17 July, 2023

**Alon HOFFMAN**

**LIST OF PUBLICATIONS (marked)**

**A) Ph.D. THESIS:**

1."The Influence of Alloying on O2 and NO Adsorption Processes on αCu-Al(100) Single Crystals by Means of Surface Electron Spectroscopies", Technion, Israel, 1987.

**(B)ORIGINAL PAPERS IN PROFESSIONAL JOURNALS.**

**(1)Published papers:**

**1987**

2."Auger and XP Spectra of Oxygen Adsorbed on Al(100) Relaxation Energies and the Nature of the Adsorbed Layer", **A. Hoffman**, Ts. Maniv and M. Folman, Surf. Sci., **182** (1987) 56-68.

3."AES and XPS Studies of NO Adsorption on Al(100) Single Crystals", **A. Hoffman**, Ts. Maniv and M. Folman, Surf, Sci., **183** (1987) 484-502.

**1988**

4."EELS of O2 and NO on Al(100), Experimental Results and Model", **A. Hoffman**, Ts. Maniv and M. Folman, Surf. Sci., **193** (1988) 513-528.

5."A Study of O2 Adsorption on αCu-Al(100) Surfaces of Different Al Concentration by Means of AES and XPS", **A. Hoffman**, Ts. Maniv and M. Folman, Surf.Sci., **193** (1988) 57-80.

6."A Study of NO Adsorption on αCu-Al(100) Surfaces of Different Al Concentration by Means of AES", **A. Hoffman**, Ts. Maniv and M. Folman, Surf.Sci., **207** (1988) 89-104.

7."Reaction of Bulk Hydrogen in Pd(111) with Adsorbed CN: A Possible Controlled Barrier for Hydrogen Diffusion", X. Guo, **A. Hoffman** and J.T. Yates Jr., Surf. Sci., 203 (1988) L672-L676.

**1989**

8."Low Temperature XPS and AES Studies of O2 Adsorption on Al(100)", A. Pashutsky**, A. Hoffman** and M. Folman, Surf.Sci., **208** (1989) L91-L97.

9."HCN Adsorption on the Pd(111) Surface: Surface Temperature and Coverage Dependence", X. Guo**, A. Hoffman** and J.T. Yates Jr., J. Phys. Chem., **93**, (1989) 4253-4258.

10."Adsorption Kinetics and Isotopic Equilibration of Oxygen Adsorbed on the Pd(111) Surface", X. Guo, **A. Hoffman** and J.T. Yates Jr., J. Chem. Phys., **90**, (1989) 5787-5792.

11."Electron Stimulated Desorption and Surface Species Conversion: the Observation of a Desorption Resonance for Atomic Oxygen on the Pd(111) Surface", **A. Hoffman**, X. Guo, J.T. Yates Jr., J.W. Gadzuk and C.W. Clark, J. Chem. Phys., **90** (1989) 5793-5800.

**1990**

12."A Comparative Study of the ArF Laser Ablation Induced Plasma Plume of Y, YO, Cu, CuO, YCuO and YBa2Cu3O7-X, by Fluorescence Spectroscopy", **A. Hoffman**, R. Manory, A. Bourdillon and G.L. Paul, Super. Sci. Technol. **3** (1990) 395-403.

13."The Effect of ArF Laser Ablation of YBaCuO on the Composition and Morphology of the Ablated Surface", **A. Hoffman**, Super. Sci. Technol. **3** (1990) 118-120.

14."Effect of Low Energy Argon Ion Irradiation on the Secondary Electron Emission Spectra of Highly Oriented Pyrolytic Graphite", **A. Hoffman**, P. Paterson and S. Prawer, Nucl. Instr. Meth., **B 51** (1990) 226-231.

15."Comparison of the Effect of Argon and Hydrogen Ion Bombardment of the Diamond (100) Surface as Studied by AES and EELS", **A. Hoffman**, P. Paterson and S. Prawer, Nucl. Instr. Meth., **B 52** (1990) 63-67.

16."Ion Beam Induced Conductivity in Chemical Vapor Deposited Diamond Films", S. Prawer, **A. Hoffman** and R. Kalish, Appl. Phys. Lett., **57** (1990) 2187-2189.

17."High Energy Secondary Electron Spectroscopy of Highly Oriented Pyrolytic Graphite", **A. Hoffman**, S. Prawer and G. Nyberg, J. Phys., Condensed Matter, **2** (1990) 8099-8105.

**1991**

18."Low Energy Electron Induced Processes: Desorption and Bond Scission of HCN(a) and CN(a) on Pd(111) as Studied by Thermal Desorption Spectroscopy", **A. Hoffman**, Vacuum, **42** (1991) 617-623.

19."Secondary Electron Emission Spectrum of Diamond", **A. Hoffman**, M. Folman and S. Prawer, Phys. Rev. B., **44** (1991) 4640-4643.

20."Secondary Electron Emission Spectroscopy - a Sensitive and Novel Method for the Characterization of the Near Surface Region of Diamond and Diamond Films", **A. Hoffman**, S. Prawer and M. Folman, App. Phys. Lett., **58** (1991) 361-363.

21.”Correlation between Crystalline Perfection and Film Purity for Chemical Vapor Deposited Diamond Thin Film Grown on Fused Quartz Substrates", S. Prawer, **A. Hoffman**, S. Stuart, R. Manory, P. Weiser, C. Lim and F. Ninio, J. Appl. Phys., **69** (1991) 6625-6631.

22."Effects of Oxygen Adsorption on the Low Energy Auger Spectrum of αCu-Al(100) Alloys", **A. Hoffman** and M. Folman, Vacuum, **42** (1991) 1133-1136.

**1992**

23. "Structural Transformation of Diamond Induced by 1K eV Argon Ion Irradiation as Studied by Auger and Secondary Electron Emission Spectroscopies and Total Electron Yield Measurements", **A. Hoffman**, S. Prawer and R. Kalish, Phys. Rev. B., **45** (1992) 12736-12745.

24. "Angle Resolved X-Ray Photoelectron Spectroscopy of Highly Oriented Pyrolitic Graphite", **A. Hoffman**, G. Nyberg and J. Liesegang, Phys. Rev. B., **45** (1992) 5679-5682.

25. "Secondary Electron Emission Spectroscopy and Total Electron Yield Measurements for the Assessment of Near Surface Damage in Diamond", **A. Hoffman**, S. Steven and R. Kalish, Diam. Rel. Mat., **1** (1992) 440-445.

26. "Inhibition of Hydrogen Plasma Erosion and Enhancement in Wear Resistance of Tungsten Implanted Glassy Carbon", **A. Hoffman**, P. Evans, D.D. Cohen and R. Clissold#, Appl. Phys. Lett., **60** (1992), 2077-2079.

27. "Compaction, Distribution and Chemical Bonding of Tungsten Implanted Glassy Carbon", **A. Hoffman**, P.J. Evans, D.D. Cohen and P.J.K. Paterson, J. Appl. Phys., **72** (1992) 5687-5694.

28."Carbon Diffusion in Uncoated and Titanium Nitride Coated Iron Substrates During Microwave Plasma Assisted Chemical Vapor Deposition of Diamond", P.S. Weiser\*, S. Prawer, **A. Hoffman**, R.R. Manory, P.J.K. Paterson and S. Stuart\*, J. Appl. Phys., **72** (1992) 4643-4647.

**1993**

29."Composition of Porous Silicon", R. Sabeit-Darani, D. Haneman, **A. Hoffman** and D.D. Cohen, J. Appl. Phys., **73** (1993) 2321-2325.

30."Structural and Chemical Bonding Investigation of Tungsten Implanted Glassy Carbon", D. McCulloch, **A. Hoffman**, P.J. Evans and S. Prawer, Nucl. Instr. Meth., **B 80/81** (1993) 1460-1463.

31."Ion Beam Induced Compaction in Glassy Carbon", D. McCulloch, **A. Hoffman** and S. Prawer, J. Appl. Phys., **74** (1993) 135-138.

32."Cross-Sectional Transmission Electron Microscopy Investigation of Xenon Irradiated Glassy Carbon", D. McCulloch, **A. Hoffman**, S. Prawer and D.K. Sood, Nucl. Inst. Meth., **B 80/81** (1993) 1480-1484.

33."Conductivity in Insulators Due to Implantation of Conductive Species", S. Prawer, **A. Hoffman**, M. Petravic and R. Kalish, J. Appl. Phys., **73** (1993) 3841-3845.

34."Diamond Film Growth on Ti-Implanted Glassy Carbon", M.A. Brewer, I.G. Brown, P.J. Evans and **A. Hoffman**, Appl. Phys. Lett., **63** (1993) 1631-1633.

35." Experimental Study of the Role of Plasmon Excitation on the Appearance of the Secondary Electron Emission Structure in Graphite", **A. Hoffman**, M. Elbaum and R. Brener, Phys. Rev. B., **48** (1993) 16078-16080.

36."Disintegration of C60 by High Energy Ion Irradiation", R. Kalish, A. Samoiloff, **A. Hoffman**, C. Uzan-Saguy, S. Prawer and D. McCullogh, Phys. Rev. B., **48** (1993) 18235-18238.

**1994**

37."Chemical Effects Induced by Hydrogen Plasma Exposure on Tungsten Implanted Glassy Carbon", **A. Hoffman** and P. Evans, J. Appl. Phys., **75** (1994) 2235-2239.

38."Fine Structure in the Secondary Electron Emission Spectrum as a Spectroscopic Tool for Carbon Surface Characterization", **A. Hoffman**, Diam. Rel. Mat., **3** (1994) 691-695.

39."Physico-Chemical Changes in a-C:H by MeV Ion Irradiation", M.J. Paterson, K.G. Orrman-Rossiter, S. Bhargara and **A. Hoffman**, J. Appl. Phys., **75** (1994) 792-796.

40."Possibility of Carbon Nitride Formation by Low Energy Nitrogen Implantation Into Graphite: In Situ Electron Spectroscopy Studies", **A. Hoffman**, I. Gouzman and R. Brener, Appl. Phys. Lett., **64** (1994) 845-847.

41."Investigation of Cobalt Behaviour During Diamond Deposition on Cemented Carbides", A.K. Mehlmann, S. Berger, A. Fayer, S.F. Dirnfeld, M. Bamberger, Y. Avigal, **A. Hoffman** and R. Porath, Diam. Related Mat., **3** (1994) 805-809.

42."CVD Diamond Films Grown on Titanium Nitride Coated and Uncoated Iron Substrates", P.S. Weiser, S. Prawer, **A. Hoffman**, P.J.K. Patterson and R.R. Manory, J. Appl. Phys., **76** (1994) 2164-2168.

43."Extended Fine Structure in the Secondary Electron Emission Spectra of Graphite and Glassy Carbon", **A. Hoffman**, R. Brener and C. Cytermann, Surface and Interface Analysis, **22** (1994) 590-593.

44."Irradiation Effects Induced by Reactive and Non-Reactive Low Energy Ion Irradiation of Graphite: an Electron Spectroscopy Study", I. Gouzman, R. Brener, C. Cytermann and **A. Hoffman**, Surface and Interface Analysis, **22** (1994) 524-527.

45."Structural Investigation of Xenon Ion Beam Irradiated Glassy Carbon", D.G. McCulloch, S. Prawer and **A. Hoffman**, Phys. Rev. B., **50** (1994) 5905-5917.

46."Formation of Carbon-Nitride Films by High Energy Nitrogen Ion Implantation into Glassy Carbon", **A. Hoffman**, H. Geller, I. Gouzman, C. Cytermann, R. Brener and M. Kenny, Surf. and Coat. Techn., **68/69** (1994), 616-620.

47."Carbon Nitride Formation by Low Energy Nitrogen Implantation into Graphite", I. Gouzmann, R. Brener and **A. Hoffman**, Thin Solid Films, **253** (1994) 90-94.

