

**THE THERMIONIC
VACUUM TUBE
AND ITS APPLICATIONS**

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BY

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PREFACE

IN a comparatively short time the applications of Thermionics have grown to a considerable extent, and are now not only of great value in engineering fields, but are also penetrating more and more into university and college laboratories. It is difficult for those who are interested in the subject, but who have not had the opportunity or the time to follow its development closely, to abstract from the literature, which has become quite voluminous, the principles of operation of thermionic vacuum tubes. This and the popularity which the remarkable ability of these tubes to perform a great variety of functions has gained for them, have created a need for a book describing in a connected manner the more important phenomena exhibited by the passage of electrons through high vacua.

In this work I have endeavored to set forth the principles of operation of thermionic vacuum tubes, and to coordinate the phenomena encountered in a study of this field. Such a procedure is sure to result in a more valuable book than a detailed description without proper coordination of the many investigations that have been published on this subject.

I have tried to make the treatment sufficiently elementary to meet the demands that will necessarily be made on a book of this kind. This is especially the case with the first few chapters, which must be regarded as very elementary and are mainly intended for those who are interested in the applications of thermionic tubes but are not sufficiently acquainted with the properties and behavior of electrons to understand the operation of these tubes.

I wish to express my indebtedness to several of my colleagues who have read parts or all of the manuscript. In this connection I wish to mention especially Mr. C. A. Richmond and Dr. P. I. Wold.

H. J. v. d. B.

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