Johannes Robert Rydberg Biography

Johannes Robert Rydberg

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Biography

Johannes Rydberg was a Swedish physicist noted for his work in spectroscopy. The son of a merchant and ship owner, Rydberg was born in Halmstad. He enrolled in the University of Lund in 1873, receiving his bachelor's degree in mathematics in 1875 and his doctorate in 1879 for his thesis on the construction of conic sections. He then became a lecturer in mathematics at Lund. Soon afterwards, he turned his attention to **mathematical physics** and worked on research with **electricity**.

Rydberg's most important scientific contribution stemmed from his interest in understanding the periodic system of elements. Determined to find some kind of order in the overwhelming data of the atomic spectra, Rydberg discovered a fairly easy mathematical calculation to relate the various lines in the spectra of the elements. To minimize the number of calculations, he introduced the wave number *n*, which expresses the number of wavers per centimeter. Working on the Balmer formula, he developed what is now known as the **Rydberg constant**. Rydberg's work also provided the foundation for the development of the structure theory of the **atom**.

Rydberg married Lydia Eleonora Matilda Carlsson in 1886, and the couple had three children. Despite his important contributions to physics, Rydberg's career was beset with disappointments and setbacks. Although nominated for the Nobel Prize, he never received it. He also had to fight for tenure as an academic, which he received with his appointment as chair of physics at Lund in 1901, at the age of 42. By 1914, his health seriously deteriorated and he took sick leave, never to return. Rydberg died of a brain hemorrhage five years later.