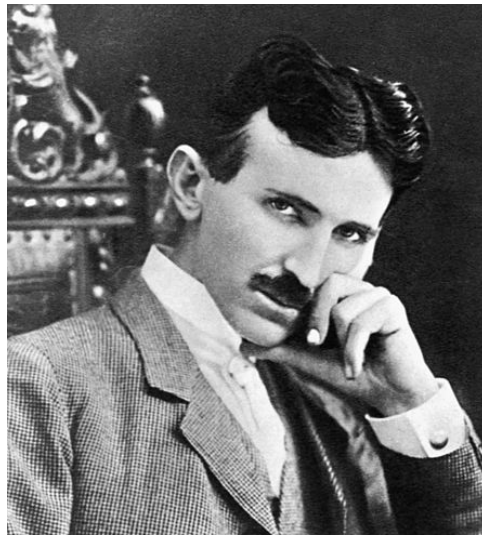


Nikola Tesla

Born: July 10, 1856, Smiljan, Croatia

Died: January 7, 1943, Wyndham New Yorker Hotel, New York City, United States



Tesla, a word commonly associated with future advancement and technology was the name of a Serbian-American physicist, electrical engineer, mechanical engineer, futurist and inventor with no parallel anywhere else on the planet during his time. One of the most remarkable achievements of Tesla was his development of alternating current (AC), which provides power all over the country.

Overview:

Nikola Tesla was born in the year 1856 on the 10th of July in the village of Smiljan, located in the then Austrian Empire (modern day Croatia). Tesla was born into a Serbian family and was the fourth of the five children. Nikola's father, Milutin Tesla, was an orthodox priest and his mother, Duka Tesla, was an extraordinary housewife who was very talented in making mechanical appliances, crafting tools and also had a very sharp memory (Vujovic, 2010).



Milutin Tesla

Nikola Tesla loved mathematics ever since he was a child and during his high school period, showed the amazing ability to perform calculus in his mind, which prompted his teachers to think he was cheating. Not only was he intelligent but he also possessed an eidetic memory that allowed him to recall images in extraordinary detail from memory after only a few seconds of exposure. (Vujovic, 2010).

Early Life:

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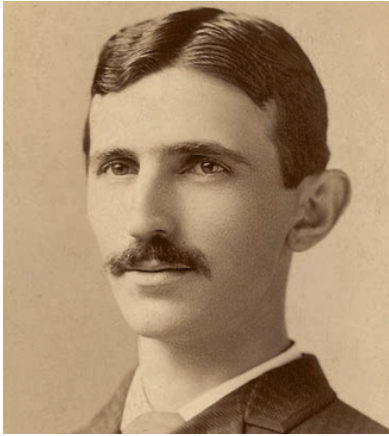


Nikola age 23, 1879

Tesla survived his ordeal and in the year 1875, enrolled at the Austria Polytechnic in Graz, Austria on a scholarship. Tesla aced all of his subjects during his first year and took almost twice as many subjects as normally required. He was well known around the school because of his arduous work habits that involved working from 3 A.M to 11 P.M seven days a week including holidays. It was later revealed that his teachers wrote numerous letters to Tesla's father stating that if Tesla didn't take a break from school, he would die of exhaustion. Unfortunately, in Nicola's second year he became addicted to gambling while at school and at one time, lost his entire tuition money and allowance. His addiction became so severe that

he was unable to prepare for his exams and as a result, failed them and did not graduate (History, 2015).

Working for Thomas Edison:



Tesla - 1885

Tesla moved to Budapest in 1881 to work for the Budapest Telephone Exchange of which he was the chief electrician. During his tenure, he improved numerous systems and gained valuable experience. In 1884 he moved to New York to work at Edison Machine Works under Thomas (Biography.com Editors, 2016).

Tesla started out as a simple electrical engineer and quickly progressed through Edison's company working on more and more complex problems. His most notable work at Edison's company was redesigning Edison's Direct Current motor and generators to