**1995**

48."Enhancement of Diamond CVD nucleation by Ultrasonic Abrasion of Substrate with a Mixture Metal and Diamond Particles", Y. Chakk, R. Brener and **A. Hoffman**, App. Phys. Lett., **66** (1995) 2819-1821.

49."Aspects of Diamond CVD Nucleation and Growth on Ordered and Disordered SP2 Bonded Carbon Substrates", **A. Hoffman**, A. Fayer, A. Laiktman and R. Brener, J. Appl. Phys., **77** (1995) 3126-3133.

50."Origin of the Extended Fine Structure in the High Energy Electron Excited Secondary Electron Emission Spectrum of Graphite", **A. Hoffman** and R. Brener, Phys. Rev. B., **51** (1995) 1817-1822.

51."Enchancement of Diamond CVD Nucleation on Quartz by High Dose Titanium Implantation", **A. Hoffman**, A. Laikhtman, Y. Avigal, R. Brener and P.J. Evans, Diam. Rel. Mat., **4** (1995) 765-769.

52."Nitrogen Implantation into Glassy Carbon as an Attempt to Grow a Carbon Nitride Thin Films", **A. Hoffman**, R. Brener, I. Gouzman, C. Cytermann, H. Geller, L. Levin and M. Kenny, Diam. Rel. Mat., **4** (1995) 292-296.

53."Nitridation of Diamond and Graphite Surfaces by Low Energy N+2 Ion Irradiation", I. Gouzman, R. Brener and **A. Hoffman**, Surf. Sci., **331** (1995) 283-288.

54."Ion Beam Modification of Buckinsterfullerene", S. Prawer, K.W. Nugent, S. Biggs, D.G. McCulloch, W.H. Leong, **A. Hoffman** and R. Kalish, Phys. Rev. B., **52** (1995) 841-849.

55."Electron Stimulated Desorption of Positive and Negative Oxygen Desorption from YBa2Cu3O7 Surfaces", **A. Hoffman**, S.D. Moss, P.J.K. Paterson, H. Whitfield, D. McCubbery and M. Petravic, J. App. Phys., 78(1995) 6858-6860.

56."Growth of Well Adhering Diamond Coatings on Sintered Tungsten", C.R. Shi, Y. Avigal, S. Dirnfeld, **A. Hoffman**, A. Fayer and R. Kalish, Diam. Rel. Mat., **4** (1995) 1079-1087.

57."The Reactivity and Bonding of Oxygen on the α-Cu-17% Al(100) Surface Studied by UPS", W. Shen, G.L. Nyberg and **A. Hoffman**, Surf. Sci., **334**(1-3)**,** (1995), 209-214.

58. “Deposition of Continuous and Well Adhering Diamond Films on Steel", A. Fayer, O. Glozman and **A. Hoffman**, Appl. Phys. Lett., 67(1995) 2299-2301.

59. “ Cooperative Effect of metal and Diamond Powder Abrasion on CVD Diamond Nucleation Processes”, Y. Chaak, R. Brener and **A. Hoffman**, Chemical Vapor Deposition 4(1995) 153-163.

**1996**

60."Ion Beam Induced Modification of Fullerene Films as Studied by Electron Energy Loss Spectroscopy", **A. Hoffman**, P.J.K. Paterson, S. Johnston and S. Prawer, Phys. Rev. B., 53 (1996), 1573-1578.

61."Annealing of Ion Beam Amorphised Diamond Surfaces Studied by in situ Electron Spectroscopy", **A. Hoffman**, K. Bobrov, B. Fisgeer, H. Schechter and M. Folman, Diam. Rel. Mat., 5 (1996) 76-82.

62.“Resonant-Like Desorption of Negative Ions by Core Level Excitation under Electron Bombardment”, M. Petravic, J.S. Williams and **A. Hoffman**, Phys. Rev. B., 53 (1995) R4257-R4259.

63."Surface and Subsurface 1 K eV Electron Stimulated Reduction of Sapphire Studied by Electron Spectroscopy", **A. Hoffman**, P. Paterson, App. Surf. Sci., 93 (1996) 301-308.

64."Mechanism of Diamond Formation on Substrates Abraded with a Mixture of Diamond and Metal Powders", Y. Chakk, R. Brener and **A. Hoffman**, Diam. Rel. Mat., 5 (1996) 286-291.

65."Electron Stimulated Desorption of Negative and Positive Hydrogen Ions from Hydrogenated Silicon Surfaces", **A. Hoffman** and M. Petravic, Phys. Rev. B., 53 (1996) 6996-6998.

66."An EELS study of the effect of 2KeV Ar ion irradiated C60 film", **A. Hoffman**, S. Prawer and P.J.K. Paterson, Surf. Sci., 352-354 (1996) 374-378.

67."Electron Stimulated Reduction of Sapphire Studied by Electron Energy Loss and Auger Spectroscopies", **A. Hoffman** and P. Paterson, Surf. Sci., 352-354 (1996) 993-997.

68."Effects of Deuterium Adsorption/Desorption on the State of Diamond: Surface Degradation and Stabilization of SP3 Bonded Carbon", **A. Hoffman**, K. Bobrov, B. Fisgeer, H. Schechter and M. Folman, Diam. Rel. Mat., 5 (1996) 977-983.

69."Suppression of CVD Diamond Growth by Ion Beam Annihilation of Nucleation and Growth Centers", Y. Chakk, R. Kalish and **A. Hoffman**, Diam. Rel. Mat., 5 (1996) 1074-1079.

70.“Thickness Measurements of Si(1-x)Gex Layers on Si Mesa Structures Using Raman Spectroscopy”, A. Wasserman, D.J. Roth, R. Beserman, **A. Hoffman** and K. Dettmer. Appl. Phys. Lett. 68 (1996) 3407-3409.

**1997**

71.“Thermal Programmed Desorption (TPD) of Deuterium from Di(111) Surface: Presence of Two. Adsorption States”, K. Bobrov, B. Faisgeer, H. Shechter, M. Folman and **A. Hoffman**, Diam. Rel. Mat., 6 (1997) 736-742

72.“[100] Textured Diamond Films for Tribological Applications”, Y. Avigal#, O. Glouzman\*, I. Etsion, G. Alperin and **A. Hoffman**, Diam. Rel. Mat., 6 (1997) 381- 385.

73.”Adhesion Improvement of Diamond Films on Steel Substrates Using Chromium Nitride Interlayer” O. Glouzman and **A. Hoffman**, Diam. Rel. Mat. 6 (1997) 796-801.

74.“The Chemical Nature of Carbon Precursor in Bias Enhanced Nucleation of CVD Diamond” I. Gouzman, B. Faisgeer, Y. Avigal, R. Kalish and **A. Hoffman,** Diam. Rel. Mat. 6 (1997) 526-531.

75.“Kinetics of the Initial Stages of CVD Diamond Growth on Non-Diamond Substrates: Surface Catalytic Effects and Homoepitaxy” Y. Chakk, M. Folman and **A.Hoffman**. Diam. Rel. Mat. 6 (1997) 681-686.

76.“Laser Power Effects on the Raman Spectrum of Isolated Diamond Chemical Vapor Deposition Particles”, A. Laikhtman and **A. Hoffman**. J. Appl. Phys. 82 (1997) 243-248.

77.“Friction and Wear of Nitrogen Implanted Glassy Carbon”. L. Rapoport, L. Levin, I. Lapsker, **A. Hoffman** and H. Geller. Surf. Coat. Tech., 92 (1997) 110-119.

78.“Optical and Photoemission Study of DLC Films Prepared with a Systematic Variation of the sp3:sp2 Composition”. Y. Lifshits, G.D. Lempert, E. Grossman, H.J. Scheibe, S. Voellmar, B. Schultrich, A. Breskin, R. Chechik, E. Shefer, D. Bacon, R. Kalish and **A. Hoffman**. Diam. Rel. Mat. 6 (1997) 687-693.

79.“A Study of the Initial Stages of Diamond Deposition on Ferrous Substrates Coated by a Nitrided Chromium Interlayer and on Polycrystalline Chromium Substrates”. O. Glozman and **A. Hoffman**. Diam. Rel. Mat. 6 (1997) 1847-1856.

**1998**

80.”Formation of the Precursor for Diamond Growth by in-situ Direct Current Glow Discharge Pretreatment”, I. Gouzman, I. Lior and **A. Hoffman**, App. Phys. Lett. 72 (3) (1998) 296-298.

81.“Heterogeneous Chemical Effects in the Deposition of CVD Diamond”. R.Shima, Y. Chakk, M. Folman and **A. Hoffman**. Diam. Rel. Mat. 7 (1998) 182-187.

82.”DC- Glow Discharge as a Key Step for the Bias Enhanced Nucleation by the HFCVD Method” I. Gouzman and **A. Hoffman**. Diam. Rel. Mat. 7 (1998) 209-214.

83. “Influence of Cr-N Interlayer Properties on the Initial Stages of CVD Diamond Growth on Steel substrates”. O. Gluzman, A. Berner, D. Shechtman and **A. Hoffman**. Diam. Rel. Mat. 7 (1998) 597-602.

84.”Deuterium Desorption Kinetics From Diamond(100) Single Crystal Surface Studied by TPD”. K. Bobrov, H. Shechter, M. Folman and **A. Hoffman**. Diam. Rel. Mat. 7 (1998) 170-176.

85. “On Nitrogen Incorporation during PE-CVD of diamond Films” T. Vandevelde, M. Nesladek, K. Meykens, C. Quaeyhaegens, L.M. Stals, I. Gouzman and **A. Hoffman**. Diam. Rel. Mat. 7 (1998) 152-157.

86.”Nano-size Diamond Formation Promoted by Direct Current Glow Discharge Process: Synchrotron Radiation and High Resolution Electron microscopy Studies” I. Gouzman, **A. Hoffman**, G. Comtet, L. Hellner and G. Dujardin, App. Phys. Lett, 72 (1998) 2517-2519.

87. “Surface NEXAFS of Diamond Films and Di(100) Hydrogenated Surfaces By H+ and H- Photodesorption”. **A. Hoffman**, M. Petravic, G. Comtet, H. Hellner and G. Dujardin, Appl. Phys, Lett. 73 (1998) 1152-1154.

88. ”Absolute Quantum Photoyield of Diamond Thin Films: Dependence on Surface Preparation and Stability Under Ambient Conditions”. A. Laikhtman, Y. Avigal, R. Kalish, **A. Hoffman**, A. Breskin, R. Chechik, E. Shefer and Y. Lifshitz. App. Phys. Lett. 73 (1998) 1433-1436.

**1999**

89. “Photon Stimulated Desorption of H+ and H- Ions from Diamond Surfaces: Evidence for Direct and Indirect Processes”, **A. Hoffman**, G. Comtet, M. Petravic, L. Hellner, G. Dujardin and A. Heurtel, Phys. Rev. B 59 (1999) 3203-3209.

90. “Electron Spectroscopic Study of Carbon-Nitrogen Bond Formation by Low Energy Nitrogen Ion Implantation of Graphite and Diamond Surfaces”. I. Gouzman, R. Brener and **A. Hoffman**. J. Vac. Sci. Technol. (A), 17(2), (1999), 411-420.

91. “Effect of Ti Ion Implantation and Thin Film Evaporation on the Formation of CVD Diamond on Si Substrates” R. Shima, M. Folman and **A. Hoffman**. J. Cryst. Growth, 198/199 (1999) 957-962.

92. “Cluster Model of DC-Glow Discharge Enhanced Diamond Nucleation” I. Efremenko, M. Sheintuch, I. Gouzman and **A. Hoffman**, J. Cryst. Growth, 198/199 (1999) 951-956.

93. “Study of Wear Behavior and Adhesion of Diamond Films Deposited on Steel Substrates by use of a Cr-N Interlayer” O. Glozman, G. Halperin, I. Etsion, A. Berner, D. Shechtman, G.H. Lee and **A. Hoffman**. Diam. Rel. Mat. 8 (1999) 859-864.

