

CONTENTS

LIST OF CONTRIBUTORS	v
FOREWORD	xi
PREFACE	xiii
CONTENTS OF VOLUME B	xix

Electronography

Perfectionnement de la Caméra Électronique—Application à l'Infra-rouge. By A. LALLEMAND	1
Sur le Gain en Sensibilité, dans l'Infra-rouge Proche, de la Caméra Électronique par rapport à la Photographie Classique. By M. ALPERN, A. BIJAOU AND M. DUCHESNE	5
The Spectracon—An Electronographic Image Recording Tube. By J. D. MCGEE, A. KHOGALI, A. GANSON AND W. A. BAUM	11
Electron Transmission through Mica and the Recording Efficiency of the Spectracon. By J. D. MCGEE, A. KHOGALI AND A. GANSON	31
On the Transmission of Medium Energy Electrons through Mica. By S. JEFFERS AND J. D. MCGEE	41
Some Measurements on the Direct Recording of Electron Images Using Thin Windows. By B. E. WHEELER AND C. J. EMBERSON	51
Progress in the Development of the Lick-Stromlo Electronic Camera. By GERALD E. KRON AND I. I. PAFIASHVILI	59

Image Tubes

Performance of the Transmission Secondary Electron Image Intensifier. By P. H. BATEY AND N. A. SLARK	63
The Distribution of Single Electron Pulse Sizes from Multidynode Electron Multipliers, and Single Electron Detection. By GEO. T. REYNOLDS	71
Operating Characteristics of a Four-stage Cascade Image Intensifier. By R. P. RANDALL	87
The Influence of Temperature on the Performance of a Cascade Image Intensifier. By W. N. CHARMAN AND A. V. HEWITT	101
A Cascade Image Intensifier. By J. D. MCGEE, R. W. AIREY, M. ASLAM, J. R. POWELL AND C. E. CATCHPOLE	113
A Comparison of Some Properties of Image Intensifiers of the Transmitted Secondary Emission Multiplication Type and of the Cascade Type. By D. L. EMBERSON	129
X-Ray Detection by Channel Electron Multipliers. By J. ADAMS	139

Signal Generating Tubes

The Grating Storage Target. By ARTHUR S. JENSEN, WALTER G. REININGER AND IGOR LIMANSKY.	155
The Development of Camera Tubes for Recording Astronomic Images. By A. DANFORTH COPE AND EDUARD LUEDICKE	175
Low Energy Quanta Image Transducers Using a Controlled Recombination Mode. By R. K. H. GEBEL	189
A High-resolution Ruggedized Half-inch Vidicon. By J. WARDLEY	211
Secondary Electron Conduction (SEC) and its Application to Photoelectronic Image Devices. By G. W. GOETZE	219
The SEC Target. By A. H. BOERIO, R. R. BEYER AND G. W. GOETZE	229
An Optically Scanned SEC Camera Tube. By R. R. BEYER AND G. W. GOETZE	241
Point-source Imaging with the SEC Target. By R. R. BEYER, M. GREEN AND G. W. GOETZE	251
Ultra-violet Sensitive Camera Tubes Incorporating the SEC Principle. By D. D. DOUGHTY	261
A Television Camera-tube Using a Low Density Potassium Chloride Target. By R. S. FILBY, S. B. MENDE AND N. D. TWIDDY	273
Performance Comparison of the SEC Camera Tube and the Image Orthicon. By F. B. MARSHALL AND G. D. ROANE	291
Electron Bombardment Induced Conductivity in Lead Monoxide. By P. H. BROERSE	305
On some Properties of Electron Bombardment Induced Conductivity. By C. GUILLARD AND D. R. CHARLES	315
Visible and X-Ray Image Devices Working on the Induced Conductivity Principle. By D. R. CHARLES AND M. DUCHET	323
The Evoscope—A Fixed-pattern Generator Using a Au-Si Diode. By E. MIYAZAKI, H. MAEDA AND K. MIYAJI	331

