

Professor Yves J. Chabal  
PUBLICATION LIST

**2009**

286. *Infrared Characterization of Biotinylated Silicon Oxide Surfaces and Surface Stability under Specific Attachment of Streptavidin*, Norman A. Lapin, Yves J. Chabal, J. Phys. Chem. B (accepted, 2009)
285. *Theoretical and Experimental Analysis of H<sub>2</sub> binding in a prototype metal organic framework material*, L. Kong, V.R. Cooper, N. Nijem, K. Li, J. Li, Y.J. Chabal, and D.C. Langreth, Phys. Rev. B (Rapid Communications) (accepted, 2009) <http://link.aps.org/abstract/PRB/v79/e081407>
284. *In-situ Infrared Characterization during Atomic Layer Deposition of Lanthanum Oxide*, Jinhee Kwon, Min Dai, Mathew D. Halls, Erik Langereis, Yves J. Chabal and Roy G. Gordon, J. Phys. Chem. C 113, 654 (2009).
283. *Atomic Layer Deposition of Aluminum Oxide on Carboxylic Acid-terminated Self-Assembled Monolayers*, M. Li, M. Dai, and Y.J. Chabal, Langmuir xx, xxx (2009) (in press) [Jan. 13 DOI: 10.1021/la803581k]
282. *Fundamental Steps towards Interface Amorphization during Silicon Oxidation*, A. Hemeryck, A. Estève, N. Richard, M. Djafari Rouhani, and Y. J. Chabal, Phys. Rev. Bxx, xxx (2009) (in press) [Jan. 2009: DOI: 10.1103/PhysRevB.79.035317]

**2008**

281. *Attachment of 3-(aminopropyl) triethoxysilane on silicon oxide surfaces: Dependence on solution temperature*, Robert M. Pasternack, Sandrine Rivillon Amy, Yves J. Chabal, Langmuir 24, 12963-12971 (2008)
280. *Surface and Interface Chemistry for Gate Stacks on Silicon*, M.M. Frank and Y.J. Chabal, Chapter 6 in *Into the Nano Era*, H.R. Huff (editor), Springer Series in Materials Science, R. Hull, R.M. Osgood, J. Parisi and H. Warlimont (editors) (2008).
279. *Formation of Periodic Nanostructure Network through Substrate Mediated Assembly*, K. Prabhakaran, J. Kurian, K.N.P. Kumar, Y.J. Chabal, Applied Surface Science 255, 2063-2068 (2008).
278. *Testing the Effect of Surface Coating on Alkali Atom Polarization Lifetime*, S.J. Selzer, D.M. Rampulla, S. Rivillon-Amy, Y.J. Chabal, S.L. Bernasek, M. V. Romalis, J. Appl. Phys. 104, 103116 (2008)
277. *Genipin-induced changes in collagen gels: correlation of mechanical properties to fluorescence*, H. G. Sundararaghavan, G. Monteiro, N. Lapin, Y. J. Chabal, J. R. Miksan, and \*D. I. Shreiber, J Biomed Materials Res.A 87(2), 308-320 (2008)

276. *Formation and Bonding of Alane Clusters on Al(111) Surfaces studied by Infrared Absorption Spectroscopy and Theoretical Modeling*, Santanu Chaudhuri, Sylvie Rangan, Jean-Francois Veyan, James T. Muckerman, and Yves J. Chabal, J. Am. Chem. Soc. 130, 10576-10587 (2008)

275. *Investigation of the chemical purity of silicon surfaces reacted with liquid methanol*, D Michalak, S Rivillon Amy, A Esteve, Y Chabal, J. Phys. Chem. C, 112 (31), 11907-11919 (2008)

274. *Detection of a Formate Surface Intermediate in the Atomic Layer Deposition of High- $\kappa$  Dielectrics Using Ozone*, J. Kwon, M. Dai, M.D. Halls, Y.J. Chabal, Chem. Mater.; (Communication) 20(10); 3248-3250 (2008)

273. *UV-induced immobilization of tethered zirconocenes on H-terminated silicon surfaces*, Heidrun Gruber-Woelfler, Sandrine Rivillon Amy, Yves J. Chabal, Georg Schitter, Eleonora Polo, Markus Ringwald and Johannes G. Khinast, Chem. Commun. 1329 – 1331 (2008)

272. *Nanoscale actuation of electrokinetic flows on thermoreversible surfaces*, G. Paumier, J. Sudor, A.M. Gue, F. Vinet, M. Li, Y.J. Chabal, A. Estève, M. Djafari-Rouhani, Electrophoresis 29(6):1245-52 (2008)

271. *Adsorbate-surface phonon interactions in deuterium-passivated Si(111)-(1x1)*, G.A. Ferguson, K. Raghavachari, D.J. Michalak, Y.J. Chabal, J. Phys. Chem. C 112, 1034-1039 (2008)

## 2007

270. *Passivation and Characterization of Germanium Surfaces*, S.R. Amy, and Y.J. Chabal, Chapter 4 in *Advanced Gate Stacks for High-Mobility Semiconductors*, A.Dimoulas, E. Gusev, P.C. McIntyre, M. Heyns (editors), Springer Series in Advanced Microelectronics (2007).

269. *Investigation of the reactions during alkylation of chlorine-terminated silicon(111) surfaces*, S. Rivillon Amy, D.J. Michalak, Y.J. Chabal et al., J. Phys. Chem. C 111, 13053-13061 (2007).

