



Nikola Tesla was born on July 10, 1856 in Smiljan near Gospić. From an early age, he memorized important phrases and wise sayings and calculated complex tasks by heart. In Smiljan, Tesla began his education in a public school and at the same time developed his interest in engineering. He continued his education in Gospić. There he acquired a good knowledge of subject comprising natural sciences and the German language.

In 1870, he continued his education in Rakovica, near Karlovac, at the Royal Higher Grammar School. In that period of his life, he constantly thought about certain inventions and constructed models of water turbines.

In 1875, Tesla enrolled at the High technical school (Technische Hochschule) in Graz. During his education, he dealt with the design solution for an electric machine. Disappointed by his failure, he lost his scholarship and in 1879 and stopped his education in the third year of his studies.

With the intention of completing his studies, Tesla went to Prague in 1880. In 1881, he went to Budapest and got a job at the Telegraph Office. There he began his activity in the field of electrical engineering and created several inventions for voice amplification in telephony.

He continued to deal with the alternating current motors. In 1882 he finally solved the design problem of motor using rotating magnetic field. In order to develop his invention, he went to Paris, but there nobody was interested in it. In 1883, he constructed his own induction motor in a mechanical workshop. In 1884, Nikola Tesla moved to the United States, where he got a job at the "Edison Company".

He soon founded "Tesla Light Company" where he wanted to develop his motors. However, at the beginning he was engaged in the production of beacon electric lamps. He developed the system of beacon lamps for direct current and was granted a patent for it in 1886.

"Tesla Electric Company" was founded by Tesla in 1887. He built a workshop and laboratory for his experiments.

From October to December 1887, Tesla was granted patents for his asynchronous motor, electric transfer of energy, an induction motor with short connected rotor and a motor with contact ring, as well as a system of distribution of electric power (a power transformer for multiphase currents).

Modern high voltage electric engineering is based on these patents.

In 1888 Tesla applied for patents for three wired electric transfer, for two-phase and three-phase current, series connection and one pole power transformer for direct and multiphase currents, a torque power

transformer for regulating rotation velocity of induction motors and for asynchronous generators and multipolar machines.

Between 1888 and 1891, Tesla applied for 35 different patents for single and multiphase motors.

In May 1888, Tesla signed a contract with the "Westinghouse Electric and Manufacturing Company", on the basis of which all his inventions in the field of multiphase currents became the property of that company. The first aggregate of the hydro-electric power plant near Niagara Falls was put into operation in 1895, and the hydro-electric power plant was completed in 1896. Almost parallelly as the German physicist Wilhelm Conrad Röntgen, Tesla was performing experiments with X-rays. He also created instructions for working with X-rays. In 1898, Tesla applied for a patent for a device for remote control of ships and vehicles and the device was displayed at the Madison Square Garden. On his initiative a high voltage laboratory was built in Colorado Springs. The laboratory was completed in 1899 and Tesla planned to make experiments with wireless connections and to study lightning.

Nikola Tesla was granted 36 patents in the field of electric motors and generators, 9 in the field of transformation of electric energy, 6 in the field of lighting, 17 patents in the field of high-frequency devices and regulators, 12 inventions in the field of radio, 1 in the field of remote-control mechanical engineering, 7 patents in the field turbines and similar devices and another 11 patents covering various fields. There were total of 99 patents for inventions from various technical fields. He was the first one who pointed out the possibility of electrotherapy, and the possibility of wireless transfer of information and energy. The brilliance s of his mind and his technical solutions are also confirmed by the fact that some of them, even to this day, have not been fully scientifically (theoretically and/or experimentally) verified. As a token of appreciation for his extremely significant contribution to the development of technology, especially in the field of electrical engineering, a unit of magnetic induction has been given his surname.

Since 2014, at the proposal of the Croatian Parliament, July 10 has been celebrated as the National Nikola Tesla day - day of science, technology and innovation.

You can find Nikola Tesla's patent collection at this link <https://www.dziv.hr/hr/tesla-patenti/>