Sir William Crookes' 1885 investigations revealed that heated cathodes in a vacuum produced 'Cathode rays,' radiation capable of making gases glow and substances emit light. By the mid-nineties, these rays were known to carry a negative charge and be deflected by magnetic fields, leading to debate over their nature as waves or particles. In 1897, J. J. Thomson, using a discharge tube experiment with high-voltage electricity through low-pressure gas, demonstrated these streams were indeed particles, which he named electrons. A typical discharge tube is a long glass tube with two sealed metal electrodes.