Biography

Michael Faraday was born in Newington, Surrey, England to a blacksmith father and a mother from the countryside [1]. His family were members of a non-Anglican Christian sect that emphasized scriptural adherence and dissented against organizational structures of a church that were not clearly outlined biblically. Faraday believed in these principles, was strongly religious, and participated actively in a church throughout his life.

He only received a basic education in his youth. He learned to read and write in Sunday school but didn’t have the opportunity to study mathematics in detail [2]. Despite this disadvantage, Faraday was able to further his learning while apprenticing as a bookbinder for seven years starting at the age of 14. He would read the books from the shop focusing on the topics of science and had a preference for poring over anything that discussed electricity.

At 20 years old, Faraday went to a lecture series by renowned chemist Sir Humphry Davy. Faraday consolidated his own notes on the lectures, bound them, and sent the book to Davy. Davy was so impressed that he offered Faraday a position as his laboratory assistant at the Royal Institution of Great Britain. It was during this opportunity that Faraday learned a great deal about chemistry and experimental techniques.

After his apprenticeship with Davy, Faraday obtained his own position at the Royal Institution as an investigator. Because of his chemical prowess, he also consulted for large, industrial enterprises and served as an expert witness on chemical evidence in trials. He discovered new chemicals like benzene and invented the first iteration of the Bunsen burner. He married Sarah Barnard, joined the Sandemanian church, and served as a deacon.

Of all his accomplishments, Faraday is most famous for his work with electricity and magnetism. Faraday was fascinated by the discovery of contemporary scientists that a current carrying wire produces a circular magnetic field around it. Faraday took advantage of this phenomenon to create the first successful electric motor.

Faraday continued to work on theories and experiments in electromagnetism until 1839 when he suffered a nervous breakdown as well as developed a physical disability hampering his ability to walk. It has been theorized that he may have suffered from poisoning from mercury which he utilized heavily in his experimentation.

He returned to his work in 1845. He was offered knighthood by Queen Victoria but declined it preferring not to collect honorific titles and excess wealth citing his religious principles. He did however accept the use of a home at Hampton Court near his laboratory. He refused on ethical grounds to advise the British government on the development of chemical weapons during the Crimean War. He turned down the offer to be buried at Westminster Abbey, and when he died in 1867 he was instead interred at Highgate Cemetery in a special section for those who dissented against the Anglican church.

Electrolysis