



Ernst Ruska

1906-1988

Ernst Ruska was the German physicist credited with the invention of the electron microscope. In his autobiography Ruska indicated that he had two primary research interests - developing materials for the building of vacuum instruments, and conducting experiments on the optical behavior of electron rays. Through his work in these areas he demonstrated that a magnetic coil could act as a lens for electrons, and that such an electron lens could be used to obtain an image of an object irradiated with electrons. By coupling two electron lenses he produced a primitive microscope. While the magnifying power of his first instruments were modest, he continued to refine the technology and in 1933 was able to build the first electron microscope with a performance clearly superior to that of the conventional light microscope. Ruska subsequently contributed actively to the development of commercial mass-produced electron microscopes that rapidly found applications within many areas of science. In 1986 Ruska was awarded the Nobel Prize in physics "for his fundamental work in electron optics and for the design of the first electron microscope," noting that it was one of the most important inventions of the 20th Century.