268. *Surface Chemical Composition and Morphology*, Y.J. Chabal, G.S. Higashi, and R.J. Small, Chapter 9 in *Handbook of Silicon Wafer Cleaning Technology (2<sup>nd</sup> Edition)*, K.A. Reinhardt and W. Kern (editors), William Andrew, Norwich, NY (2007)

267. *Infrared spectroscopic investigation of the reaction of H-terminated, (111) oriented Si surfaces with liquid methanol*, D.J. Michalak, S. Rivillon Amy, Y.J. Chabal et al., J. Phys. Chem. B 110, 20426-20434 (2007).

266. *Molecular Ordering in Bis(phenylenyl)bithiophenes*, M. Stickle, R. Kortan, S. Rivillon Amy, Y. Chabal, H. Katz, C. Kloc, T. Siegrist, J. Mat. Chem. 17, 3427-3432 (2007).

265. *Difficulty of Oxygen to incorporate into the silicon network during initial O<sub>2</sub> oxidation of Si(100)-(2x1)*, A. Hemeryck, A.J. Mayne, N. Richard, A. Estève, Y.J.

Chabal, M. Djafari Rouhani, G. Dujardin, G. Comtet, J. Chem. Phys. 126, 114707 (2007).

264. *Characterization for Atomic Layer deposited ultra-thin Hafnium Oxide Films on Silicon*, Y. Wang, M-T. Ho, L.V. Goncharova, L.S. Wielunski, S.R. Amy, Y.J. Chabal, and T. Gustafsson, Chem. Materials 19, 3127-3138 (2007).

263. *In-situ Infrared Absorption Spectroscopy for Thin Film Growth by Atomic Layer Deposition*, Y. Wang, M. Dai, S. Rivillon, M-T. Ho, and Y.J. Chabal, SPIE Proceedings 6325, p.63250G (2006).

262. *Infrared Characterization of Hafnium oxide grown by Atomic Layer Deposition using Ozone as the oxygen precursor*, Y. Wang, M. Dai, M-T. Ho, L.S. Wielunski, and Y. J. Chabal, Appl. Phys. Lett. 90, 022906 (2007).

261. *Role of hydrogen in hydrogen-induced exfoliation of germanium*, J.M. Zahler, A. Fontcuberta I Morral, M.J. Griggs, H. A. Atwater, and Y. J. Chabal, Phys. Rev. B. **75**, 035309 (2007).

260. *Hydrogen Barrier Layer Against Silicon Oxidation during Atomic Layer Deposition of  $Al_2O_3$  and  $HfO_2$* , M.M. Frank, Y. Wang, M-T. Ho, R.T. Brewer, N. Moumen, and Y.J. Chabal, J. Electrochem. Soc. 154 (2), G44-48 (2007).

## 2006

259. *Alkylation of silicon(111) surfaces*, S. Rivillon, Y. J. Chabal, J. Phys. IV France, 132, 195 (2006)

258. *Thermal stability of amorphous lanthanum scandium oxide films on silicon*, L. F. Edge, D. G. Schlom, S. Rivillon, Y. J. Chabal, M. P. Agustin, S. Stemmer, H. S. Craft, J-P. Maria, M. E. Hawle, B. Holländer and J. Schuber, K. Eisenbeiser, J. Appl. Phys., 89, 062902 (2006)

257. *An Infrared Spectroscopic Investigation of the Reaction of Hydrogen-Terminated, (111)-Oriented, Silicon Surfaces with Liquid Methanol*, D. J. Michalak, S. Rivillon Amy, Y. J. Chabal, A. Estève, N. S. Lewis, J. Phys. Chem. B 110, 20426 (2006)

256. *Wet Chemical Cleaning of Germanium Surfaces for Growth of High-k Dielectrics* S. Rivillon Amy, Y. J. Chabal, F. Amy, A. Kahn, C. Krugg, P. Kirsch, in *Gate Stack Scaling -- Materials Selection, Role of Interfaces, and Reliability Implications*, edited by R. Jammy, A. Shanware, V. Misra, Y. Tsunashima, S. De Gendt (Mater. Res. Soc. Symp. Proc. 917E, Warrendale, PA), 917-E01-05 (2006)

255. *Transmission Infrared Spectroscopy of Methyl- and Ethyl-Terminated Silicon(111) Surfaces*, L. J. Webb, S. Rivillon, D. J. Michalak, Y J. Chabal, and N S. Lewis, J. Phys. Chem. B 110, 7349 (2006)

