

CONTENTS

LECTURES

I.1	I.J.Spalding	1
	Characteristics of Laser Beams for Machining	
I.2	M.F.von Allmen	49
	Coupling of Laser Radiation to Metals and Semiconductors	
I.3	M.Bass	77
	Laser Heating of Solids	
I.4	D.Turnbull	117
	Thermodynamics and Kinetics of Laser Induced Structure Changes	
I.5	C.M.Banas	143
	CO ₂ Laser Materials Processing	
I.6	G.Sepold	163
	Hardening and Alloying of Steel Surfaces by High-Power Laser Beams	
I.7	M.Bertolotti	175
	Laser Annealing of Semiconductors	
I.8	C.Hill	221
	Laser Annealing of Semiconductors Devices	

SEMINARS

II.1	V.Bartirolo,A.Cutolo,S.Solimeno	231
	Handling of High Power Beams for Laser Metal Working Systems	

II.2	I.J.Spalding Metal Processing at Culham	271
II.3	F.T.Arecchi,C.Castellani,J.Tredicce Time Dependent Effects in Laser Heating of Organic Materials	283
II.4	S.U.Campisano Ion Beam Analysis of Near Surface Regions	289
II.5	R.Wallace, M.Bass,S.Copley Shaping Ceramics with a Continuous Wave Carbon Dioxide Laser	301
II.6	M.von Allmen Laser-Induced Structural Changes in Si-Metal Thin Films	323
II.7	L.D.Laude,R.Andrew,L.Baufay Laser Ordering in Elemental Semiconducting Films	333
II.8	M.Wautelet,M.Failly-Lovato Laser Induced Structural Changes in the Bulk and at Defect Sites in Semiconductors	345
II.9	A.F.Stewart, M.Bass Intensity Dependent Absorption in Semiconductors	367
II.10	A.S.Epifanov Theoretical Aspects of Interaction of Laser Radiation with Hot Electrons in Solids	377
II.11	V.P.Kalinushkin, V.V.Voronkov, G.I.Voronkova, V.N.Golovina, B.V.Zubov, T.M.Murina, A.M.Prokhorov Impurity Clouds in Silicon and Germanium	405
II.12	J.I.B.Wilson Amorphous Silicon Solar Cells	413
II.13	A.Luches Pulsed Electron Beam Applications for Semiconductor Annealing	443

CONTRIBUTIONS

III.1	S.D. Allen Laser Chemical Vapor Deposition	455
III.2	G.Fritzsche Cutting with CO ₂ -Lasers in the Automobile Industry	469
III.3	E.L.Mathé, J.P.Eymery Induced Effects of a Laser Pulse on Defects and Disorder Creation in Some Ordered Alloys	475
III.4	S.U.Campisano Supersaturated Solid Solution in Ion Implanted Semiconductors	485
III.5	J.L.Regolini, T.Shibata, T.W.Sigmon, J.F.Gibbons Thin Film Reaction Induced by CW Scanned Laser and E -Beam	493
III.6	S.M.Metev Physico-Chemical Basis of Laser Lithography	503
	INDEX	519