

REVIEWS OF MODERN PHYSICS

VOLUME 28, NUMBER 3

JULY, 1956

Conference on Quantum Interactions of the Free Electron

ON April 23, 24, and 25, 1956, an international conference was held at The University of Maryland on the subject of "Quantum Interactions of the Free Electron." As far as can be ascertained, it was the first time that an international conference was devoted to this specialized topic in the United States, and most probably it was the first time in the world. The main subjects under discussion were as follows: electron scattering and energy losses, electron interferences, electron polarization, and positron interaction with matter.

The year 1956 marks the 100th anniversary of the birth of J. J. Thomson. It appeared quite fitting that a conference devoted to the specialized aspects of electron physics should be a commemorative one honoring the "Father of Electron Physics." This year is also the 75th birthday of C. J. Davisson. Although circumstances unfortunately prevented the joint formal celebration of the two events, the subject of the conference itself serves as a monument to the contributions to electron physics of these great scientists.

The conference was organized essentially as a "working conference," meaning that roughly half of the time was devoted to reviews presented by appointed discussion leaders, and about half of the time left to entirely free discussion of the topics initiated by the reviews. The present issue of *Reviews of Modern Physics* contains the review papers without the discussions following each paper. Editing of the voluminous discussion material would have delayed unduly the publication of the review papers of the conference, although it should be noted that the authors of the reviews had a chance to correct their presentations or add some material based on the conference discussions. All discussions of the conference were recorded on magnetic tape. These records are being stored at the Electron Physics Section of the National Bureau of Standards and are available for inspection upon request.

In addition to the review papers, the conference was addressed by Sir George Thomson and Dr. K. K. Darrow on the subject of the "History of Electron Physics." In the first of these speeches, Sir George

Thomson gave an excellent presentation of the times and accomplishments of J. J., whereas the second speaker covered the history of electron physics in America. These two speeches, together with an introductory address at the opening of the conference given by Dr. A. T. Waterman, are expected to be printed in a forthcoming issue of *Physics Today*.

One hundred and eighty-seven persons registered as participants of the conference. A remarkably high percentage came from foreign countries. The twenty-nine foreign participants represented Canada, England, France, Germany, Holland, Italy, Japan, and Norway.

The impressive list of sponsors of this conference includes: the International Union of Pure and Applied Physics, the National Science Foundation, The University of Maryland, the Office of Naval Research, the Office of Scientific Research (ARDC), and the National Bureau of Standards. Words can hardly express the appreciation of the members of the Steering Committee for the cooperation and efficient help obtained from these various organizations. The success of the conference is sufficient proof of the usefulness of the sponsors' contributions, and pointed the way, at the same time, toward more international conferences on the subject of electron physics, where a number of specialized workers can get together for really adequate discussion and exchange of opinions.

The conference Steering Committee was composed of the following members: J. W. Beams, K. K. Darrow, H. D. Hagstrum, D. Pines, R. L. Sproull, J. S. Toll (Liaison: J. H. McMillen and W. R. Gruner), with the undersigned as chairman. I am taking this opportunity to express my heartfelt thanks to the members of the Steering Committee for all their help and cooperation. This would not have been sufficient without the most unselfish help given by a number of individuals from the staffs of the Physics Department of The University of Maryland and the Electron Physics Section of the National Bureau of Standards. Enumerating all of them would require too much space, but I wish to thank them for their contributions.

L. MARTON