## 2005

254. *Ion backscattering study of ultra-thin oxides: Al<sub>2</sub>O<sub>3</sub> and AlHfO<sub>x</sub> films on Si*, L. S. Wielunski, Y. Chabal, M. Paunescu, M.-T. Ho, R. Brewer, J. E. Reyes, Nucl. Instr. and Meth. in Phys. Res. B, 241, 377 (2005)
253. *Hydrogen-passivation of germanium(100) surface using wet chemical preparation*, S. Rivillon, Y. J. Chabal, F. Amy, A. Kahn, Appl. Phys. Lett. 87, 253101 (2005).
252. *Spectroscopic studies of the mechanism for hydrogen-induced exfoliation of InP*, A. Fontcuberta i Morral, J. M. Zahler, M. J. Griggs, H. A. Atwater, Y. J. Chabal, Phys. Rev. B, 72, 085219 (2005)
251. *Water reaction with chlorine-terminated silicon (111) and (100) surfaces*, S. Rivillon, R. T. Brewer, Y. J. Chabal, Appl. Phys. Lett. 87, 173118 (2005)
250. *Controlled silicon surface functionalization by alkene hydrosilylation*, A. Langner, A. Panarello, S. Rivillon, O. Vassilyev, J. Khinast, Y. J. Chabal, J. Am. Chem. Soc., 127, 12798 (2005)
249. *In situ infrared spectroscopy of hafnium oxide growth on hydrogen-terminated silicon surfaces by atomic layer deposition*, M.-T. Ho, Y. Wang, R. T. Brewer, L. S. Wielunski, Y. J. Chabal, N. Moumen, M. Boleslawski, App. Phys. Lett., 87, 133103 (2005)
248. *Silicon surface and interface issues for nanoelectronics*, Y. Chabal, L. C. Feldman, Interface, 14(1), 31 (2005)
247. *Chlorination of hydrogen-terminated silicon (111) surfaces*, S. Rivillon, Y. J. Chabal, L. J. Webb, D. J. Michalak, N. S. Lewis, M. D. Halls, K. Raghavachari, J. Vac. Sci. Technol. A, 23(4), 1100 (2005)
246. *HfO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> gate dielectrics on GaAs grown by atomic layer deposition*, M. M. Frank, G. D. Wilk, D. Starodub, T. Gustafsson, E. Garfunkel, Y. J. Chabal, J. Graul, D. A. Muller, Appl. Phys. Lett., 86, 152904 (2005)
245. *High-k gate dielectrics on silicon and germanium: impact of surface preparation*, M. M. Frank, H. Shang, S. Rivillon, F. Amy, C.-L. Hsueh, V. K. Paruchuri, R. T. Mo, M. Copel, E. P. Gusev, M. A. Gribelyuk, Y. J. Chabal, Solid State Phenom. 103-104, 3 (2005)
244. *Mechanistic studies of dielectric growth on silicon*, M. M. Frank and Y. J. Chabal, Chapter 11 in *Materials fundamental of gate dielectrics*, A.A. Demkov and A. Navrotsky (edit.), Kluwer Academic Publisher (2005) p367-401.

## 2004

243. *The role of hydrogen in H-induced exfoliation and layer transfer of InP*, A. Fontcuberta i Morral, J. M. Zahler, Harry A. Atwater, M. M. Frank, Y. J. Chabal, Proc. Mat. Res. Soc. (2004)
242. *Wet Chemical Cleaning of Plasma Oxide Grown on Heated (001) InP Surfaces*, B. Lita, O. Pluchery, R. L. Opila, Y. J. Chabal, G. Bunea, J. P. Holman, E. J. Bekos, J. Vac. Sci. Technol. B, 22, 1885 (2004)

241. *Ammonia Pretreatment for high- $\kappa$  dielectrics growth on silicon*, R.T. Brewer, M-T. Ho, Z. Zhang, L. Goncharova, D. G. Starodub, T. Gustafsson, and Y. J. Chabal, *Appl. Phys. Lett.* 85(17), 3830 (2004)
240. *Gas phase chlorination of H-passivated silicon surfaces*, S. Rivillon, F. Amy, Y.J. Chabal and M.M. Frank, *Appl. Phys. Lett.* 85(13), 2583 (2004)
239. *Suppression of subcutaneous oxidation during the deposition of amorphous lanthanum aluminate on silicon*, L. F. Edge, D. G. Schlom, R. T. Brewer, Y. J. Chabal, J. R. Williams, S. A. Chambers, C. Hinkle, G. Lucovsky, Y. Yang, S. Stemmer, M. Copel, B. Hollander, J. Schubert, *Appl. Phys. Lett.* 84(23), 4629 (2004)
238. *Hafnium oxide gate dielectrics grown from an alkoxide precursor: structure and defects matter*, M.M. Frank, S. Sayan, S. Dörmann, T.J. Emge, L.S. Wielunski, E. Garfunkel, Y.J. Chabal, *Sci. Eng. B* 109, 6 (2004).
237. *Metallic contact formation for molecular electronics: interactions between vapor-deposited metals and self-assembled monolayers of conjugated mono- and dithiols*, B. de Boer, M.M. Frank, Y.J. Chabal, W. Jiang, E. Garfunkel, Z. Bao, *Langmuir*, 20(5), 1539 (2004).
236. *Infrared Spectroscopic Analysis of an Ordered Si/SiO<sub>2</sub> Interface*, K. T. Queeney, N. Herbots, Justin M. Shaw, V. Atluri, Y. J. Chabal, *Appl. Phys. Lett.* 84, 493 (2004)

## 2003

235. *In situ spectroscopic approach to atomic layer deposition*, M.M. Frank, Y.J. Chabal and G.D. Wilk, *MRS Soc. Symp.*, M.I. Gardner, S. De Gendt, J.-P. Maria, S. Stemmer eds, 745, 41 (2003).
234. *Electrical and structural characterization of the interface of wafer bonded InP/Si*, A. Fontcuberta, I Morral, J.M. Zahler, H.A. Atwater, M.M. Frank, Y.J. Chabal, P. Ahrenkiel, M. Wanlass, H.A. Atwater, *MRS Symp. Proc.*, M. Levy, M.I. Current, T. Sands eds, 768, G2.4.1 (2003).
233. *Self-assembled monolayers of conjugated thiols studied by infrared spectroscopy: structure and metal electrode deposition*, M.M. Frank, B. de Boer, Y.J. Chabal, Z. Bao, *Polymer Preprints* 44, 383 (2003).
232. *Structural and electrical characterization of organic monolayers on surfaces*, W. Jiang, O. Celik, N. Zhitenev, Z. Bao, B. de Boer, J. Zaumseil, Y.J. Chabal, M.M. Frank, E. Garfunkel, *Polymer Preprints* 44, 372 (2003).
231. *Atomic layer deposition of Al<sub>2</sub>O<sub>3</sub> on H-passivated Si: Al(CH<sub>3</sub>)<sub>2</sub>OH surface reactions with H/Si(100)-2x1*, M.D. Halls, K. Raghavachari, M.M. Frank, Y.J. Chabal, *Phys. Rev. B* 68(16), 161302-1 (2003).
230. *Interaction of H, O<sub>2</sub>, and H<sub>2</sub>O with 3C-SiC surfaces*, F. Amy, Y.J. Chabal, *J. Chem. Phys.* 119(12), 6201 (2003).