94. “ Surface Quality and Composition Dependence of Absolute Quantum Photoyield of CVD Diamond Films”. A. Laikhtman, Y. Avigal, R. Kalish, A. Breskin, R. Chechik, E. Shefer, Y. Lifshitz and **A. Hoffman**. Diam. Rel. Mat. 8 (1999) 725-731.

95. “Influence of substrate Nature on the DC-Glow Discharge Induced Nucleation of Diamond”. I. Gouzman, R. Shima-Edelstein, **A. Hoffman**, G. Comtet, L. Hellner, G. Dujardin and S. Roter. Diam. Rel. Mat. 8 (1999) 132-138.

96. “Surface Carbon Saturation as a Means of CVD Diamond Nucleation Enhancement” R. Shima-Edelstein, I. Gouzman, M. Folman, **A. Hoffman** and S. Roter. Diam. Rel. Mat. 8 (1999) 139-145.

97. “A New Method for Nucleation Enhancement of Diamond”. Y. Avigal and **A. Hoffman**. Diam. Rel. Mat. 8(1999)127-131.

98. “A Study of Deuterium Interaction with Diamond (110) Single Crystal Surface by TPD, EELS and LEED”. K. Bobrov, H. Shechter, M. Folman and **A. Hoffman**. Diam. Rel. Mat. 8(1999)705-711.

99. ”Sensitivity of Near Edge X-ray Adsorption Fine Structure Spectroscopy to Ion Beam Damage in Diamond Films”. A. Laiktman, I. Gouzman, **A. Hoffman**, G. Comtet, L. Hellner and G. Dujardin. J. Appl. Physics, 86 (1999), 4192-4198.

100. ”Role of Embedded Titanium Nano-Particles for Enhanced CVD Diamond Formation on Silicon”. R. Shima, Y. Chaak, M. Folman, **A. Hoffman**, F. Lai and S. Prawer, J. Vac. Sci. Technol. (B), 17(5), (1999), 1912.

**2000**

101. “Atomic Force Microscope Study of Amorphous silicon and Polysilicon Low-Pressure Chemical Vapor Deposited Implanted Layers”, R. Edrei, E. Shauly and **A. Hoffman**, J. Vac. Sci. Technol. (B), 18(1), (2000), 41-47.

102. “NEXAFS Spectroscopy of Crystalline and Ion Beam Irradiated Diamond Surfaces”, A. Laikhtman, I. Gouzman and **A. Hoffman**, Diam. Rel. Matt. 9 (2000) 1026-1031.

103. “Nano-Diamond Films Deposition by Direct Current Glow Discharge Assisted CVD”, A. Heiman, I. Gouzman, S.H. Christiansen, H. Strunk and **A. Hoffman**. Diam. Rel. Mat. 9 (2000) 866-871.

104. “Chemical Stability of Nano-Diamond Films Deposited the DC-Glow Discharge Process”, I Gouzman and **A. Hoffman,**  Diam. Rel. Mat. 9 (2000) 378-383.

105. “Influence of Ti, Fe and Cu Metal Nano – Particles on Diamond Formation by Chemical Vapor Deposition Methods”. R. Shima, Y. Chaak and **A. Hoffman**. Carbon, 38 (2000) 1839-1843.

106. “Molecular Dynamics Simulations of Thermal Stress at the (100)Diamond/substrate Interface: Effect of Film Continuity”, I. Rosenblum, D. Brandon, J. Adler and **A. Hoffman**, Phys. Rev. B. 62(4) 2920-2936 (2000).

107. “Absolute Quantum Photoyield of Ion Damaged Diamond Surfaces”, A. Laikhtman, R. Kalish, A. Breskin, R. Chechik and **A. Hoffman**. J. App. Phys. 88 (2000) 2451-2455.

108 “H+ Photodesorption Processes Induced by Inner Shell Excitation from Defective Hydrogenated Diamond Film Surfaces Studied by Synchrotron Radiation”, **A. Hoffman**, A. Laikhtman, G. Comtet, L. Hellner and G. Dujardin, Phys. Rev. B. 62 (2000) 8446-8451.

109. “Study of Chemical Vapor Deposition Diamond Film Evolution from a Nano-diamond Precursor by C13 Isotopic Labeling and Ion Implantation ”, I. Gouzman, V. Richter, S. Roter and **A. Hoffman**. J. Vac. Sci. Technol. (A), 18(6), (2000), 2997-3003.

‏**2001**

110. “Evolution and Properties of Nano-Diamond Films Deposited by Direct Current Glow Discharge ” A. Heiman, I. Gouzman, S. Christiansen, H. Strunk, G. Comtet, L. Hellner, G. Dujardin, R. Edrei and **A. Hoffman**. J. Appl. Phys., 89 (2001) 2622-2630.

111. “The Influence of Surface Roughness and Chemical Modification on DC- Glow Discharge enhanced Nano-Diamond Formation”, R. Shima, I. Gouzman and **A. Hoffman**, Carbon 39 (2001) 337-342.

112. “Dissociative Electron Attachment and Dipolar Dissociation of H- Electron Stimulated Desorption From Hydrogenated Diamond Films” A. Hoffman, S. Ustaze, M. Hadj Hamou, M.N. Hedhili, J-P. Guillotin, M. Tronc, Y. Le Coat, D. Teillet Billy, A. Laiktman and R. Azria. Phys. Rev. B. 63 (2001) 045401.

113.“ Mechanism of Nano-Diamond Film Formation by Stress Relaxation on a Preferentially Oriented Vertical Basal Plane Graphitic Precursor”, **A. Hoffman**, A. Heiman, and S. Christiansen. J. App. Phys. 89 (2001) 5769-5773.

114. “Effect of Moderate Heating on the Negative Electron Affinity and Photoyield of Air-Exposed H- Terminated CVD Diamond”. G. Piantanida, A. Breskin, R. Chechik, O. Katz, A. Laikhtman, **A. Hoffman** and C. Caluzza, J. Appl. Phys. 89 (2001) 8259-8264.

115. “Temperature Induced Ion Kinetic Energy Relaxation and Yield of H- Dissociative Electron Attachment from Hydrogenated Diamond Films” **A. Hoffman**, S. Ustaze, M. Hadj Hamou, M.N. Hedhili, J-P. Guillotin, , Y. Le Coat, R. Azria and M.Tronc. Phys. Rev. B. 63 (2001) 245404.

116. ”Mechanisms and Dynamics of Electron Stimulated Desorption of D- from Deuterated Diamond Diamond Surfaces: Surface Versus Sub-Surface Stimulated Desorption” S. Ustaze, M. Hadj Hamou, M.N. Hedhili, J-P. Guillotin, , Y. Le Coat, R. Azria, M.Tronc and **A. Hoffman**. Phys. Rev. B. 63 (2001) 245417.

<http://prb.aps.org/pdf/PRB/v63/i24/e245417>

117. “Bulk Diffusion of Microwave Plasma Activated Deuterium Bulk Diffusion into Undoped Natural Diamond” A. Laikhtman, C. Cytermann, and A. Hoffman, Appl. Phys, Lett. (2001) 79(7) 1115-1117.

**2002**

118. “Enhancement of Secondary Electron Emission by Annealing and Hydrogen Plasma Treatment of Ion-Damaged Diamond Film”, A. Laikhtman and A. Hoffman, J. App. Phys. 91 (2002) 2481-2486.

119. “ Influence of Implantation and Annealing on the Surface Topography of Amorphous and Poly-Silicon Thin Films”, R. Edrei, E.N. Shauly and **A. Hoffman**., J. Vac. Sci. Tech. (A), 20(2), (2002), 344-349.

120. “The Effect of Deposition Process Parameters and Post Deposition Treatments on the Poly-and Amorphous- Silicon Morphology”, R. Edrei, E.N. Shauly, Y. Rozin and **A. Hoffman**. App. Surf. Sci., 188 (2002) 539-544.

121. “Stimulated Desorption of D- from Diamond: Surfaces Versus Sub-Surface Processes via Resonance Dissociative Electron Attachment” **A. Hoffman**, A. Laikhtman, Y. Le Coat and R. Azria, Diam. Rel. Mat. 11(3-6) (2002) 867-871.

122. “Preparation and Properties of Sub- Micron and Free Standing Diamond Membranes”, Sh. Michaelson, R. Akhvalediani and **A. Hoffman**. Diam. Rel. Mat. 11(3-6) (2002) 721-725.

123. “Synchrotron Radiation Study of Surface Versus Sub-Surface Deuterium in Diamond Films Produced by Exposure to Deuterium Activated by Hot Filament – High Vacuum and Ex-situ Micro-wave Plasma” , A. Laikhtman and **A. Hoffman,**  Diam Rel. Mat. 11(3-6) (2002) 371-377.

124. “Microstructure and Stress in nano-Crystalline Diamond Films Deposited by DC Glow Discharge CVD”, A. Heiman, E. Lakin, E. Zolotoyabko and **A. Hoffman**, Diam. Rel. Mat. 11(3-6) (2002) 601-607.

125. “ Nanometer Rough, Sub-Micron Thick, and Continuous Diamond CVD Films Promoted by a Synergetic Ultrasonic Effect”, R. Akhvalediani, I. Lior, Sh. Michaelson and **A. Hoffman**, Diam. Rel. Mat. 11 (2002) 545-549

126. “Decay of Secondary Electron Emission and Charging of Hydrogenated and Hydrogen Free Diamond Film Surfaces Induced by Low Energy Electrons”. **A.Hoffman**, A. Laikhtman, S.Ustaze, M. Hadj Hamou, M.N. Hedhili, J-P. Guillotin and R. Azria. J. App. Phys. 91 (2002) 4726-4732.

127. “Microstructure and Phase Composition Evolution of Nano-Crystalline Carbon Films: Dependence on Deposition Temperature” A. Hoffman, A. Heiman, H.P. Strunk and S. H. Christiansen, J. App. Phys, 91 (2002) 3336-3344.

128. “Molecular Oxygen Adsorption and Desorption from Single Crystal Diamond (111) and (110) Surfaces”. K. Bobrov, H. Shechter , A.Hoffman and M. Folman. Appl. Surf. Sci. 196 (2002) 173-180.

129. “ Mechanism of Low energy Electron Stimulated Desorption of O- from Hydrogenated and Hydrogen Free Diamond Surfaces Exposed to Activated Oxygen”, A. Laikhtman, Y. Le coat, M. H. Hamou, R. Azria and A. Hoffman. J. Chem. Phys. 117 (2002) 346-352.

130. “The Mechanism of Diamond Nucleation from Energetic Species”, Y. Lifshitz, Th. Kohler, Th. Frauenheim, I. Gouzman, **A. Hoffman**, R.Q. Zhang, X.T. Zhou and S.T. Lee, Science 297(2002) 1531-1533.

131. “Interaction of Thermally Activated and Molecular Oxygen with Hydrogenated and Hydrogen-Free Diamond Surfaces: Chemical Reactivity and Electron Emission Properties”, A. Laikhtman and **A. Hoffman**, Phys. Stat. Solid. (A) 193, 3, 552-562 (2002).

132. “Surface versus Sub-surface D- Electron Stimulated Desorption From Diamond Surfaces”, **A. Hoffman**, Phys. Stat. Solid. (A) 193, 3, 494-501 (2002).

133. “ Resonant Electron Injection as an atomic Scale Tool for surface Studies” , K. Bobrov, L. Soukiassian, A.J. Mayne, G. Dujardin and **A. Hoffman**, Phys. Rev. B., (2002), 66, 195403.

134. “Ion Induced Electron Emission from Undoped Sub-micron Thick diamond Films” , Sh. Michaelson, V. Richter, R. Kalish, R. Ahvaldiani, **A. Hoffman** and E. Cheifetz, Thin Solid Films, 420-421 (2002) 185-189.

