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FOREWORD

The present collection of papers, presented at the 5th Symposium on Photo-Electronic Image Devices, is the last to be edited by Professor James D. McGee, OBE, FRS. I learned with great regret that he decided to give up this phase of his activities.

It was about 15 years ago that we first discussed his plans to organize the first of his famous symposia and we both came to the conclusion that Advances in Electronics and Electron Physics would be the right medium for making the results of these gatherings available to the technical community. The success of the first symposium in 1958 demonstrated amply that, together with the following ones, these symposia filled a need and the proceedings, published in our volumes 12, 16, 22 and 28, became the best source of up-to-date information in the rapidly progressing field of photo-electronics.

This is not the place to introduce Professor McGee to the readers of this series. In many fields his name is a household word and many well-deserved honors came his way. We can fully understand his wish to engage in other activities. We will miss him and our best wishes accompany him in his future endeavours.

As usual we shall list again the subjects and authors of proposed future reviews:

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| A. N. BROERS | Microfabrication Using Electron Beams |
| KARL ZAININGER | The Effects of Radiation in MIS Structures |
| R. G. E. HUTTER and H. DRESSEL | Small Angle Deflection Fields for Cathode Ray Tubes |
| M. W. THOMPSON | Sputtering |
| M. J. WHELAN | Interpretation of Electron Microscope Images of Defects in Crystals |
| ROBERT S. KENNEDY | Optical Communication through Scattering Channels |
| MORRIS ETTEBERG and B. VURAL | Wave Interactions in Solids |
| J. L. DELCROIX | Hollow Cathode Arcs |
| R. SIZMANN and | Channelling in Solids |
| CONSTANTIN VARELAS | |

- W. HARTH and H. G. UNGER Physics and Applications of MIS-Varactors
- S. NAMBA and KOHZOH MASUDA Ion Implantation in Semiconductors
- PAUL K. WEIMER Self-Scanned Solid State Image Sensors
- BRUCE D. MCCOMBE and ROBERT J. WAGNER Quantum Magneto-Optical Studies of Semiconductors in the Infra-red
- R. N. JACKSON and K. E. JOHNSON Gas Discharge Displays
- DAVID H. SEIB and L. W. AUKERMAN Photodetectors for the 1μ to 0.1μ Spectral Region
- H. SAUZADE High Resolution Nuclear Magnetic Resonance in High Superconducting Fields
- JOSEPH J. LOFERSKI The Photovoltaic Effect
- SERGIO COVA, MARIO BERTOLACCINI and CAMILLO BUSSOLATI Application of Single Photon Techniques
- KARL FRANK and FREDERICK T. HAMBRECHT The Future Possibilities for Neural Control
- HAROLD R. KAUFMAN Electron Bombardment Ion Sources for Space Propulsion
- D. MIDGLEY Recent Advances in Hall-Effect Research and Development
- S. TESZNER Semiconductor Microwave Power Devices
- K. M. ADAMS, E. DEPRETTERE and J. O. VOORMAN The Gyrator
- M. D. TABAK and J. L. THOURSON Electrophotography
- JEFFREY FREY and RAYMOND BOWERS Microwave Device Technology Assessment
- JOHN W. HOPPER and R. K. FEENEY The Excitation and Ionization of Ions by Electron Impact
- ROBERT A. HELLIWELL Whistlers and Echoes
- J. L. HIRSHFIELD Experimental Studies of Acoustic Waves in Plasmas

Washington, D.C.
August, 1972

L. MARTON

PREFACE

It is again a pleasure to us and a certain source of pride to present Volumes 33A and 33B of "Advances in Electronics and Electron Physics", being the Proceedings of the 5th Symposium on "Photo-Electronic Image Devices" held at Imperial College, London University, from September 13th to 17th, 1971.

From the holding of the first Symposium in 1958 until the appearance of these volumes, it will be almost 14 years, and that period has seen an enormous development in this specialized subject. To those of us who have been associated with this work, the gratifying and exciting fact is that the subject seems to be as alive and flourishing as ever. New ideas seem to be developing at least as fast, and probably faster, than at any time in the past. It is perhaps not too optimistic of us to hope that these Symposia, and the Proceedings that follow, have contributed something to the stimulation and cross-fertilization of this fascinating field of experimental physics. In these two volumes, we have attempted to achieve a clear and uniform presentation of the material. We have attempted to rectify accidental errors, but have left the last word on scientific subject matters to the authors.

On the personal level, it has been a great pleasure to meet and develop friendships with so many colleagues from different countries, and again we hope we have contributed something by bringing people together primarily to advance a common interest but, incidentally, to enrich their lives by personal contacts. It is particularly gratifying to see so many young people attending, participating and presenting accounts of their work.

We especially wish to thank Professor A. Lallemand, who has contributed so much to this subject and to these Symposia, for his gracious speech at the opening of this Symposium.

Our very sincere thanks are due to our colleagues in the Applied Physics Department of Imperial College who gave unstintingly of their time and energy during the running of the Symposium. Especial thanks are due to Dr. B. L. Morgan who undertook the heavy burden of the organization.

Finally, we wish to thank Academic Press and Dr. L. Marton, Editor of the "Advances," for making this publication possible and for their help and co-operation in preparing these volumes.

*London,
August 1972.*

J. D. MCGEE
D. MCMULLAN
E. KAHAN