Image Evaluation

A Figure of Merit Measuring Picture Resolution. By T. RINDFLEISCH AND D. WILLINGHAM	341
Special Problems in Measuring the Modulation Transfer Function of X-Ray Image Intensifiers. By INGBORG STAHNKE AND HANS HEINRICH	355
The Assessment of Image Quality in Medical Fluoroscopy. By W. HERSTEL	363
Application of Information Theory to the Evaluation of Two Image Intensifier Tubes. By J. E. BECKMAN	369
Sensitivity of Image Intensifier-Film Systems for Observing Weak Light Sources. By GEO. T. REYNOLDS	381
The Measurement of the Modulation Transfer Functions of Fluorescent Screens. By D. G. TAYLOR	395
The Evaluation of Cascade Phosphor-Photocathode Screens. By J. D. MCGEE, M. ASLAM AND R. W. AIREY	407

CONTENTS

xvii

Measurement of the Spatial Frequency Response of Image Devices. By C. E. CATCHPOLE	425
A Microphotometer for Use with Photographic and Electronographic Recording Image Tubes. By EDWIN W. DENNISON	435

Photocathodes

Sensitization of Electrostatically Focused Image Converters. By A. E. JENNINGS AND R. J. DEAN	441
Some Properties of the Sb-Rb-Cs Photocathode. By M. JEDLIČKA AND P. VILÍM	449
A Microbalance Study of the Cs-Sb and Na-K-Sb Photocathodes. By B. R. C. GARFIELD AND R. F. THUMWOOD	459
La Caméra Électronique: Un Récepteur d'Images sans Lumière Diffusée. By GÉRARD WLÉRICK AND ACHILLES GROSSE	465
Research on Photocathode Surfaces at the Bendix Corporation Research Laboratories Division. By D. G. THEODOROU	477
Spectral Response of S-1 Photocathodes in the Near Infra-red. By A. MALHERBE, M. TESSIER AND S. VERON	493
Time-response of Photocathodes. By M. DUCHET	499
Use of the Image Dissector in Photocathode Research. By R. H. CLAYTON AND J. L. GUMNICK	507
Résultats Obtenus à l'Aide de la Caméra Électronique Lallemand dans l'Étude de l'Émission Photoélectrique. By P. VERNIER AND P. HART- MANN	519
Routine Measurement of the Responsive Quantum Efficiency of Photo- emissive Cathodes. By W. L. WILCOCK	535

Phosphor Screens

High-resolution Phosphor Screens. By J. BEESLEY AND D. J. NORMAN	551
Preparation of High-resolution Phosphor Screens. By H. D. STONE	565
High Quality Phosphor Screens for Cascade Image Intensifiers. By J. D. MCGEE, R. W. AIREY AND M. ASLAM	571

Electron Optics

Aberrations of Diode Image Tubes. By W. M. WREATHALL	583
The Influence of Photocathode Resistance and Space Charge on the Resolution of Magnetic Focus Systems. By W. HOPMANN	591
Possibilities of Reducing Image Defects in Electron-optical Imaging Devices Using Electrostatic Lenses. By W. HEIMANN	601
Sur la Réalisation d'un Objectif à Immersion à Lentilles Cylindriques Croisées en vue de son Utilisation comme Système Focalisateur de la Caméra Électronique: Résultats Préliminaires. By M. DUCHESNE AND C. HÉZARD	609
Magnetic Focusing of Image Tubes. By W. A. BAUM	617

Secondary Electron Emission

- Statistics of Transmitted Secondary Electron Multiplication. By W. L. WILCOCK 629
- Response of Low-density KCl Foils to Multi-MeV Electrons. By E. L. GARWIN AND J. EDGE CUMBE 635

Miscellaneous

- Reaction of Caesium Vapour with Gold. By M. HIRASHIMA AND M. ASANO 643
- Effects of Caesium Vapour upon Target Glass of Image Orthicon. By M. HIRASHIMA AND M. ASANO 651
- Optimum Conditions for Activating Silver-Magnesium Alloy Dynodes in Water Vapour. By M. HIRASHIMA 661