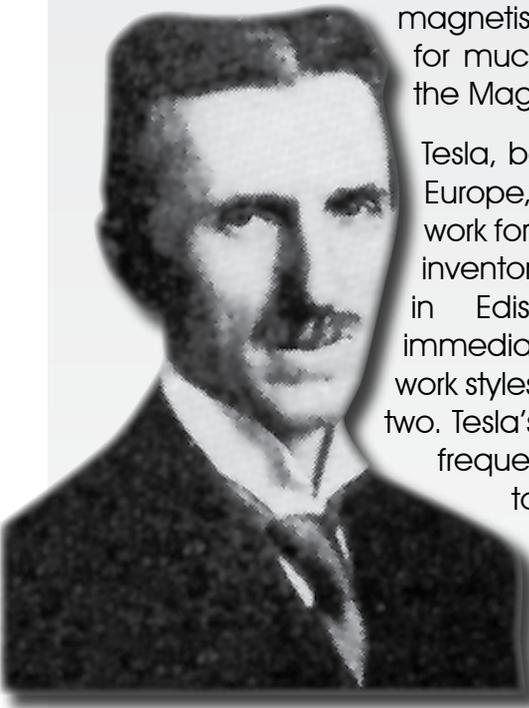


Magnet Milestones

America's forgotten innovator, Nikola Tesla

By Amy Mast

Nikola Tesla may not be the best-known man in American science and invention, but he's one of the most important. His discoveries – aimed at harnessing the power of electricity and magnetism – formed the groundwork for much of the technology used at the Magnet Lab today.



Tesla, born in Serbia and schooled in Europe, came to America in 1884 to work for Thomas Edison at the famous inventor's Menlo Park laboratory in Edison, New Jersey. Almost immediately, their different ideas and work styles caused tension between the two. Tesla's focus on scientific discovery frequently clashed with Edison's bent toward turning a profit. Inside of two years, Tesla left Edison's employ, and he worked for a year as a ditch digger to raise funds for his own New York City laboratory.

In the late 1800s, his most productive years as a scientist, Tesla was a prolific inventor. He is credited with the invention of the radio and with the development of technology to harness alternating current (AC) into the reliable power source we all use today. AC power and Tesla's AC polyphase motor, along with the incandescent light bulb (invented by Tesla's rival, Edison) ushered in the second Industrial Revolution. This revolution in mechanization helped to establish America as a world power that was here to stay.

In New York City, Tesla built various laboratories, making discovery after discovery and also at

A TRUE ECCENTRIC

- Tesla spoke seven languages fluently: English, French, Czech, Serbo-Croatian, Latin, Hungarian and Italian.
- Nikola Tesla's many innovations and accomplishments were not accompanied by sustained riches; his profits were poured back into each new scientific endeavor and he died in debt. He once famously tore up a contract with Westinghouse that would have made him a billionaire.
- Tesla was a close friend of legendary American author Mark Twain.
- Today, Tesla probably would have been diagnosed with obsessive compulsive disorder (OCD). In later life, the scientist was hamstrung by many of his obsessions, including a hatred of jewelry and round objects and a fixation on the number three. He never owned a house or an apartment, preferring to live in hotel rooms whose room numbers were divisible by three.

times making his neighbors uneasy, earning for himself the reputation of a "mad scientist." He built vacuum tubes that lit up wirelessly and he developed the Tesla coil in the 1890s, using it for many of his electrical experiments. Tesla, fascinated by the coil's erratic bursts of miniature lightning, experimented with them all his life, building the world's largest coil in Colorado Springs, Colorado, in 1899. Unlike his former mentor Edison, Tesla was

never an astute businessman. When a project or line of experimentation was finished, he'd sell off his supplies, pay off some of his debts and start over from scratch.



Nikola Tesla holding in his hands balls of electrical energy.

Though Tesla continued working as furiously as ever, after 1900 his reputation began to fall into disrepute. While he continued to produce important results, such as outlining in 1917 the technology that would eventually become radar, his interests began to dovetail into ideas as diverse as harnessing energy from the air and contacting life on other planets. Ideas like these made investors nervous, and several of Tesla's large projects either failed or remained unfunded.

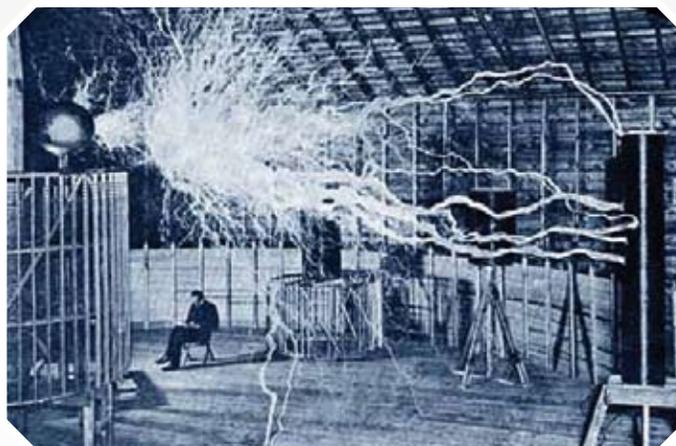
The most crushing blow to Tesla's later career was the 1904 decision to rescind the radio patent Tesla had been awarded and instead give it to Italian

inventor Guglielmo Marconi, who then shared the Nobel Prize in Physics for the invention. Tesla filed a lawsuit to reclaim the patent, but it wasn't restored to him until after his death in 1943, when the U.S. Supreme Court reversed the decision.

Though Tesla died in obscurity, his work earned him a place in history as America's greatest electrical engineer. Computer science, theoretical physics, ballistics, nuclear physics, robotics and radar all benefited from his theories and experiments. Though his accomplishments were at times overshadowed by his eccentricities and carelessness with money, he earned for himself an important place in world scientific history.

FACTOID

Every day at the Magnet Lab, someone says Tesla's name. Why? The unit of measurement "tesla," which describes the strength of a magnetic field, was named in Nikola Tesla's honor in 1960. The Magnet Lab's largest continuous field magnet is measured at 45 tesla.



Tesla's Colorado laboratory.