229. *Wet Chemical Cleaning of InP surfaces investigated by in situ and ex situ infrared spectroscopy*, O. Pluchery, Y.J. Chabal, R.L. Opila and S.B. Christman, J. Appl. Phys. 94(4), 2707 (2003).
228. *Enhanced initial growth of atomic-layer-deposited metal oxides on hydrogen-terminated silicon*, M. Frank, Y.J. Chabal, M.L. Green A. Delabie, B. Brijs, G.D. Wilk, M.Y. Ho, E. B. O. da Rosa, I. J. R. Baumvol and F. C. Stedile, Appl. Phys. Lett., 83(4), 740 (2003).
227. *The microscopic origin of optical phonon evolution during water oxidation of Si(100)*, K.T. Queeney, M. K. Weldon, Y.J. Chabal, K. Raghavachari, J. Chem. Phys. 119(4), 2307 (2003).
226. *Nucleation and interface formation mechanisms in atomic layer deposition of gate oxides*, M. Frank, Y.J. Chabal and G. D. Wilk, Appl. Phys. Lett 82, 4758 (2003).
225. *Synthesis and Characterization of Conjugated Mono- and Dithiol Oligomers and Characterization of Their Self-Assembled Monolayers*, Hong Meng, Bert de Boer, Dmitrii F. Perepichka, Jie Zheng, Yves J. Chabal, Fred Wudl, P. Gregory Van Patten, Zhenan Bao, Langmuir 19, 4272 (2003).
224. *Advances in high  $\kappa$  gate dielectrics for Si and III-V semiconductor*, J. Kwo, M. Hong, B. Busch, D.A. Muller, Y.J. Chabal, A.R. Kortan, J.P. Mannaerts, B. Yang, P. Ye, H. Gossman, A.M. Sergent, K.K. Ng, J. Bude, W. H. Schulte, E. Garfunkel, T. Gustafsson, J. Cryst. Growth 251, 645 (2003).
223. *Nanochemistry at the Atomic Scale: Hydrogen-induced Semiconductor Surface Metallization*, V. Derycke, P. Soukiassian, F. Amy, Y.J. Chabal, M. Dangelo, H. Enriquez and M. Silly, Nature Materials, 2(4), 253 (2003).

## 2002

222. *Materials Characterization of Alternative Gate Dielectrics*, B. Busch, O. Pluchery, Y.J. Chabal, D. Muller and R.L. Opila, MRS bulletin 27 (3), 206 (2002).
221. *Silanone (Si=O) at Si(100):initial intermediate for silicon oxidation*, X. Zhang, Y.J. Chabal, K. Raghavachari and E. Garfunkel, Phys. Rev. B 66, 161315 (2002).
220. *In-situ FTIR studies of SiO<sub>2</sub>/liquid interfaces*, H. Fukidome, O. Pluchery, K.T. Queeney, Y. Caudano, E. Chaban, S.B. Christman, K. Raghavachari, H. Kobayashi, and Y.J. Chabal, Surf. Sci. 502, 498 (2002)
219. *Investigation of the bending vibrations of vicinal H/Si(111) surfaces by infrared spectroscopy*, Y. Caudano, P.A. Thiry and Y.J. Chabal, Surf. Sci. 502-503, 91 (2002).
218. *Vibrational study of the Indium Phosphide oxides*, Olivier Pluchery, Joseph Eng Jr., Robert L. Opila, Yves J. Chabal, Surf. Sci. 502, 75 (2002).
217. *Applications of Infrared Absorption Spectroscopy to the Microelectronic Industry* Y.J. Chabal and K. Raghavachari, Surf. Sci. 502-503, 41 (2002).
216. *Morphology, conduction and Interfacial Characteristics of Ultrathin ( $t_{equ}=1.0nm$ ) Gate Dielectrics: a Study of Critical Integration Issues for High K Dielectrics*, J. Kwo, B. Busch, D.A. Muller, M. Hong, Y.J. Chabal, L. Manchanda,

A.R. Kortan, J.P. Mannaerts, T. Boone, W.H. Schulte, E. Garfunkel, and T. Gustafsson”, IEDM proc. (2002).

215. *The Surface Science of Semiconductor Processing: The Story of the Ever-shrinking Transistor*, M.K. Weldon, J. Eng, Jr., K.T. Queeney, K. Raghavachari, and Y.J. Chabal, Review for Surface Science 500(1-3), 859 (2002).

214. *Internal Transmission Spectroscopy*, Y.J. Chabal in *Handbook of Vibrational Spectroscopy*, J.M. Chalmers and P.R. Griffiths Eds, John Wiley & Sons, Ltd, 1, 1117 (2002).

## 2001

213. *Properties of High  $\kappa$  Gate Dielectrics  $Gd_2O_3$  and  $Y_2O_3$  for Silicon*, J. Kwo, M. Hong, A.R. Kortan, K.T. Queeney, Y.J. Chabal, R.L Opila, D.A. Muller, S.N.G. Chu, B.J. Sapjeta, T.S. Lay, J.P. Manneart, T. Boone, H.W. Krauter, J.J. Krajewski, A.M. Sergent and J.M. Rosamilia, J. Appl. Phys. 89(7), 3920 (2001).

