himself in this field. He suggested the use of inner programmed control and the binary system.
Leó Szilárd
Hungarian physicist

1898, Budapest - 1964, La Jolla, California

He was born in Budapest on February 11, 1989. His father's surname was Spitz, but in 1900 they altered it to a Hungarian name, Szilárd.

When he was young, he expressed the four guiding principles of his life: Be different from the others!; Think! You can leave the rest to others.; Be honest!; Don't bother about the past, concentrate on future!

He finished his secondary school studies in 1916 and continued at the Budapest University of Technology from the same year.

Despite he took up the Presbiterian religion at the end of the 1910s, he was dismissed from the university. He left Hungary and became a student at the Berlin University of Technology. However, by the influence of atomic physics he definitely started to study physics. He met Max von Laue and A. Einstein at this time.

In 1922 he laied down the principles of modern information technology by applying the entropy to information.

In December 1927, together with Einstein he obtains patent for a refrigerator that works without moving elements. This principle is used today, with the liquid metal cooled breeder reactors. Later on, seven more common patents were registered.

In 1933 he moved to England. Here, at one of Rutherford's lectures he heard that the practical use of nuclear energy is impossible. On the way home he found out the principle of nuclear chain reaction and introduced the concept of critical mass. He patented this process immediately (1934), but he also had it declared military secret. He did not get money to find the element that was suitable for the process.

During spring 1935 he was trying to convince nuclear scientists not to publish their results in order that Germany should not get the information. This can be considered as the first attempt to control nuclear armament.
On January 2, 1938 he moved to the United States. In 1939 he heard about the success of the nuclear fission experiments in Germany. He examined uranium and proved that neutron multiplication occurs. He wanted to prevent the publication of this discovery (because of the warlike situation), but in autumn 1939 the news came out. Being afraid of the fact that the Germans might be able to produce a nuclear bomb soon, with Wigner's help he convinced Einstein about the reality of the peril and they wrote a letter to president Roosevelt.

The American atomic bomb program, the Manhattan project started as a result of the letter. In frame of this project he worked together with - among others - Eugene Wigner, John von Neumann, Edward Teller and Enrico Fermi.

From the very beginning he was interested in the nuclear reactor, that is the controlled release of nuclear energy. In 1940 he described the heterogeneous uranium-graphite reactor, but he prohibited the publication during the war.

On December 2, 1942 the first reactor was started. This was designed by him and Fermi. At that time this was called a "nuclear pile", referring to its shape and method of manufacturing. In January 1943 he published the design of the so called breeder reactor.

He obtained American citizenship in 1943.

In August 1944 he suggested the international control on atomic energy, in order to hinder the armament competition. Since Germany's defeat was sure, he organized definite actions to avert the deployment of the atomic bomb. Finally he managed to prevent the army from holding total control over nuclear energy. The Atomic Energy Committee was founded on his recommendations. He did everything to stop the Soviet-American armament competition later. The American secret services regularly tracked him and wrote reports on his activity.

In 1955, together with Fermi, they obtained the patent of the nuclear reactor, which the US government later purchased for one dollar.

The Salk Biological Institute was founded on his suggestions, where the research work unified the natural and social sciences. He actively participated in the Pugwash-movement, in which Soviet and American scientists discussed questions regarding peace and disarmament. His bladder cancer was diagnosed in 1959. He personally planned and directed the radiation therapy and recovered from the illness.

On May 18, 1960 he obtained the USA Atoms for Peace prize. In autumn this year he got Hruščov's agreement to the Moscow-Washington hot wire. In June 1962 he organized the first group that dealt with the inspection of armament. From February 1964 he worked at the Salk Institute. Biophysics was born based on his research.

He passed away on 30 May, 1964, in heart attack.
As early as during the secondary school he liked mathematics very much, but requested by his father he started to study chemical engineering, first at the Budapest University of Technology. A few months later he continued his studies in Germany and he made himself familiar with quantum mechanics. After two years of chemistry studies he bound himself to physics for good. He went on to study physics from Sommerfeld. Due to an accident he had to postpone his studies and obtained the doctoral degree in 1930. During the years he was studying he met nearly everybody who played an important role in new fields of physics (Heisenberg, Sommerfeld, Fermi).

First he started to investigate molecules. When Hitler came into power, he moved to England. In 1935, he travelled to the United States upon invitation by Gamow, where he taught at the George Washington University.

In 1938, with Gamow, they explained the energy generation in stars by fusion, that is the thermonuclear reaction.

In 1939 he was one of the organizers of a conference, to which Bohr was invited and told them about the results Hahn achieved in Germany regarding nuclear fission. Later he worked in Los Alamos for the atomic bomb research, but actually he was really interested in the hydrogen bomb since 1942. His main drive was the fear that Stalin was jeopardizing peace, which can only be kept in possession of superiority. This lead him in urging on the hydrogen bomb research and he disagreed to dropping of the atomic bomb. The first experimental thermonuclear bomb explosion was on November 1, 1952.

He dealt a lot with nuclear reactors as well. He was chairman of the US Reactor Safety Council. He realized the hazard points of the uranium-water-graphite reactors and these reactors were shut down in the United States. Later in Chernobil the process he described lead to the catastrophe.
He paid several visits to the Paks Nuclear Power Plant and each time he stated that concerning the safety of the plant and the training of personnel we belong to the leading countries in the world.

Edward Teller in the control room of the Paks NPP.
He was born on 17 November, 1902 and accomplished the secondary school in Budapest.

He studied chemical engineering at the University of Berlin, but he was fascinated by the new discoveries in physics. His thesis, which discussed the evolution of the hydrogen molecule, can be considered as the first work in quantum chemistry. He discovered the role of space-time symmetry in quantum mechanics (1929).

He moved to the United States in 1930 and obtained citizenship in 1937. In 1934, he thought that Szilárd's idea to induce chain reaction using neutrons was good and they worked out the theory together.

Szilárd and he convinced Einstein to sign the letter to president Roosevelt. In frame of the Manhattan project, he - with Szilárd, Neumann, Teller, Fermi and others - also participated in the research work done followed by the letter. He worked on designing the plutonium production reactor, which produced material for the first atomic bomb.

He took part in the development of the first nuclear reactor and its start on December 2, 1942.

He designed the first high-power water cooled reactors. These are the safe reactor types that are used widely today. Nearly 80% of the presently operating nuclear power plants in the world are of this type. In this construction, the cooling water is the moderator in one, therefore, if cooling disappears there will not be slow neutrons any more and consequently the chain reaction will stop. The number of his reactor patents exceed 30, besides these. Weinberg, his student and colleague said about him rightly that "Wigner was the first reactor engineer in the world".

His quantum mechanical works are also significant, for example he declared the principle of conservation of barion charge (1949).
In 1963 he won Nobel prize in physics, for his contribution to the theories of nucleus and elementary particles, mainly for discovering and applying basic symmetry principles.

He did all his best in order that nuclear energy be used for peaceful purposes. He obtained the USA Atoms for Peace prize.

He always talked about his native country and tutors. He visited home regularly and in 1983 he visited the Paks NPP.

Eugene Wigner, when visiting the Paks NPP at the age of 81.