



Nikola Tesla

1856 - 1943

Tesla was one of the most brilliant inventors in the history of humankind. Among his different inventions were the **Tesla coils**, i.e. coreless high-frequency transformers. These devices made worldwide wireless transmission possible and are still the basis of radio and television technology today.

He was born in Smiljan, a village on the northern slopes of Mount Velebit bordering the Croatian Adriatic coast. His father received a military education but became a Christian Orthodox clergyman who made a great impression by his erudition. But Tesla apparently traced his inventiveness to his mother. She had an unusually good memory and knew by heart many Serb folktales and whole chapters of the Bible.

As a child, he was prone to strange accidents. **Once he fell into a bucket of hot milk.** With the help of an umbrella, he tried to fly like a bird from a barn roof, which attempt put him in bed for six weeks.

After the first year of school in Smiljan the family moved to nearby Gospi. He was reading a lot and his father, afraid for his sight, had to take some restrictive measures.

His interest in science and engineering was stimulated in the Karlovac Realka gymnasium, which was oriented towards natural sciences. There, the enthusiastic physics teacher demonstrated various experiments. Nikola was particularly good at mathematics. He was able to calculate even the most complex problems in algebra and arithmetic in his head.

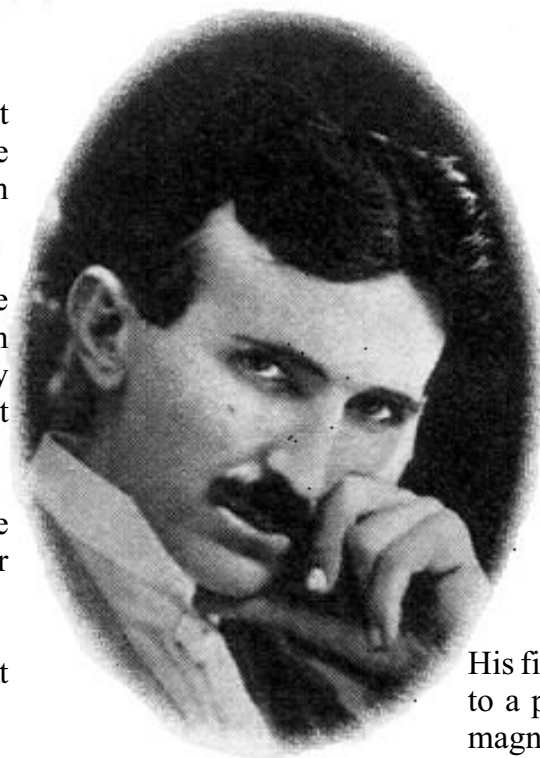
He entered the University of Graz to study mathematics, physics and engineering, where his original thinking and capacity for work showed up. Later, he continued to study at the University of Prague.



$$T = 2\pi \sqrt{\frac{l}{g}}$$
$$= 12.3145 \text{ s}$$

for $l = 37.67 \text{ m}$
 $g = 9.80665 \text{ ms}^{-2}$

He could make complex calculations in his head



He introduced high voltage power transmission



His first employment came from the Budapest telephone company. There he found the solution to a problem occupying his mind since his student days and conceived the idea of rotating magnetic fields. To develop his ideas he went to Paris and Strasbourg, and finally settled in New York, associating himself first with Edison and later with Westinghouse.

After his invention of the first alternating current motor in 1887 he decided to set up his own research laboratory. His most advanced idea was that, ***it is easier and cheaper to transmit very high alternating voltage over long distances*** compared to 'direct current'.

In 1893 in one of his lectures to the learned societies, Tesla announced the idea of wireless transmission of communications and power. Later, he successfully demonstrated the possibility of operation from a distance by controlling the motion of model boats. The patents brought him money which were spent on more experiments.

He dreamed of installing enormous wireless transmitters at Niagara to supply the Paris World Fair with electricity over the Atlantic.

In recognition of the achievements of Tesla and his genius the international unit of magnetic induction is named the '**tesla**' after him. He remained a bachelor throughout his life.

Tesla was concerned about the destiny of humanity, showing his high regard for the place of science. In an article published a few months after the beginning of the First World War he wrote: ***So long as there are different nationalities there will be patriotism. This feeling must be eradicated from our hearts before permanent peace can be established. Its place must be filled by love of nature and scientific ideal. Science and discovery are the great forces which will lead to that consummation.*** Was he right?