135. “Ion Induced Electron Emission from Diamond”, R. Kalish, V. Richter#, B. Fizgeer#, N. Koenigsfeld, Y. Avigal, Sh. Michaelson, **A. Hoffman**, E. Cheifetz and D. Hoxley, J. Wide Bandgap Materials (2002), 9(1), 43-54.

**2003**

136. “Interaction of Thermally Activated and Molecular Oxygen with Hydrogenated Polycrystalline Diamond Surfaces Studied by Synchrotron Radiation Techniques”, A. Laikhtman and **A. Hoffman**, Surf. Sci. 522(1-3), L1-L8 (2003).

137. “Atomic Scale Desorption of Hydrogen from Hydrogenated Diamond Surfaces using the STM”, K. Bobrov, A.J. Mayne, **A. Hoffman** and G. Dujardin, Surf. Sci., (2003), 528(1-3), 138-143.

138. “Clarification of Oxygen Bonding on Diamond Surfaces by low Energy Electron Stimulated Desorption and High Resolution Electron Energy Loss Spectroscopy”, A. Laikhtman, A. Lafasse, Y. Le Coat, R. Azria and **A. Hoffman**. J. Chem. Phys. (2003) 119(3) 1794-1799.

139. “ Improved Field Emission at Electric Discharge Conditioned sites on diamond Surfaces due to Formation of Carbon Nanotubes” N. Koenigsfeld, R. Kalish and **A. Hoffman**, Appl. Phys. Lett, (2003) 82(26) 4687-4689.

140. “Argon Ion Stimulated Conversion Between CFx (x=0-3) Chemical States and fluorine Depletion in Fluorocarbon films Studied by X-Ray Photoelectron Spectroscopy”, S.W. Tong, M.K. Fung, C.S. Lee, Y. Lifshitz, S.T. Lee and **A. Hoffman**, App. Surf. Sci. (2003), 220(1-4), 19-25.

141. “ Hydrogen Content and Density in nanocrystalline films of a Predominant Diamond Character” in the Formation of Nano-Crystalline Diamond in Carbon Films Grown by DC Glow Discharge CVD”. **A. Hoffman**, A. Heiman, R. Akhvlediani, E. Lakin, E. Zolotoyabko and C. Cytermann. J. Appl. Phys., 94(7) 4589-4595 (2003).

142. “Role of Electronic Band Structure and Resonances on Electron Reflectivity and Vibrational Excitation Functions: The Case of the Hydrogenated Diamond”, A. Lafosse, D.Teillet Billy, J.P.Guillotin, Y. Le Coat, R. Azria, A. Laikhtman and **A. Hoffman**. Phys. Rev. B. 68, 235421 (2003).

143. “Atomic Scale Visualization and Surface Electron Structure of the Hydrogenated Diamond C(100)-(2x1) Surface” , K. Bobrov, A. Mayne, G. Comtet, G. Dujardin, L. Hellner and **A. Hoffman**, Phys. Rev. B. 68, 195416 (2003).

**2004**

144. “Effect of Incident Electron Current on Surface Charging and Electron emission of Hydrogenated Diamond Films Induced by Low Energy Electron Irradiation”. **A. Hoffman**, R. Akhvlediani, A. Laikhtman A. Lafosse, J.-P. Guillotin and R. Azria. J. App. Phys, 95(4), 1895-1899 (2004).

145. “Silicon Nano Asperities: Morphological Evolution and Electrical Properties of Double Polysilicon Inter Layers”, R. Edrei, E.N. Shauly, Y. Roizin, V.V. Gridin, R. Akhvlediani and **A. Hoffman**, J. Electr. Mat., (2004), 33(7), 819-825.

146. “Fretting Wear of Thin Diamon Film Deposited on Steel Substrates” , L. Kreins, G. Halperin, I. Etsion, **A. Hoffman** and R. Akhvlediani, Diam. Rel. Mat., (2004), 13(9), 1731-1739.

147. “Interaction of Water Vapor with Bare and Hydrogenated Diamond Film Surfaces” ,A. Laikhtman, A. Lafosse, Y. Le Coat, R. Azria and **A. Hoffman**. Surf. Sci. (2004) 551(1-2), 99-105.

148.”Visualization of the Mechanism of Diamond Nucleation and Nano-diamond Film Growth” **A. Hoffman**, X.M. Meng, S.T. Lee, R. Akhveldiany and Y. Lifshitz. Phys. Rev. Lett. (2004) 93(5) 056101.

149. “ Initial Stages of surface and Sub-surface Oxidation of Al(100) Studied by Photoelectron Spectroscopy and Low Energy Ion Scattering”, T. Kravchuk, R. Akhvlediani, V.V. Gridin and **A. Hoffman**. Surf. Sci., (2004) 562(1-3) 83-91.

150. “Molecular Oxygen Adsorption on Partially Hydrogenated Diamond (100) Surfaces”, K. Bobrov, G. Comtet, L. Hellner, G. Dujardin and **A. Hoffman**. App. Phys, Lett. (2004), 85(2), 296-298.

151. “Stimulated low Earth Orbit Environment Interaction with different Types of Polyethylene”, R. Intrater, G. Lempert, I. Gouzman, Y. Cohen, M.D. Rein, R.L. Khalfin and **A. Hoffman**, High Performance Polymers (2004), 16 (2) 249-266.

152. “Evolution of Surface Topography of as-Grown Si Films near Amorphous to Polycrystalline Transition”, R. Edrei, R. Shima, V.V. Gridin, Y. Rozin, W.D. Kaplan and **A. Hoffman**, J. Electroch. Soc., 151(12) G904-G909 (2004).

153.“[Escape depth of secondary electrons induced by ion irradiation of submicron diamond membranes](http://wos15.isiknowledge.com:80/?SID=4eeKg6m8O4di6M8o5f@&Func=Abstract&doc=1/1)*” ,* V*.* Richter, B. Fizgeer, Sh. Michaelson, **A. Hoffman**, R. Kalish, J. App. Phys., (2004), 96 (10), 5824-5829.

**2005**

154*.* “Hydrogen in nano-diamond films”Sh. Michaelson and **A. Hoffman**, Diam. Rel. Mat., 14 (3-7) 470-475 (2005).

155. **“**Absolute quantum photo-yield of nanometer thick diamond films at their initial stages of formation”Sh. Michaelson\*, R. Akhvlediani, O. Ternyak and **A. Hoffman**, A. Breskin and R. Chechik, Diam. Rel. Mat., 14 (3-7) 546-551 (2005).

156. “Role of Electronic Band Structure and Resonances on electron Scattering. The Case of the Hydrogenated Polycrystalline Diamond”, A. Lafosse, D. Caceres, M. Bertin, **A. Hoffman**, and R. Azria, Surf. Sci., 587 (2005) 134-141.

157. “He+ Scattering on Clean and Oxygen Covered Al(111)”, T. Kravchuk, V. A. Esaulov, **A. Hoffman** and R.C. Monreal, Nucl. Inst. Meth. Phys. Res. B 232 (2005) 27-31.

158. “Nitrogen Diffusion and Accumulation at the Si/SiO2 Interface in SiO2/Si3N4/SiO2 Structures for Nonvolatile Semiconductor Memories”, M. Saraf, R. Edrei, R. Shima, Y. Rozin and **A. Hoffman**, J. Vac. Sci. Tech. (B), 23(4), (2005), 1558-1561.

159. “Low Energy Electron Trapping in Hydrogenated Diamond Surfaces by Resonance Electron Attachment”, R. Akhvlediani and **A. Hoffman**. Diam. Rel. Mat., 14 (2005) 646-650.

160. “Study on diamond Films with Ultra High Nucleation Density Deposited onto Alumina, Sapphire and Quartz”, O. Ternyak, R. Akvlediani and **A. Hoffman**, Diam Rel. Mat., 14 (2005) 323-327.

161. “Ultrathin Continuous Undoped Diamond Films: Investigation of Nanoscale Conduction Prroperties” , O. Ternyak, A.A. Cimmino, S. Prawer and **A. Hoffman**, Diam. Rel. Mat. 14 (2005) 272-278.

162. “Surface and Sub-surface Oxidation of Alpha Cu-Al(17 at.%)(100) Studied by X-ray Photo- electron Spectroscopy and Low Energy He+ Scattering Spectroscopy”, T. Kravchuk, R. Akhvlediani and **A. Hoffman**, Nucl. Inst. Meth. Phys. Res. B 230 (2005) 413-418.

163. “Evolution and Properties of Adherent Diamond Films with Ultrahigh Nucleation Density Deposited onto Alumina”, O. Ternyak, R. Akhvlediani and **A. Hoffman**. Diam. Rel. Mat., 14 (2005) 144-154.

164. “Electron Trapping and Detrapping in Ion-Beam-Damaged Diamond Surfaces” **A. Hoffman**, I. Andrienko, D.N. Jamieson and S. Prawer, App. Phys. Lett., 86 (2005), 044103.

165. “Field Electron Emission from Undoped, Continuous, Sub-micron Thick, Diamond Films”, O.Tarnyak, R. Akhvlediani, **A. Hoffman**, W.K. Wong, S.T. Lee, Y. Lifshitz, J. App. Phys., 98(12), 123522/1 (2005).

**2006.**

166. “Visualization of Polyethylene Fibers Surface Restructuring Induced by Oxygen Plasma” Nano-structures in RF Oxygen Plasma”, R. Intrater, **A. Hoffman**, G. Lempert, I. Gouzman, Y. Cohen and E. Grossman. J. Mat. Sci., 41(5) 1653-1657, 2006.

167. “Hydrogen Bonding, Content and Thermal Stability in Nano-diamond Films”, Sh. Michaelson and **A. Hoffman**, Diam. Rel. Mat. 15 (2006) 486-497.

168. “Field Emission Measurements from Carbon Films of a Predominant Nano-crystalline Diamond Character Grown by Energetic Species”, Z. Shpilman, Sh. Michaelson, R. Kalish and **A. Hoffman** Diam. Rel. Mat., 15(2006) 846-849.

169. “Enhancement of Electron Emission from Near-coalescent Nanometer Thick Continuous Diamond Films”, O. Ternyak, Sh. Michaelson, R. Akhvlediani, **A. Hoffman**, Diam. Rel. Mat. , 15 (2006) 850-853.

170. “Oxide Free InSb(100) Surfaces by Molecular Hydrogen Cleaning”, R. Tessler, R. Akhvledianin, R. Edrei, O. Klin, S. Greenberg, E. Weiss, C. Saguy and **A. Hoffman**, App. Phys. Lett., 88 (2006), 031918.

171. “Enhanced Reactivity and Selectivity in oxidation of Cu(100) and Alpha Cu-Al(5 at.%) (100) surfaces studied by Electron and Ion Spectroscopies”, T. Kravchuk, R. Akhvlediani and **A. Hoffman**, Surf. Sci., 600 (2006) 1252-1259

172. “Sub-Band Gap Photo Enhancement of Electron Emission and Discharging of Hydrogenated and Hydrogen Free Diamond Surfaces” , **A. Hoffman**, A. Lafosse and R. Azria, Phys. Rev. B., 73(8) 085423, 2006.

173. “Hydrogen Bonding in Diamond: A Computational Study”, O. Ofer, J. Adler and **A. Hoffman**, Int. J. Mod. Phys. C, 17(7) 2006, 959-966.

174. “Discharging, Enhancement and Control of Electron Emission of Hydrogen Free Diamond Surfaces by Sub Band Gap Light Illumination” , **A.Hoffman**, A. Lafosse and R. Azria, App. Phys. Lett. 88 (2006) 172111.

175. “Density of States Effects on Surface and Lattice Vibrational Modes In Hydrogenated Polycrystalline Diamond”, A. Lafosse, **A. Hoffman**, M. Bertin, D. Teillet-Billy and R. Azria, Phys. Rev. B. 73, 195308 (2006).

176. “Effect of Imaging Techniques on the Observed Surface Morphology of Oxygen plasma Etched Polyethylene Fibers”, R. Intrater\*, **A. Hoffman**, G. Lempert, I. Gouzman and E. Grossman, Polymer Degrad. and Stability, 91 (2006) 1948-1953.

