

Table of Contents

Preface

Ion Beam and Ion-Assisted Deposition of Diamond-Like Carbon Films S. Aisenberg and F.M. Kimock	1
Plasma Deposition, Properties and Structure of Amorphous Hydrogenated Carbon Films P. Koidl, C. Wild, B. Dischler, J. Wagner and M. Ramsteiner	41
Structure and Physical Properties of Amorphous Hydrogenated Carbon (a-C:H) Films H. Tsai	71
The Microstructure of Carbon Thin Films D.C. Green, D.R. McKenzie and P.B. Lukins	103
Electronic Structure and Bonding of a-C:H J. Robertson	125
The Chemical Vapor Deposition of Diamond W.A. Yarbrough, A. Inspektor and R.F. Messier	151
Deposition of Amorphous Hydrogenated Carbon Films in Low and High Frequency Discharges Y. Catherine	175
Preparation and Properties of High Density, Hydrogen Free Hard Carbon Films with Direct Ion Beam or Arc Discharge Deposition J.-. Hirvonen, J. Koskinen, R. Lappalainen and A. Anttila	197
Ion Beam Deposited Diamondlike Carbon Films M.J. Mirtich	217
Carbon (sp^3) Film Growth from Mass Selected Ion Beams: Parametric Investigations and Subplantation Model Y. Lifshitz, S.R. Kasi and J.W. Rabalais	237
Substrate Sputter Erosion Effects during a-C:H Film Formation in a Glow Discharge S. Berg and B. Gelin	291
Novel Forms of Carbon from Poly(acrylonitrile): Films and Foams C.L. Renschler and A.P. Sylvester	301
Optical Properties and Local Atomic Bonding in Hydrogenated Amorphous Carbon and Silicon-Carbon Alloys F.W. Smith	323
Real Time Ellipsometry Characterization and Process Monitoring for Amorphous Carbon Deposition R.W. Collins	341
Raman Spectra of Diamondlike Amorphous Carbon Films M. Yoshikawa	365
Nuclear Magnetic Resonance Studies of Amorphous Hydrogenated Carbon M.A. Petrich	387
Diamondlike Thin Films and Their Properties N. Savvides	407
Radiation Effects in Amorphous Hydrogenated Carbon R. Kalish and M.E. Adel	427
Diamondlike Carbon (DLC): Its Fabrication, Analysis and Modification by Ion Beams D.C. Ingram	475
Microbeam Analysis Studies of a-C:H Films A.G. Fitzgerald and A.E. Henderson	495
Characterization of Hydrogenated, Amorphous Carbon Thin Films D.G. Thompson	515
Characterization of As-Prepared and Annealed Hydrogenated Carbon Films J. González-Hernández, B.S. Chao and D.A. Pawlik	543
Amorphous Hydrogenated Carbon (a-C:H)for Optical, Electrical and Mechanical Applications K. Enke	559

Diamondlike Carbon Applications in Infrared Optics and Microelectronics	
J.A. Woollam, B.N. De, S. Orzeszko, N.J. Ianno, P.G. Snyder, S.A. Alterovitz, J.J. Pouch, R.L.C. Wu and D.C. Ingram	577
Microstructure and Physical Properties of Metal-Containing Hydrogenated Carbon Films	
C.P. Klages and R. Memming	609
Plasma-Deposited Amorphous Hydrogenated Carbon Films and Their Tribological Properties	
K. Miyoshi, J.J. Pouch and S.A. Alterovitz	645
Investigation of the Mechanical Properties of 25 nm and 90 nm, Hard Carbon Films Residing on Al	
W.R. LaFontaine, T.W. Wu, P.S. Alexopoulos and D. Stone	657
Amorphous Carbon Films for Sensor Applications	
F. Olcaytug, K. Pirker, R. Schallauer, F. Kohl, G. Urban, A. Jachimowicz, O. Prohaska, W. Fallmann and K. Riedling	671
The Photoconduction of the a-Si:H on Carbon Graded a-SiC:H Structure	
T. Itoh and M. Nakatsugawa	689