

CONTENTS

	Page
Preface	5
A Brief Survey of Exploding Wire Research, William G. Chace	7
Theoretical and Experimental	
The Current Pause in an Exploding Wire, R.J. Reithel, J.H. Blackburn, G.E. Seay and S. Skolnick	19
Submicrosecond Wire Exploding Studies at Electro-Optical Systems, Inc., F.H. Webb, N. Chase, M. Ernstene and A. Tollestrup	33
Conductivity During "Dwell Time" of a Wire Explosion, W.G. Chace, R.L. Morgan and K.R. Saari	59
The Electrical Behavior of Fine Wires Exploded by a Coaxial Cable Discharge System, T.J. Tucker and F.W. Neilson	73
Large Exploding Wires - Correlation to Small Wires and Pause- Time versus Length Dependency, E.C. Cnare and F.W. Neilson	83
Use of the "Action Integral" in Exploding Wire Studies, G.W. Anderson and F.W. Neilson	97
Exploding Wire Phenomena at Reduced Pressures, T. Korneff, J.L. Bohn and F.H. Nadig	104
The NRL - AFSWP Exploded Wire Research Program, V.E. Scherrer	118
The Pinch Effect in the Exploding Wire Phenomenon, J. Katzenstein	135
Radiometric Temperature Measurements of Exploding Wires, E.B. Mayfield	147
Radial Distribution of Current and Its Effect in an Exploding Wire, R.C. Maninger	156
The Cinemicroscopic Observation of Exploding Wires, D. Zernow and G. Woffinden	170
Studies of Exploding Wire Phenomenon by Use of Kerr Cell Schlieren Photography, W. Müller	186

CONTENTS (Continued)

Shock Waves

Flow Fields Produced by Exploded Wires, F.D. Bennett	211
Theoretical Analysis of the Hydrodynamic Flow in Exploding Wire Phenomena, C.A. Rouse	227
On the Propagation of Cylindrical Shock Waves, A. Sakurai	264
Exploding Wires, Calculation of Heating, E. David	271

Applications and Technique

Bonding Experiments with Exploding Foils, D. Schiff	283
Image Formation of the Rapid Vaporization of Metal Filaments in Vacuo by the Sensitization and Autoradiographic Methods, L.E. Preuss	288
Applications of the Exploding Wire Technique in Photochemistry, R.A. Marcus	307
A Reliable Three-Channel Delayed Wire Exploder Unit, E.E. Walbrecht	315
High Power Pulse Steepening by Means of Exploding Wires, G.S. Janes and H.E. Koritz	323
High Voltage, Quick-Acting Fuse to Protect Capacitor Banks, H.B. McFarlane	324
High-Speed Framing Camera for Photographing Exploding Wire Phenomena, F.H. Nadig, J.L. Bohn and T. Korneff	345
Exploding Wire Plasma Accelerator, W.L. Starr	365