177. “Chemical Bonding and Inter-diffusion in Scaled Down SiO2/Si3N4/SiO2 Stacks with Top Oxide Formed by Thermal Oxidation”. M. Saraf, R. Edrei, R. Akhvlediani, Y. Roizin, R. Shima, and **A. Hoffman**. J. Vac. Sci. Tech. (B), 24(4), (2006), 1716-1723.

178. “Formation Mechanism of Nano-diamond Films from Energetic Species: from Experiment to Theory”, **A. Hoffman,** I. Gouzman and Sh. Michaelson, Thin Sol. Films, 515 (2006), 14-26.

179. “Hydrogen Incorporation Processes in Nano-diamond Films Studied by Isotopic Induced Modification of the Raman Spectra ”. Sh. Michaelson, Y. Lifshitz, O.Tarnyak and **A. Hoffman**, App. Phys. Lett. 89 (2006), 131918.

180. “Site Specific Effects in Alloy Surface Reactivity Probed by Li Ions”, T. Kravchuk, Yu. Bandourine, **A. Hoffman** and V.A. Esaulov. Surf. Sci., 600 (2006) L265-L268.

181. “SiO2/Si3N4/Al2O3 Stacks for Scaled-down Memory Devices: Effects of Interface and Thermal Annealing”, M. Lisiansky, A. Heiman, M. Kovler, A. Fenigstein, Y. Roizin, I, Levin, A. Gladkikh, M. Oksman, R. Edrei, A. Hoffman, Y. Shnieder and T. Claasen, App. Phys. Lett. 89, 153506 (2006).

182. “Determination of Vibrational Modes in Electron Energy Loss Spectroscopy of Polycrystalline Diamond Surfaces by Isotopic Exchange", Sh. Michaelson, Y. Lifshitz and **A.** **Hoffman**, Appl. Phys. Lett. , 89, 223112 (2006).

183. “Enhanced Electron Field Emission from Preferentially Oriented Graphitic Films”, Z. Shpilman, Sh. Michaelson, B. Philosoph, R. Kalish, and **A. Hoffman**, App. Phys. Lett. **89**, 252114 (2006).

**2007**

184. “Oxygen Induced Segregation of Aluminum to Cu-Al(100) Alloy Surfaces Studied by Low Energy Ion Scattering and X-Ray Photoelectron Spectroscopy”, T. Kravchuk and **A. Hoffman**, Surf. Sci., 601(2007) 87-94.

185. . **“**Correlation Between Diamond Grain Size and Hydrogen Retention in Diamond Films Studied by Scanning Electron Microscopy and Secondary Ion Mass Spectroscopy”.Sh. Michaelson\*, O. Ternyak\*, Y. Lifshitz and **A. Hoffman**, App. Phys. Lett., 90, 031914 (2007).

186. “Desorption of InSb(001) Native Oxide Induced by Molecular Hydrogen Annealing”, R. Tessler, R. Akhvlediani, R. Edrei, O. Klin, S. Greenberg, E. Weiss, C. Saguy and **A. Hoffman**. J. of Appl. Phys., 101, 024513 (2007).

187. “A Vibrational Study of Hydrogen Bonding to Ion Irradiated Diamond Surfaces”. M. Bertin, A. Lafosse, and R. Azria. S. Michaelson, O. Tarniak, and **A. Hoffman**, App. Phys. Lett., 90, 061918 (2007).

188. “Ion-induced Electron Emission (IIEE) from Undoped and B-doped Diamond Films Induced by 1-10 KeV H+ and Ar+” O. Ternyak\*, E. Cheifetz, S. Shchemelinin, H. Zhang, R. Chechik, A. Breskin and A Hoffman. Diam. Rel. Mat., 16 (2007) 861-866.

189. “High Resolution Electron Energy Loss Spectroscopy of Hydrogenated Polycrystalline Diamond: Assignment of Peaks Through Modifications Induced by Isotopic Exchange”, S. Michaelson\*, Y. Lifshitz and **A. Hoffman**, Diam. Rel. Mat., 16 (2007) 855-860.

190. “Hydrogen Incorporation in Diamond Films”, Sh. Michaelson\*, Y. Lifshitz, O. Ternyak\*, R. Akhvlediani#, and **A Hoffman**, Diam. Rel. Mat., 16 (2007) 845-850.

191. “Nano-diamond Growth on Diamond by Energetic Plasma Bombardment”, I. Gouzman\*, O. Fuchs\*, Y. Lifshitz, S. Michaelson\* and **A. Hoffman**. Diam. Rel. Mat., 16 (2007) 762-766.

192. “Surface Photo-voltage Effect of Hydrogenated Diamond Subjected to Low Energy Electron Irradiation”. Diam. Rel. Mat., 16 (2007) 851-854.

193. “Hydrogen Concentration and Bonding in Nano-diamond Films of Varying Grain Sizes Grown by Different Chemical Vapor Deposition Methods”, Sh. Michaelson, O. Ternyak, R. Akhvlediani, O.A. Williams, D. Gruen and **A. Hoffman**. Phys. Stat. Sol. (A), 204, 9, 2860-2867 (2007).

194. “Effect of Hydrogenation, Low Energy Ion Irradiation and Annealing on Hydrogen Bonding to Polycrystalline Diamond Surface Studied by High Resolution Electron Energy Loss Spectroscopy”, Sh. Michaelson, O. Ternyak, R. Akhvlediani, A. Lafosse, M. Bertin, R. Azria, and **A. Hoffman**. Phys. Stat. Sol. (A), 204, 9, 2909-2914 (2007).

195. “The Impact of gas Isotopic Exchange on the Growth Rate and Hydrogen (Deuterium) Bonding within CVD Diamond Films”, O. Ternyak, Sh. Michaelson, L. Tkach, R, Akhvlediani and **A. Hoffman**. Phys. Stat. Sol. (A), 204, 9, 2839-2846 (2007).

196. “Low Thermal Budget SiO2/Si3N4/SiO2 Stacks for Advanced SONOS Memories”, M. Saraf, R. Akhvlediani, R. Edrei, R. Shima Edelstein, Y. Roizin and A. Hoffman. J. Appl. Physics, 102(5), 054512, (2007).

197. “Hydrogen and Thermal Deoxidiatons of InSb and GaSb Substrates for Molecular Beam Epitaxial Growth”, E. Weiss, O. Klin, R. Akhvlediani, S. Grossman, S. Greenberg, P.C. Klipstein, R. Tessler, R. Edrei and **A. Hoffman,** J. Vac. Sci. Technol (A), 25(4), 736-745 (2007)**.**

198. “Hydrogen bonding at grain surfaces and boundaries of nanodiamond films detected by high resolution electron energy loss spectroscopy”, Sh. Michaelson, O. Ternyak, **A. Hoffman,**O. A. Williams, D. M. Gruen, App. Phys. Lett., 91(10), 103104 (2007).

199. “Surface roughness evolution and growth mechanism of carbon films from hyperthermal species”, Y. Lifshitz, R. Edrei, **A. Hoffman**, E. Grossman, G.D. Lempert, J. Berthold, B. Schultrich and H.U. Jäger, Diam. Rel. Mat., 16 (10),(2007), 1771-1776.

200. “Hydrogen concentration and bonding configuration in polycrystalline diamond films: from micro- to nano-metric grain size" , S. Michaelson, O. Ternyak, R. Akhvlediani, **A. Hoffman**, A. Lafosse, R. Azria, O Williams, and D. Gruen. Journ. App. Phys., 102, 113516 (2007).

201. “Oxidation of diamond surfaces by atomic oxygen: high resolution electron energy loss spectroscopy studies”. Z. Shpilman, I. Gouzman, E. Grossman, R. Akhvlediani, and **A. Hoffman**, Journ. App. Phys., 102, 114914 (2007).

**2008**

202. “Ambient contamination of poly-crystalline diamond surfaces studied by high-resolution electron energy loss spectroscopy and X-ray photoelectron spectroscopy”, Sh. Michaelson and A. Hoffman, Diam. Rel. Mat., 17 (2008) 920-924.

203. “Surface defects induced by in-situ annealing of hydrogenated polycrystalline diamond studied by high resolution electron energy loss spectroscopy”, A. Laffose, M. Bertin, Sh. Michaelson, R. Azria, R. Akhvelediani and **A. Hoffman**, Diam. Rel. Mat., 17 (2008) 949-953.

204.”Bias enhanced diamond nucleation onto 3C-SiC(100) surfaces studied by high resolution X-ray photoelectron and high resolution electron energy loss spectroscopy”, J-C. Arnault, S. Saada, Sh. Michaelson, N.K. Hangaly, R. Akhvelediani and **A. Hoffman**, Diam. Rel. Mat., 17 (2008) 377-382.

205.“The Impact of Diamond Grain Size on Hydrogen Concentration, Bonding Configuration and electron emission properties of polycrystalline diamond films”, Sh. Michaelson, O. Tarnyak, R. Akhvlediani and **A. Hoffman**, Journal of Chemical Vapor Deposition, (14) 196-212, 2008.

206.”Surface Science Contribution to the BEN Control on Si(100) and 3C-SiC(100): Towards Ultra Nano-Crystalline Diamond Films”, J.C. Arnault, S. Saada, S. Delclos, L. Rocha, L. Intiso, R. Polini, S. Michaelson, **A. Hoffman** and P. Bergonzo. Journal of Chemical Vapor Deposition, (14) 187-195, 2008.

207.”RF Plasma System as an Atomic Oxygen Exposure Facility” Z. Shpilman, I. Gouzman, G. Lempert, **A. Hoffman** and E. Grossman, Review of Scientific Instruments, 79,025106 (2008).

208. “Growth, Electronic Properties and Applicatios of Nano-Diamond”, O.A. Williams, M. Nesladek, M. Daenen, S. Michaelson, **A. Hoffman**, E. Osawa, K. Haenen, R.B. Jackman and D.M. Gruen. Diam. Rel. Mat. , 17(2008) 1080-1088.

209. “Study of single silicon quantum dots' band-gap and single-electron charging energies by room temperature scanning tunneling microscopy”, Bashir Zaknoon, Cecile Saguy, Rachel Edrei, Rajesh A. Rao, Ramachandran Muralidhar, Ko-Min Chang, **A. Hoffman**Gad Bahir, Nano-Lettters, 8(6) 2008, 1689-1694.

210. "Hydrogen Plasma and Atomic Oxygen Treatments of Diamond: Chemical vs. Morphological Effects”, Zeev Shpilman, Irina Gouzman, Eitan Grossman, Rozalia Akhvlediani, and **A. Hoffman**, Appl. Phys Lett. (2008), 92, 234103.

211. “Hydrogen in nano-diamond films: experimental and computational studies”, Sh. Michaelson, R. Akhvlediani and **A. Hoffman,**A. Silverman and J. Adler; Phys. Stat. Sol. A (205) 9, 2099-2107 (2008).

212.“Chemical and Morphological Aspects of Diamond Films Oxidation and Regeneration”,Z. Shpilman, I. Gouzman, E. Grossman, R. Akhvlediani and **A. Hoffman;** Phys. Stat. Sol. A (205)9, 2130-2135 (2008).

213. “Nano size effects in the high resolution electron energy loss spectra and excitation function of hydrogenated diamond films” **A. Hoffman**, A. Lafosse, Sh. Michaelson, M. Bertin,and R. Azria, Surf. Science 602(2008) 3026-3032.

214.“Hydrogenation and thermal stability of nano- and microcrystalline diamond films studied by vibrational electron spectroscopy”, Sh. Michaelson, R. Akhvlediani and **A. Hoffman,** Journal of Applied Physics , 104, 083527 (2008).

**2009**

215. “Surface Functionalization by Low-energy Electron Processing of Molecular Ices”, A. lafosse, M. Bertin, **A. Hoffman** and R. Azria, Surf. Science (Special issue for prof Ertl), 603(10-12) (2009) 1873-1877.