212. *Review of: Silicon Surfaces and Formation of Interfaces: Basic Science in the Industrial World*, Y.J. Chabal, Physics Today, p76 ( 2001).

211. *Kinetic Monte Carlo Simulations of Thermal Oxygen Incorporation into Water-covered Si(100)-(2x1)*, A. Esteve, Y.J. Chabal, Krishnan Raghavachari, M.K. Weldon, K.T. Queeney, and M. Djafari Rouhani, J. Appl. Phys. 90(12), 6000 (2001).

210. *Stability of HF-etched Si(100) Surfaces in oxygen ambient*” X. Zhang, Y.J. Chabal, E. Garfunkel and S.B. Christman and E.E. Chaban, App. Phys. Lett. 79(24), 4051 (2001).

209. *Atomic scale Oxidation of the 6H-SiC(0001)-(3x3) Surface*, F. Amy, H. Enriquez, P.Soukiassian, Y.J. Chabal, P-F. Storino, A.J. Mayne, G. Dujardin, Y.K. Hwu, and C. Brylinski, Phys. Rev. Lett. 86(19), 4342 (2001).

208. *Oxidation of H-covered Flat and Vicinal Si(111)-1x1 Surfaces*, X. Zhang, Y.J. Chabal, S.B. Christman, E.E. Chaban and E. Garfunkel, J. Vac. Sci. Technol. A 19(4), 1725 (2001).

207. *In situ FTIR Studies of Reactions at the Silicon/Liquid Interface: Wet Chemical Etching of Ultrathin SiO<sub>2</sub> on Si(100)*, K.T. Queeney, H. Fukidome, E.E. Chaban and Y.J. Chabal, J. Phys. Chem. B 105(105), 3903 (2001).

206. *Water-saturated Si(100)-(2x1): Kinetic Monte Carlo simulations of thermal oxygen incorporation*, A. Esteve, Y.J. Chabal, K. Raghavachari, M.K. Weldon, K.T. Queeney and M.D. Rouhani J. Appl. Phys. **90**(12), 6000 (2001).

205. *Vibrational studies of ultra-thin oxides and initial silicon oxidation*, , Y.J. Chabal, M.K. Weldon, K.T. Queeney and A. Estève, in *Fundamental Aspects of Silicon Oxidation* Y.J. Chabal ed, Springer, 46, 143-159 (2001).

204. *Ultra-thin Oxides and Initial Silicon Oxidation*, Y.J. Chabal, M.K. Weldon and K.T. Queeney, in *Fundamental Aspects of Silicon Oxidation* Y.J. Chabal ed, Springer Series in Materials Science, 46, 143 (2001).

203. *Role of interdimer interactions in NH<sub>3</sub> Dissociation on Si(100)-(2×1)* K.T. Queeney, K. Raghavachari and Y.J. Chabal, Phys. Rev. Lett. 86(6), 1046 (2001).

202. *The Evolution of Chemical Oxides into Ultrathin Oxides: A spectroscopic Characterization*, J. Eng, Jr., R.L. Opila, J.M. Rosamilia, B.J. Sapjeta, Y.J. Chabal, T. Boone, R. Masaitis, T. Sorsch, and M.L. Green, Solid State Phenomena 76-77, 145 (2001).

## 2000

201. *High Performance, Highly Reliable Gate Oxide formed with Rapid Thermal Oxidation in-situ Steam Generation (ISSG) Technique*, Y. Ma, Y. Chen, M. Brown, F. Li, J. Eng, Jr., R. L. Opila, Y.J. Chabal, B.J. Sapjeta, D. Muller, G. Xing, T. Trowbridge, M. Khau, and N. Tam, Proc. Electrochemical society Rapid Thermal and other short-time processing technologies II 2000-9, 179 (2000).

200. *Mechanistic Studies of Wafer Bonding and Thin Film Exfoliation*, Y.J. Chabal, E.D. Isaacs and M.K. Weldon, MRS Symp. Proc. 587, O4.41 (2000).

199. *High  $\epsilon$  Gate Dielectrics Gd<sub>2</sub>O<sub>3</sub> and Y<sub>2</sub>O<sub>3</sub> for Silicon*, J. Kwo, M. Hong, A.R. Kortan, K.T. Queeney, Y.J. Chabal, J.P. Maenaerts, T. Boone, J.J. Krajewski, A.M. Sergent, and J.M. Rosamilia, Appl. Phys. Lett. 77(1), 130 (2000).

198. *Thermal Oxidation of Silicon with Hydrogen and Oxygen for Gate Oxide Application in Integrated Circuit Devices*, Edith Yang, Yi Ma, Joe Eng, Jr., R. L. Opila, Jr., \* Y. J. Chabal, Proc. Electrochem. Soc. (2000).

197. *Si-H Bending Modes as a Probe of local Chemical Structure: Thermal and Chemical Routes to Decomposition of H<sub>2</sub>O on Si(100)-(2x1)*, M.K. Weldon, A.B. Gurevich, K.T. Queeney, A.B. Gurevich, B.B. Stefanov, K. Raghavachari and Y.J. Chabal, J. Chem. Phys. 113(6), 2440 (2000).

196. *Infrared Spectroscopic Analysis of the Si/SiO<sub>2</sub> Interface of Thermally oxidized Silicon*, K. T. Queeney, M. K. Weldon, J. P. Chang, Y. J. Chabal, A. B. Gurevich, J. Sapjeta and R. L. Opila, J. Appl. Phys. 87(3), 1322 (2000).

