

CONTENTS

Foreword	
N. G. Basov	v
Preface	
The Editors	vii
I. INTRODUCTORY PRESENTATIONS	
Introductory Comments to Laser Interaction and Related Plasma Phenomena	
P. Harteck	1
Picosecond Laser Pulses	
A. J. DeMaria, W. H. Glenn, Jr., M. J. Brienza, and M. E. Mack	11
II. INTERACTION AT LOWER LASER ENERGIES	
Thin Films of Metals and Inorganic Compounds Vacuum Deposited by High Energy Laser	
H. Schwarz	71
Mass Spectrometric Studies of the Interaction of Laser Beams with Solids	
R. E. Honig	85
Scattering of Laser Radiation	
S. C. Wait, Jr.	109
Laser Triggered Switching	
A. H. Guenther and J. R. Bettis	131
III. EXPERIMENTS WITH LASER PRODUCED PLASMAS	
Energetic Ions Produced by Laser Pulse	
W. I. Linlor	173
Linear and Nonlinear Laser Induced Emission of Ions from Solid Targets With and Without Magnetic Field	
H. Schwarz	207
Thin Films of Solid Hydrogen	
S. Witkowski	223
Kinetic and Ionization Phenomena in Laser Produced Plasmas	
G. V. Sklizkov	235
Free Targets	
S. Witkowski	259
Experimental Results of Free Targets	
H. Hora	273

IV.	THEORETICAL WORK OF LASER PRODUCED PLASMA	
	Interaction of Intense Light Pulses with Solid Materials	
	A. Caruso	289
	Numerical Calculations of Plasma Heating by Means of Subnanosecond Laser Pulses	
	J. W. Shearer and W. S. Barnes	307
	Shock Wave Process and Numerical Calculations	
	S. Witkowski	339
	Thermokinetic Expansion Theory	
	J. M. Dawson	355
	Some Results of the Self-Similarity Model	
	H. Hora	365
	Nonlinear Effect of Expansion of Laser Produced Plasmas	
	H. Hora	383
V.	APPLICATION TO THERMONUCLEAR FUSION	
	Application of Laser Produced Plasmas for Controlled Thermonuclear Fusion	
	H. Hora	427
	High Density and High Temperature Laser Produced Plasmas .	447
	Appendix - Neutron Production in Solid Deuterium Laser Created Plasmas	
	F. Floux	469
VI.	AFTER DINNER ADDRESS	
	Nonlinear Optics, Scientific Past and Technological Future	
	N. Bloembergen	477
	LIST OF CONTRIBUTORS AND ATTENDEES	485
	AUTHOR INDEX	489
	SUBJECT INDEX	505