216. “Comparison of Diamond Bias Enhanced Nucleation on Ir and 3C-SiC: A High Resolution Electron Energy Loss Spectroscopy study”, **A. Hoffman**, Sh. Michaelson, R. Akhvlediani, N.K. Hangaly, S. Gsell, R. Brescia, M. Schreck, B. Stritzker, J-C. Arnault and S. Saada. Phys. Stat. Sol. A 1972-1977, 206, 9(2009).

217. “Planarization of natural single crystal diamond polishing lines by microwave hydrogen plasma”. A.Gaisinskaya, R. Edrei, **A. Hoffman**\* and Y. Feldheim*,* Phys. Stat. Sol. A 1960-1966, 206, 9(2009).

218.“Temperature Enhancement of Secondary Electron Emission from Hydrogenated Diamond Films”, A.Stacey, S. Prawer, S. Rubanov , R. Ahvalediani, S. Michaelson and **A. Hoffman**, Journ. App. Phys. 2009, 106(6) 063715/1-063715/5.

219. “Morphological Evolution of Polished Single Crystal (100) Diamond Surface Exposed to Microwave Hydrogen Plasma”. A. Gaisinskaya, R. Edrei, **A. Hoffman**\* and Y. Feldheim Diam Rel. Mat. (2009), 18(12), 1466-1473.

220. Near coalescent submicron polycrystalline diamond films deposited on silicon: Hydrogen bonding and thermal enhanced carbide formation.  A. Stacey, Sh. Michaelson, J. Orwa, S. Rubanov, S. Prawer, B. C. C. Cowie, **A.** **Hoffman\*,** Jour. App. Phys., 2009, 106(10) 103503/1-103503/8.

221. “The Effect of Temperature on the Secondary Electron Emission Yield from Single Crystal and Polycrystalline Diamond Surfaces”, A. Stacey, S. Prawer, S. Michaelson, A. **Hoffman\***, Appl. Phys Lett. (2009), 95, 262109.

222. “Tribological and Adhesion Properties of CVD Diamond Films Grown on Steel with a Cr-N Interlayer”, A. Laikhtman, L. Rapoport, V. Perfilyev, A. Moshkovich, R. Akhvlediani and **A. Hoffman**, AIP Conference Proceedings (2009) 1151 (Advanced Materials and Nanotechnology), 157-161.

223. “Resistance of diamond (100) to hyperthermal atomic oxygen attack**”**  Shpilman, Z.; Gouzman, I.; Grossman, E.; Shen, L.; Minton, T. K.; **Hoffman, A**. Applied Physics Letters (2009), 95(17), 174106/1-174106/3.

**2010**

224. “Chemical Composition, Thermal Stability and Hydrogen Plasma Treatment of Laser Cut Single Crystal Diamond Surface Studied by X-ray Photoelectron Spectroscopy and Atomic Force Microscopy”, A. Gaisinskaya, R. Akhvlediani, R. Edrei, E. Alagem, Z.Yoselzon, A. Hoffman\* Diam Rel. Mat. 19(2010) 305-313.

225. “Experiment (NEXAFS) Versus Simulation (DOS) for Carbon Allotropes”, E. Warszawski, J. Adler, **A. Hoffman** and A. Silverman, Physics Procedia 3 (2010) 1381-1385.

 226. “Native Oxides and Carbon Contamination Removal from InAs(100) Surfaces by Molecular Hydrogen Flow at Moderate Substrate Temperatures – Stoichiometric and Morphological Studies” Y. Lyadov, R. Akhvlediani, **A. Hoffman**, O. Klin and Eli Weiss. Jour. App. Phys. 107, 1-7, 2010.

227. “Morphology and Bonding States of Cemical Vapor Deposition Diamond Nucleation Surface” , Z. Shpilman, I. Gouzman, E. Grossman, and **A. Hoffman**, Appl. Phys. Lett , 96, 104101 (2010).

228. Bulk an Surface Thermal Stability of Ultra Nano-crystalline Diamond Films with 10-30 nm Grain Size Prepared by Chemical Vapor Deposition”, Sh. Michaelson, A. Cimmino, B.C.C. Cowei, A. Stacey, J. Orwa, S. Prawer, O. Williams, D. Gruen and **A. Hoffman**, Journ. App. Phys, 107, 09352 (2010).

229. “High resolution electron energy loss spectroscopy surface studies of hydrogenated detonation nano-diamond spray deposited films” Sh. Michelson, A. Stacey, R. Akhvlediani, S. Prawer and **A. Hoffman**, Surf. Science, 604(2010) 1326-1330.

230. “In-situ oxidation and annealing of hydrogenated diamond (100) surfaces studied by high resolution electron energy loss spectroscopy”, A. Gaisinskaya, R. Akhvlediani and **A. Hoffman,** Diam. Rel. Matt., 19(2010) 1183-1187.

231. “Computational Study of Interstitial Hydrogen Atoms in Nano-diamond Grains Embedded in an Amorphous Carbon Shell”, A. Silverman, **A. Hoffman** and J. Adler, Commun. Com. Phys. 9(4), 2010, 843-858.

232. “Interaction of Water Molecules with Bare and Deuterated Polycrystalline Diamond Surfaces Studied by High Resolution Electron Energy Loss and X-ray Photoelectron Spectroscopies”, R. Akhvlediani, Sh. Michaelson, and **A. Hoffman,** Surf. Science, 604(2010) 2129-2138.

233. “Oxidation and Etching of CVD Diamond by Thermal and Hyper-Thermal Atomic Oxygen” Z. Shpilman, I. Gouzman, E. Grossman, L. Shen, T. Minton, R. Akhvlediani and **A. Hoffman**, Journ. Phys Chem C, 2010, 114, 18996-19003.

234. “Diamond C(1s) core-level exciton: surface sensitivity”, A. Stacey, B.C. C. Cowie, J. Orwa, S. Prawer, and **A. Hoffman** Phys. Rev. B. 82(2010) 125427.

**2011**

235. “Improved Diamond Surfaces Following lift-off and Plasma Treatments as Observed by X-ray Absorption Spectroscopy”, A. Stacey, V. S. Drumm, B.A. Fairchild, K. Ganesan, S. Rubanov, R. Kalish, B. C. C. Cowie, S. Prawer and **A. Hoffman**; Appl. Phys. Lett. 98, 181907 (2011); http://dx.doi.org/10.1063/1.3585106 98, 181907 (2011).

236. “ Cross Sectional Mapping of Multi-layer Silicon Structures by Scanning Capacitance Microscopy”, S. Michaelson, R. Edrei, **A. Hoffman**, R. Shima-Edelstein, E. Lipp, A. Aharoni and Y. Roizin: Towerjazz Tech. Journ. 1 (2011) 137-150.

237.”Hydrogen bonding configuration and thermal stability of ambient exposed and in-situ hydrogenated polycrystalline diamond surfaces studied by high resolution electron energy loss spectroscopy”; S. Michaelson, R. Akhvlediani and **A. Hoffman**. Phys. Chem. Chem. Phys. (PCCP), DOI: 10.1039/c1cp90019e.

238. “Low-energy electron scattering on deuterated nano-crystalline diamond films – A model system for understanding the interplay between density-of-states, excitation mechanisms and surface versus lattice contributions”; A. Lafosse, L. Amiaud, I. Martin, A. Milosavljević, S. Michaelson, Shaul; **A.Hoffman**, R. Azria; Phys. Chem. Chem. Phys. (PCCP), DOI: 10.1039/c1cp20219g.

239. “Hydrogen Interactions with Diamond”, **A. Hoffman** and J. Foord, Phys. Chem. Chem. Phys. (PCCP), DOI: 10.1039/c1cp90071d.

240. “Hydrogenated Polycrystalline Diamond Films: Elastic and inelastic electron reflectivity”, A. Lafosse, R.Azria, L. Amiaud, S. Michaelson and **A. Hoffman,** Prog. in Sur. Science, 86(2011) 94-114.

241. "Direct visualization and characterization of chemical bonding and phase composition of grain boundaries in polycrystalline diamond films by transmission electron microscopy and high resolution electron energy loss spectroscopy," App. Phys.Lett. 99, 201907 (2011).

242. “Synchrotron Radiation X-Ray Photoelectron Spectroscopy Study of Initial Stages of Atomic Layer Deposited HfOx Films Formation on Silicon and SiGe Substrates”, Sh. Michaelson, R. Akhvlediani, I. Milstein, A. Hoffman, J. Salzman, E. Lipp, R. Shima- Edelstein, A. Stacey and B.C.C. Cowei. Towerjazz Tech. Journ. 2 (2011) 83-89.

243. "Cross sectional mapping of multi-layer silicon structures by scanning capacitance microscopy", Sh. Michaelson, R. Edrei, A. Hoffman, R. Shima-Edelstein, E. Lipp, E. Aharoni, Y. Roizin, TOWER-JAZZ TECHNICAL JOURNAL, 1, (2011)

244, "Optimization of Chemical Vapor Deposition Diamond Films Growth on Steel: Correlation Between Mechanical Properties, Structure, and Composition", A.Laikhtman, L.Rapoport, V.Perfilyev, A.Moshkovich, R.Akhvlediani and A.Hoffman. JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY 11(9)(2011) 8251-8258 DOI: 10.1166/jnn.2011.5046.

**2012**

245. “The Impact of H/D Substitution on the Structure, Composition and Thermal Stability of Grain Boundaries in Sub-Micron Diamond Films Deposited on Silicon”, I.Y.Koenka, A. Stacey, R. Akhvlediani, S.Prawer and A.Hoffman., Diam. Rel. Matt. 22(2012) 59-65.

246. "Evidence for preferential reactivity of the atomic oxygen with hydrogenated diamond (111) facets", Sh. Michaelson, R. Akhvlediani, L. Tkach, A. Hoffman, , Surf. Science, 606(17–18) (2012) L79-L81.

247. "The effect of HfO2 overlayer on the thermal stability of SiGe substrate", Sh. Michaelson, R. Akhvlediani, I. Milshtein, A. Hoffman, B. Meyler, J. Salzman, E. Lipp, R. Shima-Edelstein, Y. Roizin, Electrochemical Society - Solid State Letters, 1(2012) N7-N12.

248. "Preferential adsorption of thermally activated oxygen onto annealed polycrystalline diamond films studied by high resolution electron energy and X-ray photoelectron spectroscopies", R. Akhvlediani, Sh. Michaelson, L. Tkach and A. Hoffman, , Phys. Stat. Sol. A. 1–7 (2012).

249. "Depletion of Nitrogen vacancy Color Centers in Diamond Via Hydrogen Passivation", A. Stacey, T.J. Karle, L.P. McGuinness, B.C. Gibson, K.Ganesan, S.Tomljenovic-Hanic, A.D.Greentree, S. Prawer, R.G. Beausoleil and A. Hoffman. Appl. Phys. Let. 100, 071902(2012)

250. "Cobalt out-diffusion and carbon phase composition at the WC-10%Co / Diamond film interface investigated by XPS, SEM, Raman and SIMS", E. Hojman, R. Akhvlediani, E. Alagem and A. Hoffman. Phy. Stat. Sol. A. 209(9) (2012)1726–1731-DOI 10.1002/pssa.201200037.

251. "The influence of surface conditioning on the thermionic electron emission from polycrystalline diamond films", O. Reinharz Bar-Hama , R. Akhvlediani and A. Hoffman. Phys. Stat. Sol. A 1–7 (2012) / DOI 10.1002/pssa.201200028.

**2013**

252. "The effect of low energy ion-beam induced amorphization on the thermionic electron emission properties of polycrystalline diamond films", O. Reinharz Bar-Hama and A. Hoffman, Diam. Rel. Matt. 32 (2013) 61–65.

