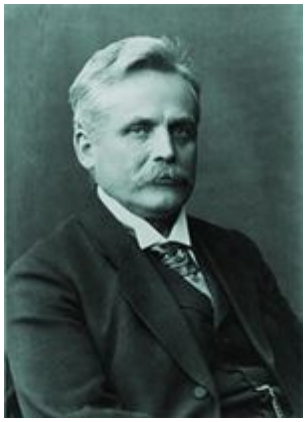
Wilhelm Wien



Wilhelm Wien's best known contribution to research in heat radiation is Wien's displacement law which provides a relationship between the temperature of a black body and the wavelength of the peak of emission. Among other things it is used for understanding the green house effect in meteorology.

Biography

Wilhelm Carl Werner Otto Fritz Franz Wien was born in a little town in East Prussia called Gaffken, which is close to Fischbach (nowadays: Primorsk) on January 13th 1864. In 1879 he was forced to quit high school due to his bad marks. After that he received private lessons which soon allowed him to go back to high school - this time in Königsberg - where he finished school successfully.

In 1882 he started to study math and natural sciences in Göttingen. In the winter term of 1883/84 he transferred to Berlin and continued his studies in math and physics under Hermann von Helmholtz. In 1886 Wien received his Ph.D. with a thesis "On the diffraction of light upon photographically miniaturized lattices". In 1892 Wien habilitated at the Friedrich-Wilhelms-University of Berlin. Between 1896 and 1899 he lectured in Aachen and between 1899 and 1900 in Gießen.

In 1900 he accepted a chair in Würzburg, where he became successor of Röntgen.

In 1911 Wilhelm Wien received the Nobel Prize in Physics for his work on heat radiation. Between 1913 and 1914 he was president of the University of Würzburg.

In 1920 Wien moved to Munich where again he became successor of Röntgen and university president between 1925 and 1926. Wien died unexpectedly in Munich on August 30th 1928.

Research/Nobel Prize

After 1888 Willy Wien participated in the task to solve the technical/economical problem whether gas or electrical light would be more favorable. Therefore it made sense to solve the question: what is radiation? As a physicist this had to be solved by measurements. For this purpose a special radiation source was built, the black body. The intensity of different wavelengths - "colors" - of this radiation source was measured at various temperatures. Wien thought about the relationship between the peak of intensity and the temperature of the radiation source. He was able to find a mathematical expression for it. Later on, in 1896, he was able to deduce a formula which correctly reproduced big parts of his measurements! Four years later Max Planck deduced his law of black body radiation on the basis of quantum theory, which matched all parts of the measurements.

Working and living in Würzburg

During the winter term in 1899/1900 Wien was offered a professorship at the University of Würzburg as successor to Röntgen. He accepted in the spring of 1900. After twenty years the family with their four children Gerda, Waltraud, Karl and Hildegard finally settled down in Würzburg. The married couple moved into the big apartment on the top floor of the Department on 'Röntgenring 8'. Life and work in this beautiful city was pleasant and they were able to do nice trips to the surrounding area. Wien and his assistants enjoyed pretending to be a traveling group from England. Starting form Würzburg he made several trips to European countries like Spain, England, Italy and Greece. In Würzburg he also had the time to practice his former interest in history and arts.