195. *The Structure and composition of Wet Chemical Oxides: A photoemission and Infrared Study*, J. Eng, Jr., R. L. Opila, Y.J. Chabal, J. Rosamilia and Martin L. Green, Proc. Electrochemical Society Cleaning Technology and Semiconductor Device Manufacturing VI, 99(36), 553 (2000).

## 1999

194. *FT-IR Studies of Elementary Processes in Silicon Oxidation*, M.K. Weldon, K.T. Queeney and Y.J. Chabal, Proc. 12th Int. Conf. on Fourier Transform Spectroscopy, (Tokyo, Aug. 1999), K. Itoh and M. Tasumi eds, Waseda University Press, 153 (1999).

193. *X-ray Photoelectron Study of Gate Oxides and Nitrides* R.L. Opila, J.P. Chang, M. Du, J. Bevk, Y. Ma, M. Weldon, Y. Chabal and A. Gurevich, Solid State Phenomena. 65-66, 257 (1999).

192. *Spectroscopic Studies of H-decorated Interstitials and Vacancies in Thin Film Silicon Exfoliation* Y.J. Chabal, M.K. Weldon, Y. Caudano, B. Stefanov, K. Raghavachari, *Physica B* 274, 152 (1999).
191. *FTIR Studies of Si-SiO<sub>2</sub> Interface Structure and Growth*, K. T. Queeney, M.K. Weldon, Y.J. Chabal, B.B. Stefanov and K. Raghavachari, *Ab. Am. Chem. Soc.* 218, U462 (1999).
190. *Silicon Oxidation and Ultra-thin Oxide Formation on Silicon Studied by Infrared Absorption Spectroscopy*, K. Queeney, Y. Chabal, M. Weldon, K. Raghavachari, *Phys. Status Solidi A* 175, 77 (1999).
189. *Characterization and Production Metrology of Thin Transistor Gate Oxide Films*, A. Diebold, D. Venables, Y. Chabal, D. Muller, M. Weldon, E. Garfunkel, *Materials Science in Semiconductor Proc.* 2(2), 103 (1999).
188. *Mechanistic Studies of Silicon Oxidation*, M. K. Weldon, K. T. Queeney, Y. J. Chabal, B. B. Stefanov, K. Raghavachari, *J. Vac. Sci. Technol. B* 17(4), 1795 (1999).
187. *Anharmonic Adlayer Vibrations on the Si(111)-:H Surface*, R. Honke, P. Jakob, Y.J. Chabal, A. Dvorak, S. Tausendpfund, W. Stigler, P. Pavone, A.P. Mayer and U. Schroder, *Phys. Rev. B* 59(16), 10996 (1999).
186. *Infrared Absorption studies of wet chemical oxides: Thermal evolution of impurities*, Y.J. Chabal, M.K. Weldon, A.B. Gurevich, and S.B. Christman, *Solid State Phenomena* 65-66, 253 (1999).
185. *The role of implantation damage in the production of silicon-on-insulator films by co-implantation of He<sup>+</sup> and H<sup>+</sup>*, V.C. Venezia, T.E. Haynes, A. Agarwal, D.J. Eaglesham, O.W. Holland, M.K. Weldon, and Y.J. Chabal, *ECS Proc. Silicon Materials Science and Technology*, 2, 1385 (1998).
184. *Thermal evolution of impurities in wet chemical oxides*, A.B. Gurevich, M.K. Weldon, Y.J. Chabal, and R.L. Opila, *Appl. Phys. Lett.* 74(9), 1257 (1999).
183. *The Hydrogen-induced Exfoliation of Silicon*, M.K. Weldon and Y.J. Chabal, *EMIS Datareviews Series 20 in Properties of Crystalline Silicon* R. Hull ed, 20, 942 (1999).
182. *The Physics and Chemistry of Silicon Wafer Bonding*, M.K. Weldon and Y.J. Chabal, *EMIS Datareviews Series 20 in Properties of Crystalline Silicon*, R. Hull ed, 20, 905 (1999).
181. *Passivation of crystalline silicon surfaces* Y.J. Chabal, *EMIS Datareviews Series 20 in Properties of Crystalline Silicon* R. Hull ed, 20, 211 (1999).
180. *Molecules at surfaces and interfaces studied using vibrational spectroscopies and related techniques*, P. Dumas, M.K. Weldon, Y.J. Chabal and G.P. Williams, *Surf. Rev. Lett.* 6(2), 225 (1999).