253. "The interaction of H2O with the surface of polycrystalline gadolinium at the

temperature range 300-570 K". S. Cohen, A. Abramovich, S. Zalkind, M.H. Mintz, I Jacob, R. Akhvlediani, M. Segev, A. Hoffman, N. Shamir. Surf. Sci. (2013) DOI: doi: 10.1016/j.susc.2013.07.007.

254." Diamond CVD film formation onto WC-Co substrates using a thermally nitride Cr diffusion barrier". E. Hojman, R. Akhvlediani, A. Layyous and A. Hoffman, Diam. Rel. Matt. 39 (2013) 65-72.

255."Correlation of Optical and Chemical Properties of Silicon Niride Films Deposited by Plasma and Low Pressure CVD", Sh. Michaelson, , R. Akhvlediani, A. Hoffman, A. Itah, A. Gladkih, R. Shima-Edelstein, A. Fenigstein, M. Lisisansky and Y. Roizin, TOWER-JAZZ TECHNICAL JOURNAL, 4 (2013) 71-76.

**2014**

256."HR-EELS study of Hydrogen Bonding Configuration, Chemical and Thermal Stability of Detonation Nanodiamond Films", Sh. Michaelson, R. Akhvlediani, T. Petit, H.A. Girard , J-C. Arnoult and A. Hoffman. Appl. Surf. Science, 305(2014)1609-166.

257." Amorphous carbon enhancement of hydrogen penetration into UO2", S. Zalkind1, N. Shamir, T. Gouder, R. Akhvlediani, A. Hoffman, Appl. Surf. Science, 305(2014)539-543.

258." A Near Edge X-Ray Absorption Fine Structure Study of Oxidized Single Crystal and Polycrystalline Diamond Surfaces", Z. Shpilman, I. Gouzman, T. K. Minton, L. Shen, A. Stacey, J. Orwa, S. Prawer, B. C. C. Cowie and A. Hoffman. Diam. Rel. Matt. 45(2014)20-27.

259." The Impact of Surface Hydrogenation on the Thermionic Electron Emission from Polycrystalline Diamond Films", S. Elfimchev, S. Michaelson, R. Akhvlediani, M. Chandran, H. Kaslasi and A. Hoffman. Phys. Status Solidi A, 1-6(2014) / DOI 10.1002/pssa.201431168

260."Dissociative Adsorption of Molecular Deuterium on Polycrystalline Diamond Films Activated by Medium Surface temperatures", S Michaelson, T. Berkovitz, R. Akhvlediani and A. Hoffman. . Phys. Status Solidi A, 1-7(2014) / DOI 10.1002/pssa.201431165.

261. "Using Hydrogen Activated by Microwave Plasma vs. Molecular Hydrogen for Storage in Tungsten Disulfide Inorganic Nanotubes", A. Laikhtman, Sh. Michaelson, A. Hoffman, T.K. Kim, H.R. Moon and A. Zak. International Journal of Hydrogen Energy 39(2014) 9837-9841.

**2015**

262. "Nitrogen terminated diamond", Alastair Stacey\*, Kane M. O’Donnell, Jyh-Pin Chou, Alex Schenk, Anton Tadich, Nikolai Dontschuk, Jiri Cervenka, Chris Pakes, Adam Gali, Alon Hoffman and Steven Prawer. Adv. Mat. Interfaces 2015, 1500079 (6pp).

263. "The Influence of Deposition Temperature on the adhesion of diamond films deposited on WC-Co Substrates Using a Cr-N Interlayer", Miriam Ficher, Maneesh Chandran, Roza Akhveldiani and Alon Hoffman, Phys. Status Solidi A, 2628-2635 (2015) DOI 10.1002/pssa.201532210.

264. "Dissociative adsorption of molecular deuterium and thermal stability onto hydrogenated, bare and ion beam damaged poly- and single crystalline diamond surfaces", Shaul Michaelson, Maneesh Chandran, Shimon Zalkind; Noah Shamir; Roza Akhvlediani; Alon Hoffman, Surf. Science. 16-21 (642) 2015.

265. "Incorporation of nitrogen into polycrystalline diamond surfaces by RF plasma nitridation process at different temperatures: Bonding configuration and thermal stabilty studies by in-situ XPS and HREELS", Maneesh Chandran \*, Michal Shasha, Shaul Michaelson, Roza Akhvlediani and Alon Hoffman, Phys. Status Solidi A, 1-9(2015) DOI 10/1002/pssa/ 201532182.

266. "Nitrogen Termination of Single Crystal (100) Diamond surfaces by Radio Frequency Plasma Processes: An in-situ X-Ray Photo-emission Spectroscopy and Secondary Electron Emission Study", M. Chandran, M. Shasha, Sh. Michaelson and A. Hoffman. Appl. Phys. Lett. 2107 111602 (2015).

267. " Trap Assisted Photo-Enhanced Thermionic Emission from Polycrystalline Diamond Films", S. Elfimchev, M. Chandran, R. Akhvlediani, and A. Hoffman. Phys. Status Solidi A, 212 (2015) 2583-2588.

**2016**

268. Evidence for D2 Dissociative Chemisorption and Electron Affinity Changes of Bare and Ion Beam Damaged Polycrystalline Diamond Surfaces", Sh. Michaelson, M. Chandran and A. Hoffman, Diamond and Rel. Matt.63 (2016) 26-29.

269. “ Incorporation of Low Energy Activated Nitrogen onto HOPG Surface:Chemical States and Thermal Sability Studies by in-situ XPS and Raman Sectroscopy” M. Chandran, M. Shasha, S. Michaelson and A. Hoffman, Appl. Surf. Science, 382 (2016) 192-201.

270. “Fabrication of a Nanometer Thick Nitrogen Delta Doped Layer at the Sub-surface Region of (100) Diamond”, M. Chandran\*, S. Michaelson, C. Saguy and A. Hoffman1 App. Phys. Let. 109, 221602 (2016).

271. “Interplay between adhesion and interfacial properties of diamond films deposited on WC-10%Co substrates using a CrN interlayer”, Miriam Fischer, Maneesh Chandran, Rozalia Akhvlediani and Alon Hoffman, Diam. Rel. Materials. 70(2016) 167-172.

**2017**

272. “Wear Performance of Diamond Coated WC-Co Tools with a CrN interlayer”, M. Chandran, F. Sammler, E. Uhlmann, R. Akhvlediani and A. Hoffman, Diam. Rel. Mat. 73 (2017) 47-55.

273. “Visible sub-band gap photoelectron emission from nitrogen doped and undoped polycrystalline diamond films”. S. Elfimchev\*, M. Chandran, R. Akhvlediani, A. Hoffman. Appl. Surf. Science, 410 (2017) 414-422.

274. “Nitrogen and hydrogen content, morphology and phase composition of hot filament chemical vapor deposited diamond films from NH3/CH4/H2 gas mixtures”, Sh. Cherf, M. Chandran, Sh. Michaelson, S. Elfimchev, R. Akhvlediani and A. Hoffman\*. Thin Solid Films 638 (2017) 264–268

275. "Fabrication of microchannels in polycrystalline diamond using pre-fabricated Si substrates” Maneesh Chandran\*, Sergey Elfimchev Shaul Michaelson, Rozalia Akhvlediani, Orna Ternyak and Alon Hoffman\*, J. App. Physics, 122,145303 (2017)

**2018**

276. “Raman scattering of Nitrogen incorporated diamond thin films grown by hot filament chemical vapor deposition”’ Mohan Kumar Kuntumalla, Sergey Elfimchev; Maneesh Chandran, Alon Hoffman, Thin Solid Films 653 (2018), 284-292.

277. “Hydrogen retention and nitrogen distribution in delta –doped diamond films”, Mohammed Attrash, Mohan Kumar Kuntumalla , Maneesh Chandran, Roza Akhvlediani and Alon Hoffman, Mat. Today Com. 17(2018) 413-418.

278. “Evidence for Primal sp2 Defects at the Diamond Surface: Candidates for Electron Trapping and Noise Sources”, Alastair Stacey\*, Nikolai Dontschuk, Jyh-Pin Chou\*, David A. Broadway, Alex Schenk, Michael J. Sear, Jean-Philippe Tetienne, Alon Hoffman, Steven Prawer, Chris I. Pakes, Anton Tadich, Nathalie P. de Leon, Adam Gali, Lloyd C. L. Hollenberg, Adv. Mat. Inter. (2018) 1801449 (1-8).

**2019**

279. “Bonding, structural properties and thermal stability of low damage RF(N2) plasma treated diamond (100) surfaces studied by XPS, LEED and TPD”, Mohammed Attrash, Mohan Kumar Kuntumalla and Alon Hoffman, Surf. Science 681 (2019) 95-103.

 280. “Enhanced cooling of electronic chips using combined diamond coating and microfluids”, Dor Daniel, Albert Mosyak, Roza Akhvlediani, Alon Hoffman and Gilad Yossifon, Phys. Rev. Appl. 11, 014047 (2019).

281. “Simultaneous Shot-Peening of Hard and Soft Particles for Friction Reduction in Reciprocal Sliding” ‘Ori Stav; Haytam Kasem, Rozalia Akhvlediani, Alon Hoffman, Yuri Kligerman and Izhak, Etsion, Tribology International 130 (2019) 19-26.

282. “Inﬂuence of RF(N2) plasma conditions on the chemical interaction and stability of activated nitrogen with polycrystalline diamond surfaces: A XPS,TPD and HREELS study” M. K. Kuntumalla, M. Attrash, F. Li, A. Hoﬀman, Surf. Science 679 (2019) 37-49.

283. “Oxygen bonding configurations and defects on differently oxidized diamond surfaces studied by high resolution electron energy loss spectroscopy and X-ray photoelectron spectroscopy measurements”’ F.N. Li\*, R. Akhvlediani, M.K. Kuntumalla, A. Hoffman\*, App. Surf. Science. 465 (2019) 313-319.

284. “Influence of CO2 addition on hydrogen and oxygen surface bonding onto nanostructured diamond thin film surfaces deposited at low substrate temperatures” Mohan Kumar Kuntumalla, Miriam Fischer, Rozalia Akhvlediani and Alon Hoffman, Thin Solid Films 685 (2019) 254-262

**2020**

285. “Nitrogen bonding, work function and thermal stability of nitride graphite surface: An in situ XPS, UPS, HREELS study” M. K. Kuntumalla, M. Attrash, Sh. Michaelson, R. Akhvlediani and A. Hoffman. App. Surf. Science. 525 (2020) 146562.

286. “Nitrogen terminated polycrystalline diamond surfaces by microwave chemical vapour deposition: thermal stability, chemical states and electronic structure studied by XPS, UPS, and HREELS” M. Attrash, M. K. Kuntumalla, S. Michaelson and A. Hoffman. J. Phys. Chem. C 2020, 124,5657-5664.

287. “Novel Ultra Localized and Dense Nitrogen Delta-doping in Diamond for Advanced Quantum Sensing”’ T. Jaffe, M. Attrash, M. K. Kuntumalla, R. Akhvlediani, S. Michaelson, , , L. Gal, N. Felgen, M. Fisher, J. P. Reithmaier, C. Popov, A. Hoffman and M. Orenstein. Nano Lett. 2020, 20, 3192-3198.

**2021**

288. “Nitrogen and Hydrogen Distribution and Retention in Dense N Delta Doping by layer Overgrowth onto a Diamond (100) Surface”, M.K. Kuntumalla, M. Attrash, S. Michaelson, T. Kravchuk and A. Hoffman, Appl. Surf. Science 550 (2021) 149331.

289. “Nitrogen Terminated Diamond (111) by RF(N2) Plasma, Chemical States, Thermal Stability and Structural Properties”, M. Attrash, M. K. Kuntumalla, S. Michaelson and A. Hoffman, Surf. Science 703 (2021) 121741

290. “Atomistic Insight into Nitrogen-Terminated Diamond(001) Surfaces by the Adsorption of N, NH, and NH2: A Density Functional Theory Study”, .Zheng, Y; Hoffman, A.; Huang, K. Langmuir, **2021**, 37, 20, 6248-6256.

