



Michael Idvorsky Pupin

1854 - 1935

Pupin invented the method which made possible long distance telephone communications. He was born in Idvor, a village to the north of Belgrade. His parents were illiterate peasants, but they and the cultural tradition of his people stimulated in him the confidence and self-discipline that raised him to a prominent position in science and society.

The education of young Pupin started in Idvor, continued in nearby Panevo and lead him to Prague. In his early formation most important was the influence of his mother, a religious woman who knew the Old and New Testaments and the lives of the popular saints. After the sudden death of his father he left for the United States.

In the New World he arrived penniless but eager to learn. To earn a living he worked on a farm, carried coal for vapour machines, painted walls, but at the same time he was studying, first the English language, later history, Greek and Latin, and natural sciences. In 1879 after the entrance examination in Columbia University he was awarded a scholarship. He became popular among his fellow students for his friendliness and sporting achievements.

With a scholarship from his university he continued to study. First he went to Cambridge where he studied mathematical physics under the supervision of Tyndall and afterwards to Berlin where he worked with Helmholtz and obtained a doctoral degree.

Back in Columbia he started his long and successful academic career. His most important invention was the first, the theoretical understanding and later the practical realization that by placing inductance coils at predetermined distances along a transmitting wire, the attenuation of electromagnetic waves can be significantly reduced. The process is known as pupinization. Another discovery was that of secondary X-rays. Also, by applying a fluorescent screen he was able to shorten the exposure time needed for making X-ray photography practicable for medical purposes.

His work helped the realisation of long distance telephone communication



His parents were poor peasants but he achieved great wealth

In total he acquired 24 patents and these made him a wealthy man. Being a broad-minded person he made many donations, mostly for his country of origin. After World War I, at the time of the creation of Yugoslavia, he played an influential role in the diplomatic arrangements through his connection with President Woodrow Wilson. In the United States he was active in establishing the American Physical Society.

His warm personality inspired many of his students, among them two Nobel Prize winners, Millikan and Langmuir. The famous physicist Isidor Rabi describes the sensation felt by many that **'when Pupin leaves the room there is a feeling that the lights have gone out'**.

The personal thoughts of Pupin on his life are vividly described in his autobiography 'From immigrant to inventor' which won the Pulitzer Prize in 1924 because 'your work stimulates patriotic and unselfish support for the people'. Interesting is the story about his experience as one of the young boys who were looking after cattle in the fields surrounding Idvor. To communicate at night at large distances the boys used to stick a knife into the ground and provoke its vibration. They learned that sound travels faster through the ground, that it behaves differently in different soils and by experience they could locate the movements at night.