## 1998

179. *Heterogeneous nucleation of oxygen on silicon: hydroxyl-mediated inter-dimer coupling on Si(100)-(2x1)*, A.B. Gurevich, B.B. Stefanov, M.K. Weldon, Y.J. Chabal, and K. Raghavachari, Phys. Rev. B 58(20), R13434 (1998).
178. *Initial stage of the growth of Fe on Si(111)(1x1)*, H. M.G. Martin, J. Avila, M. Gruyters, C. Teodorescu, P. Dumas, Y.J. Chabal and M.C. Asensio, Appl. Surf. Sci. 123, 156 (1998).
177. *Hydrogen structures in heavily hydrogenated crystalline and amorphous silicon*, W.B. Jackson, A. Franz, Y.J. Chabal, M.K. Weldon, H-C. Jin, and J.R. Abelson, MRS Proc. (1998).
176. *Novel co-sputtered fluorinated amorphous carbon films for sub 0.25 micron low K damascene multilevel interconnect applications*, W. Zhu, C.S. Pai, H.E. Bair, H.W. Krauter, R.L. Opila, B.S. Dennis, A. Pinczuk, Y. J. Chabal, G. Grundmeier, J.E. Graebner, K.P. Cheung, F.C. Schilling, C.B. Case, R. Liu, and S. Jin, IEDM Proc., p.845 (1998).
175. *Intermixing at the Tantalum Oxide/Silicon interface in Gate Dielectric Structures*, G.B. Alers, D.J. Werder, Y.J. Chabal, H.C. Lu, E.P. Gusev, E. Garfunkel, T. Gustafsson, R. Urdahl, Appl. Phys. Lett. 73(11) , 1517 (1998).
174. *Mechanism of Silicon Exfoliation induced by Hydrogen/Helium co-implantation*, M.K. Weldon, M. Collot, Y.J. Chabal, V.C. Venezia, A. Agarwal, T.E. Haynes, D.J. Eaglesham, S.B. Christman, and E.E. Chaban, Appl. Phys. Lett. 73(25), 3721 (1998).
173. *Spectroscopic and theoretical investigations of hydrogen-induced exfoliation of silicon: Si-H bending modes* Y. Caudano, M.K. Weldon, Y.J. Chabal, B.B. Stefanov, K. Raghavachari, D.C. Jacobson, S.B. Christman and E.E. Chaban. in Proc. Fourth International Symposium on Semiconductor Wafer Bonding: Science, Technology, and Applications. Electrochem. Soc., p. 365 (1998).
172. *Silicon Epoxide: Unexpected Intermediate during Silicon Oxide Formation*, B.B. Stefanov, A. Gurevich, M. K. Weldon, K. Raghavachari, and Y.J. Chabal, Phys. Rev. Lett. 81(18), 3908 (1998).
171. *An Infrared Study of H<sub>8</sub>Si<sub>8</sub>O<sub>12</sub> Cluster Adsorption on Si(100) Surfaces*, J. Eng, K. Raghavachari, L.M. Struck, Y.J. Chabal, B.E. Bent, M.M. Banaszak-Holl, F.R. McFeely, A.M. Michaels, G.W. Flynn, S.B. Christman, E.E. Chaban, G.W. Williams, K. Radermacher, and S. Mantl, J. Chem. Phys. 108(20), 8680 (1998).
170. *Mechanistic Studies of Silicon Wafer Bonding and Layer Exfoliation* M.K. Weldon, V. E. Marsico, Y.J. Chabal, A. Agarwal, D. Eaglesham, J. Sapjeta, W. L. Brown, D.C. Jacobson, Y. Caudano, S.B. Christman and E.E. Chaban, Proc. Electrochemical Society, p. 229 (1998).

## 1997

169. *A mid- to far-infrared study of H<sub>8</sub>Si<sub>8</sub>O<sub>12</sub> clusters on Si(100)*, J. Eng, L.M. Struck, A.M. Michaels, Y.J. Chabal and B.E. Bent, Proc. Am. Chem. Soc. S 213, 215- COLL Part I (1997).

168. *Infrared Spectroscopy of Covalently Bonded Species on Silicon Surfaces: Deuterium, Chlorine and Cobalt Tetracarbonyl*", H. Luo, C.E.D. Chidsey and Y.J. Chabal, MRS Proc., 477, 415 (1997).
167. *Efficient Production of Silicon-on-Insulator Films by co-implantation of He+ with H*", A. Agarwal, T. E. Haynes, V. C. Venezia, D. J. Eaglesham, M. K. Weldon, Y. J. Chabal, O. W. Holland, Proc. of the 1997 IEEE International SOI Conference, p.44 (1997).
166. *Mechanism of Silicon Exfoliation by Hydrogen Implantation and He, Li and Si Co-Implantation*", M. K. Weldon, V. E. Marsico, Y. Chabal, M. Collot, Y. Caudano, S. B. Christman, E. E. Chaban, D. C. Jacobson, W. L. Brown, J. Sapjeta, C.-M. Hsieh, C. A. Goodwin, A. Agarwal, T. E. Haynes, W. B. Jackson, Proc. of the 1997 IEEE International SOI Conference, p.124 (1997).
165. *Initial H<sub>2</sub>O-induced Oxidation of Si(100)-(2x1)*, M.K. Weldon, B.B. Stefanov, K. Raghavachari and Y.J. Chabal, Phys. Rev. Lett. 79(15), 2851 (1997).
164. *On the Mechanism of hydrogen-induced exfoliation of Silicon*, M.K. Weldon, V.E. Marsico, Y.J. Chabal, A. Agarwal, D.J. Eaglesham, J. Sapjeta, W.L. Brown, D.C. Jacobson, Y. Caudano, S. B. Christman, and E.E. Chaban, J. Vac. Sci. Technol. B 15(4), 1065 (1997).
163. *Applications of Infrared Absorption Spectroscopy to the Microelectronic Industry*, Y. J. Chabal, M. K. Weldon, and V. E. Marsico, J. Phys. IV 7(C6), 3 (1997).
162. *A Vibrational Study of Ethanol Adsorption on Si(100)*, J. Eng, K. Raghavachari, L.M. Struck, Y.J. Chabal, B.E. Bent, G.W. Flynn, S.B. Christman, E.E. Chaban, G.P. Williams, K. Radermacher, and S. Mantl, J. Chem. Phys. 106(23), 9889 (1997).
161. *Vibrational Study of silicon Oxidation: H<sub>2</sub>O on Si(100)*, L.M. Struck, J. Eng, Jr., B.E. Bent, Y.J. Chabal, S.B. Christman, E.E.Chaban, K. Raghavachari, A.E. White, G.P. Williams, K. Radermacher, and S. Mantl, Surf. Sci. 380(2-3), 444 (1997).
160. *Adsorption and Reactivity of NO on Cu(111): a Synchrotron Infrared Reflection Absorption Spectroscopic Study*, P. Dumas, M. Suhren, Y. J. Chabal, C. J. Hirschmugl, and G. P. Williams, Surf. Sci. 371(2-3), 200 (1997).