291. “ Effect of Surface Hydrogenation on the Adsorption and Thermal Evolution of Nitrogen Species on Diamond(001) by Microwave N2 Plasma” Zheng, Y; Kuntumalla, M. K.; Attrash, M.; Hoffman, A.; Huang, K.. J. Phys. Chem. C **2021**, 125, 28157-28161.

**2022**

292. “Adsorption and Migration of Silver on Group IV Semiconductor (001) Surfaces by Density Functional Theory” X. Huang, A. Hoffman and K. Huang J. Chem. Phys. C 2022, 126, 8134-8142

293. “Microwave N2 plasma nitridation of H-diamond (111) surface studied by in situ XPS, HREELS, UPS, TPD, LEED and DFT”’ M. K. Kuntumalla, Y. Zheng, M. Attrash, G. Gani, S. Michaelson, K. Huang and A. Hoffman. Appl. Surf. Science 600 (2022)154085

294. “Investigation of the cooling enhancement of a single crystal diamond heat sink with embedded microfluidic channels” Jiao Fu, Alon Hoffman, Mohan Kumar Kuntumalla, Hong-xing Wang, Daming Chen, Albert Mosyak, and Gilad Yossifon.; Diam. Re. Mat. (2022) 109470.

**2023**

295. “Bonding, retention and thermal stability of shallow nitrogen in diamond (100) by low energy nitrogen implantation”. M. K. Kuntumalla, G. Gani, M. Fischer and A. Hoffman; Surfaces and Interfaces 37 (2023) 102649.

296. “Entrapment and thermal stability of low energy Argon implanted into diamond studied by in-situ X-ray photo-electron spectroscopy and thermal programmed desorption”. M. Fischer, M. K. Kuntumalla and A. Hoffman; Appl Surf. Science, 615 (2023) 156358.

297. “Enhanced quantum properties of shallow diamond atomic defects through nitrogen

surface termination”. R. Malkinson, M. K. Kuntumalla, A. Hoffman, and N. Bar-Gill, Phys. Rev. Materials February 2023, submitted.

298. “Influence of different nitrogen plasmas exposures of H-Diamond (100) surfaces on ambient oxygen adsorption, nitrogen bonding and thermal stability studied by X-ray photoelectron spectroscopy”. Mohan Kumar Kuntumallaand Alon Hoffman. Phys. Status. Solidi (a) applications and materials science DOI:10.1002/pssa.202300319

**(C) REVIEW PAPERS**

1. “ Nucleation and Initial Growth Stages of Chemical Vapor Deposition (CVD) Diamond Films” R. Shima, I. Gouzman and **A. Hoffman**, I. Jour. Chem. 38 (1998) 17-31.

From 2000 only

2. “Growth and Adhesion Enhancement of Diamond Films Deposited on Steel Substrates by a Cr-N Interlayer” O. Glozman and **A. Hoffman**, I. Jour. Chem. 38 (1998) 75-84.

From 2000 only

3.“The Influence of Ion Irradiation on Absolution Quantum Photo-yield of Diamond Films Studied by Electron Spectroscopy and H+ Photo-Desorption”, A. Laikhtman and **A. Hoffman**, Surf. Rev. Lett., 7(4) 2000, 455-462.

<http://www.worldscinet.com/srl/07/0704/S0218625X00000440.html> abstract

4. “Quantum Photo-yield of Hydrogenated Single Crystal, Polycrystalline and Defective Diamond Surfaces”, A. Laikhtman and A. Hoffman, New Diamond and Frontier Carbon Technology, 10(6) 2000, 339-361. From Vol. 15 only

5. “Some Aspects of Electron and Ion NEXAFS Investigations of Hydrogenated Diamond Film Surfaces”, A. Laikhtman and **A. Hoffman**, New Diamond and Frontier Carbon Technology, 14(2) 2003, 75-86. From Vol. 15 only

6. “Photon Stimulated Desorption of Hydrogen from Diamond Surfaces Via Core Level Excitations: Fundamental Processes and Applications to Surface Studies”, (invited review article) **A. Hoffman** and A. Laikhtman, J. Phys. Condens. Matter, 18 (2006), S1517-S1546.

<http://iopscience.iop.org/0953-8984/18/30/S08/pdf?ejredirect=.iopscience>

7. “Diamond Film Deposition on WC-Co and Steel Sustrates with a CrN Interlayer for Tribological Applications”. M. Chandran and A. Hoffman. J. Phys. D: Appl. Phys. 49(2016) 213002 (26pp).

 **(D) CHAPTERS IN BOOKS.**

1. “Nano-diamond Films Deposited from Energetic Species: Material Characterization and Mechanism of Formation”, I. Gouzman, Sh. Michaelson and **A. Hoffman**. Ch. 7 in the book: “Nano-diamond films”, ed. by D.M. Gruen, 2005.

2. “Mechanism and Properties of Nano-diamonds Films Deposited by the DC-GD-CVD Process”, **A. Hoffman**. Ch. 10 in the book: “Synthesis, Properties and Applications of Ultra-Nanocrystalline Diamond” ed. by D.M. Gruen, O. Shenderova and A.Y. Vul. NATO Science Series II vol. 192. Published by Springer. 2005.

3. “Hydrogen Concentration, Bonding Configuration and Electron Emission properties of polycrystalline Diamond Films: From Micro – to Nanometric Grain Size”, S. Michaelson, O. Ternyak, R. Akhvlediani and **A. Hoffman**, Chapter 7, p. 223-256 in “Towards Functional Nanomaterials”, Wang, Zhiming M. (Editor) Series: Lecture Notes in Nanoscale Science and ssTechnology, Vol. 5, Springer 2009.

4. "Bonding and Concentration of Hydrogen and Thermal Stability of Nanocrystalline Diamond Films", S. Michaelson and A. Hoffman, p247-p290, Ch 8 in the book: " Ultra-Nanocrystalline Diamond: Synthesis, Properties and Applications” Second Edition, ed. by D.M. Gruen, O. Shenderova. Published by ELSEVIER. 2012

5. “HR-EELS Studies of Nano-Diamond Films” M. Michaelson and A. Hoffman, in “ Nanodiamond: Advanced Material Analysis, Properties and Applications”, edt by Jean Charles Arnault, Ch 9.243-272. Published by ELSEVIER 2017.

6. “ Bonding, thermal and ambient stability of nitrogen-terminated diamond (100) surfaces by plasma exposure studied by ex-situ XPS, HREELS, and DFT modeling”. Mohan Kumar Kuntumalla, Yusen Zheng, Kai Huangand Alon Hoffman. Third edition of “Novel Aspects of Diamond”., edt. by Nianjun Yang and Soumen Mandal. Published by Springer, 2023.

**(E) REFEREED PAPERS IN CONFERENCE PROCEEDINGS:**

1."ArF Laser Ablation of YBa2Cu3O7-X as Studied by Emission Spectroscopy, SEM and EDAX", **A. Hoffman** and R. Manory, in "High Temperature Superconductors: Fundamental Properties and Novel Material." Eds. J. Narayan, C.W. Chu, L.F. Shneemeyer and D.K. Christen, (MRS, Pitts., 1990) Vol.**169**, 497-500.

2."Characterization of Substrate - Film Interfaces for CVD Diamond Deposited on Fused Quartz and Silicon Substrates", **A. Hoffman**, S. Prawer, S. Stuart\* and R. Manory, in Proc. of "Second International Conference in the New Science and Technology of Diamond ICNDST", edt. Washington, September 1990, 599-605.

3."An Investigation into the use of a Diffusion Barrier in the Microwave Plasma Assisted Chemical Vapor Deposition of Diamond on Iron Surfaces", P.S. Weiser\*, S. Prawer**, A. Hoffman**, P.J.K. Paterson and S.A. Stuart\*, MRS, Vol. 242. page. 63-68.

4."Secondary Electron Emission of Crystalline and Non-crystalline Carbon Allotropes", **A. Hoffman** and S. Prawer, Mat. Res. Soc. Symp., Vol. **201**, "Surface Chemistry and Beam Solid Interaction", (MRS, Pitts, 1991) 619-624.

5."Investigation of Diamond Particles Grown by Microwave Plasma CVD on Tungsten Wire Tips", S. Stuart\*, S. Prawer, **A. Hoffman** and A. Moodie, Mat. Res. Soc. Symp. Proc., Vol. **202**, "Evolution of Thin Films and Surface Microstructure", (MRS, Pitts, 1991) 217-222.

<http://www.mrs.org/s_mrs/sec_subscribe.asp?CID=11997&DID=277902&action=detail>

6."Diamond Deposition on Sintered Tungsten", C.R. Shi, Y. Avigal#, S. Dirnfeld,
**A. Hoffman**, A. Fayer# and R. Kalish, Adv. in New Science and Technology, (1994) 781.

7. “Chemical vapor Deposition of Diamond onto Steel – the Effect of a Ti Implant Layer”, P.S. Weiser\*, S. Prawer, R.R. Manory, P.J. Evans, P.J.K. Paterson and **A. Hoffman**, Surf. Coat. Techn. 71 (1995) 167-174.

8. "Physico-Chemical Modification of Classy Carbon by 50K eV Nitrogen Ion Implantation", H. Geller\* and **A. Hoffman**, IBMM 95, Proc. Ninth Inter. Conf. on Ion Beam Mod. of Mat. page. 986-990. Elsevier 1996.

9. “SIMS Study of Clusters Formation During Cs+ Sputtering of Different Carbon Allotropes”. C. Cyterman#, **A. Hoffman** and R. Brener#. in Proc. of the Tenth International Conference on Secondary Ion Mass Spectrometry (SIMS X). John and Wiley & Sons. 1997, 267-270.

10. “Effect of Carburization and Nitridation of Chromium Substrate on Diamond Growth by Chemical Vapor Deposition Methods”. O. Glozman\*, A. Berner#, D. Shechtman and **A. Hoffman**. Mikrochim. Acta 15, (1998) 181-186.

11. “Photon Stimulated Desorption of Hydrogen Ions from Semiconductor Surfaces: Evidence for Direct and Indirect processes”, M. Petravic, **A. Hoffman**, G. Comtet, L. Hellner and G. Dujardin. Fizika A 8 (1999) 275-284.

12. “Dissociative Electron Attachment in H- Electron Stimulated Desorption from Hydrogenated Diamond Surfaces”.R. Azria, Y. LeCoat, M. Hadj Hamou, M.N. Hedhili, S. Ustaze, M Tronc and **A. Hoffman**, Surf. Sci., 482-485 (2001) 324-329.

13. “Surface Temperature Effects on the Dynamics of Low Energy Electron Stimulated Desorption of H- from Diamond Films”, **A. Hoffman** and R. Azria. Nucl. Instr. Meth. Res. B, 182 (2001) 155-161.

14. “Effect of Annealing and Microwave Hydrogen Plasma Treatment on Structural, Chemical, and Electronic Properties of Ion Irradiated Diamond Films” A. Laikhtman\* and A. Hoffman, MRS, february 2001.

15. “Ion Induced Electron Emission from Diamond”, R. Kalish, V. Richter#, B. Fizgeer#, N. Koenigsfeld\*, Y. Avigal#, Sh. Michelson\*, **A. Hoffman** and E. Cheifetz, IEEE September 2001.

16. “Morphological and Phase Evolution and of Nano-Crystalline Carbon Films with a Predominant Diamond Character”, **A. Hoffman** and A. Heiman\*, Colloids and Surfaces, 208 (2002) 121-129.

17. “The effects of Polyethylene Structure on its Interaction with a Simulated LEO Environment” R. Intrater\*, G. Lempert, I. Gouzman\*, E. Grossman and **A. Hoffman**. Proceedings of the 9th International Symposium on Materials in a Space Environment , 273-280, Noordwijk, The Netherlands, 1620 June 2003 (ESA SP-540, September 2003).