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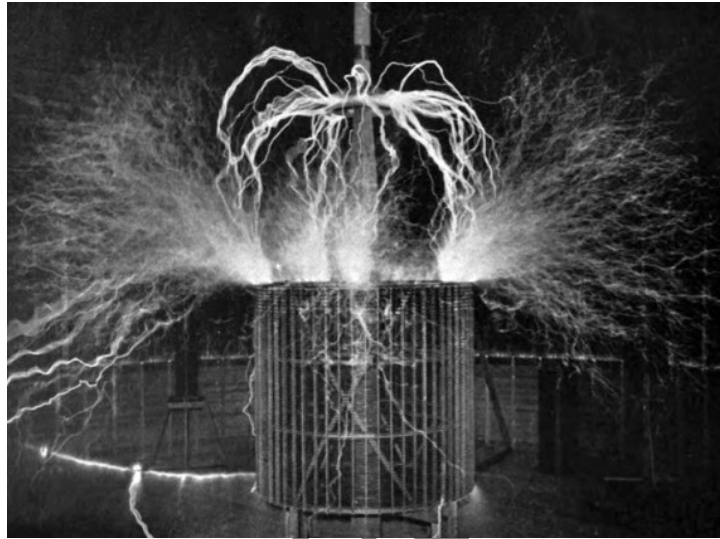
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Alternating Current and the Induction Motor:

During the period his company existed, Tesla began working on motors and generators that would operate on a new form of electricity, Alternating Current (AC). Although Tesla didn't invent AC, he harnessed it in a new and applicable manner. Tesla developed the polyphase alternating current system of generators, motors, and transformers and held 40 U.S. patents. At this time, AC was a fairly new technology and was preferred over Direct Current (DC), which was pioneered by Tesla's former boss and rival, Thomas Edison (King, 2013). The advantage of alternating current was not only that it is more energy efficient than DC, but also because it could travel long distances with minimal loss.

In 1888, George Westinghouse purchased Tesla's patents for \$60,000, as he believed they would supply the nation with long-distance power. This began the power struggle between Tesla's AC and Edison's DC coined the "War of Currents". Their battle culminated in 1893 at the World's Columbian Exposition in Chicago when Tesla's AC power was chosen to supply the lighting. In

1895, Tesla demonstrated the potential for AC's electrical power generation and supply when he constructed one of the first AC hydroelectric power plants at Niagara Falls which was soon used to power nearby Buffalo. This success allowed AC to gain a strong foothold and become the prominent solution for providing electricity to the masses. During his time with Westinghouse, Tesla also patented the "Tesla coil" which produced high-voltage, low-current, high frequency alternating current electricity and later led to the development of the wireless radio.

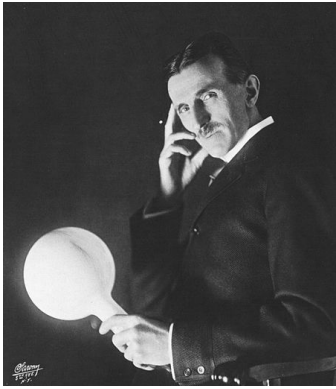


Nikola Tesla's tesla coil, in operation at his Colorado Springs laboratory in 1899-1900

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Tesla - 1898 - Holding his wireless light bulb

His personality was defined as smart, formal but charming in his own way. He was known for his fashion, although he had a small wardrobe, and his ability to carry himself well (Vujovic, 2010). Unfortunately, Tesla suffered a nervous breakdown and became more and more eccentric later in life. Tesla died alone at the age of 86 in a New York hotel room.

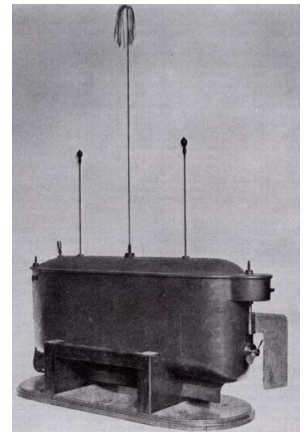
Additional Facts About Tesla:

- Tesla was a brilliant scientist but a very poor businessman. Many inventions and/or ideas of his including dynamos (similar to batteries), radar, X-ray technology, as well as the smartphone (which he thought of in 1901) were patented by others.
- Although Guglielmo Marconi was initially credited with inventing the radio, the Supreme Court overturned his patent in 1943 when it was shown that Tesla did so prior.

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In 1898, Tesla demonstrated a radio-controlled boat

Reading Comprehension Questions

1. Why
2. From reading the text, what role do you think Nikola's mother and father played in his life?
Where do you think he got his "genius" from and why?
3. Create
4. Why
5. What two main advantages does AC have over DC?
6. Who
7. What was the goal of the Wardenclyffe?

Extension Questions

8. What do you think of Nikola Tesla? State your opinion of him as a person as well as a scientist/inventor.
9. What is
10. Research the difference between Direct Current (DC) and Alternating Current (AC). How is each used? Which one do you believe is better? Support your answer with evidence.

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TWF READING

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