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NIKOLA TESLA'S CONTRIBUTION TO THE DEVELOPMENT OF KNOWLEDGE ABOUT X-RAYS

The first article in the series on Nikola Tesla

Nikola Tesla, one of the greatest inventors in the world, made revolutionary contributions to modern technology, industry, and science. Although he is remembered mostly for his works and advocacy for alternating current, his contribution is much broader and includes, among other things, the early development of X-ray technology. Although Tesla did not receive full credit for his pioneering work in this area, his experiments with high-voltage vacuum tubes laid the groundwork for later advances in the field. He is remembered for a large number of published works in scientific journals and the daily press, and in this way, he popularized X-radiation, as well as physics in general. He was an inventor of superior scope and an exceptionally gifted practical implementer of complex natural and technical phenomena and processes. This first short article highlights Tesla's participation in the development of X-rays and emphasizes the importance of recognizing and promoting Serbian scientific achievements in physics.

Today, when you say "Tesla," everyone thinks of a man with a highly great mind, physicist, scientist, and inventor. Nikola Tesla was one of the greatest inventors of all time, a Serb raised with a firm faith in God. His contribution to modern technique, technology, industry, civilization, and culture is of inestimable importance. Nikola's top achievements, discoveries, and inventions found the most diverse applications in all areas of modern everyday life. In Figure 1, we can see a portrait of Nikola Tesla from his younger days.

Tesla has 112 granted US patents, but the final number of patents originating from other countries has not yet been determined. So far, over 160 Tesla patents have been discovered that protect his inventions in at least 26 different countries on each of the five continents [1]. However, Tesla was the conceptual originator of many famous scientific achievements for which he did not receive recognition, among which is X-radiation [2].

The opinion that Tesla, experimenting with vacuum tubes under high voltage, produced X-rays even earlier has grounds[1]. In the lectures he gave in 1891, he presented a new way of creating light through vibrations. These were the basic actions from which, by modifying the experiment, the conditions for the creation of X-rays will be obtained [3]. One gets the impression that Nikola dealt with X-rays somehow, "by the way". At the same time, he intensively dealt with his alternating systems and fluorescent and phosphorescent lamps, and his work on X-rays resulted from the experience gained in working in those fields.

[1] The memoirs of Samuel Langhorne Clemens, better known as Mark Twain, testify to this event in the book Bratislav Stojiljkovic, Dragoljub Cucic and Zoran Pajic, “Nikola Tesla and Samuel Clemens: The Friendship Between Two Luminaries of the Gilded Age”, Mark Twain Journal

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When Roentgen announced the discovery of X-rays in 1895, the effects, which he had already seen on his plates, made physical sense to Nikola Tesla [4].

Tesla's contribution is significant, among other things, due to his high-voltage transformer, which was used to generate X-rays of higher intensity because previous electrostatic machines were not suitable for generating larger currents in vacuum tubes. In addition to Nikola Tesla, numerous scientists and researchers have made significant contributions to the definition of X-rays and the observation of their physical characteristics, among whom Mihajlo Pupin stands out. Tesla leads the way in the number of articles published in professional magazines (Electrical Review, Electrical World, Electrical Engineer, English Mechanic & World of Science) and even more in the number of articles in the daily press (New York Times, New York Herald, New York Sun, New York Tribune) which was very important for popularizing the discovery of X-rays[2].

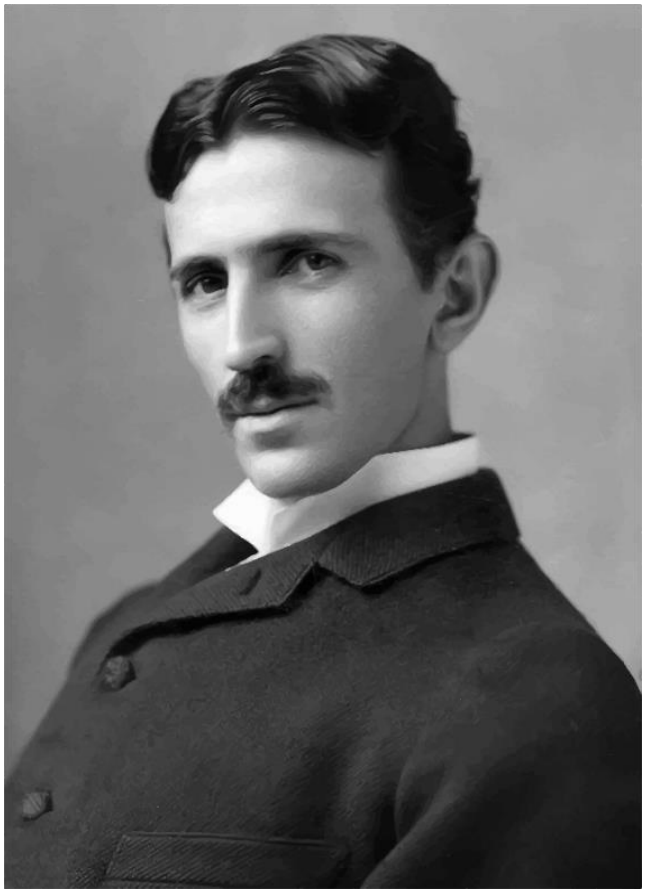

Figure 1. Portrait of Nikola Tesla[3]

Nikola Tesla was never satisfied with the achieved results, even though they were of enormous importance. Still, he always strived for even better results by studying areas that were not the subject of either scientific or technical study until then. His tireless pursuit of

[2] All texts can be found on *The Tesla Collection* page, https://teslacollection.com
[3] Figure is available at Pixabay https://pixabay.com/vectors/person-man-nikola-tesla-science-5432766/

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innovation and constant improvement of his discoveries left an indelible mark in the history of science and technology.

Tesla's character and work can inspire young physicists because he showed that a genuine commitment to science can change the world. He reminds us that there is no limit to research and that it is always possible to push the boundaries while overcoming the challenges that lie ahead. Promoting and recognizing the Serbian scientific heritage and encouraging young generations to research and continue to develop physics in Serbia is also of great importance.

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Reference

[1] S. Šarboh, Telfor Journal 5, (n.d.).
[2] V. Paar, Tesla - vizionar 21. stoljeca (n.d.).
[3] N. Tesla, Trans. Am. Inst. Electr. Eng. VIII, 266 (1891).
[4] D. A. Cucic, D. B. Martinovic, 125 godina od otkrica X-zraka - doprinosi Mihajla Pupina i Nikole Tesle razvoju saznanja, Phlogiston, 28/2020(n.d.).

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