## 1996

159. *Vibrational Study of C<sub>60</sub> Overlayers on H/Si(111)-(1x1)*, P. Dumas, M. Gruyters, P. Rudolf, Y. He, L.-M. Yu, G. Gensterblum, R. Caudano, and Y. J. Chabal, Surf. Sci. 368, 330 (1996).
158. *Infrared Spectroscopy as a Probe of Fundamental Processes in Microelectronics: Silicon Wafer Cleaning and Bonding*, M. K. Weldon, V. E. Marsico, Y. J. Chabal, D. R. Hamann, S. B. Christman, and E. E. Chaban, Surf. Sci. 368, 163 (1996).
157. *Mechanistic Studies of Hydrophilic Wafer Bonding and Si Exfoliation of SOI Fabrication*, M. K. Weldon, Y. J. Chabal, S. B. Christman, E. E. Chaban, D. C. Jacobson, A. J. Sapjeta, A. Pinczuk, B. S. Dennis, A. Mills, C. A. Goodwin, and C.-M. Hsieh, Proc. of the 1996 IEEE International SOI Conference, p. 150 (1996).

156. *Physics and Chemistry of Silicon Wafer Bonding Investigated by Infrared Absorption Spectroscopy*, M. K. Weldon, Y. J. Chabal, S. B. Christman, E. E. Chaban, L. C. Feldman, and D. R. Hamann, *J. Vac. Sci. Technol. B.* 14(4), 3095 (1996)
155. *Infrared Spectroscopy of Oxide Formation at Silicon Interfaces*, M. K. Weldon, Y. J. Chabal, S. B. Christman, E.E. Chaban, L. C. Feldman, C. A. Goodwin and C. M. Hsieh, *Electrochemical Society Proceedings*, 96, 121 (1996).
154. *Vibrational Interactions at Surfaces: H<sub>2</sub>O on Si(100)*, K. Raghavachari, L.M. Struck and Y.J. Chabal, *Chem. Phys. Lett.* 252(3-4), 230 (1996).

## 1995

153. *Probing the interface of bonded silicon wafers with infrared Absorption Spectroscopy*, Y.J. Chabal, D. Feijoo, S.B. Christman, and C.A. Goodwin, *Electroch. Soc. Proc.* 95-97, 305 (1995).
152. *The Role of Hydrogen in Silicon Wafer Bonding: An infrared Study*, M. K. Weldon, Y. J. Chabal, S.B. Christman, J. Bourcereau, C.A. Goodwin, C-M. Hsieh, S. Nakahara, R.H. Shanaman, W.G. Easter, and L.C. Feldman, *Proc. 1995 IEEE International SOI Conference*, p. 168 (1995).
151. *Silicon Surface Chemistry by IR Spectroscopy in the Mid- to Far-IR Region: H<sub>2</sub>O and Ethanol on Si(100)*, L.M. Struck, J. Eng, Jr., B.E. Bent, Y.J. Chabal, G.P. Williams, A.E. White, S.B. Christman, E.E. Chaban, K. Raghavachari, G.W. Flynn, K. Radermacher, and S. Mantl, *MRS Symp. Proc.* 386, 395 (1995).
150. *Size, Shape and Composition of Luminescent Species in Oxidized Si Nanocrystals and H-passivated Porous Si*, M.A. Marcus, S. Schuppler, S.L. Friedman, D.L. Adler, Y.-H. Xie, F.M. Ross, Y.J. Chabal, T.D. Harris, L. E. Brus, W.L. Brown, E.E. Chaban, P.J. Szajowski, S.B. Christman, and P. H. Citrin, *Phys. Rev. B* 52(7), 4910 (1995).
149. *The atomic-scale Removal Mechanism during Chemo-mechanical Polishing of Si(100) and Si(111)*, G.J. Pietsch, Y.J. Chabal, and G.S. Higashi, *Surf. Sci.* 333, 395 (1995).
148. *Real-Time in-Situ Monitoring of Surfaces During Glow-Discharge Processing - N<sub>h</sub>3 and H-2 Plasma Passivation of Gaas*, E.S. Aydil, Z.H. Zhou, R.A. Gottscho and Y.J. Chabal, *J. Vac. Sci. Technol. B* 13(2), 258 (1995).
147. *Infrared Absorption Spectroscopy of Si(100) and Si(111) Surfaces after Chemo-mechanical Polishing*, G. J. Pietsch, Y. J. Chabal and G. S. Higashi, *J. Appl. Phys.* 78(3), 1650 (1995).
146. *Characterization of Silicon Surfaces and Interfaces by Optical Vibrational Spectroscopy*, Y. J. Chabal, M. A. Hines, and D. Feijoo, *J. Vac. Sci. Technol. A* 13(3), 1719 (1995).

145. *Vibrational Characterization and Electronic Properties of the Long Range Ordered, Ideally Hydrogen-Terminated Si(111)*, P. Dumas, Y. J. Chabal, R. Gunther, A. Taleb-Ibrahimi, and A. Petroff, *Progress in Surf. Sci.* 48(1-4), 313 (1995).

144. *X-Ray Absorption Spectroscopy from H-Passivated Porous Si and Oxidized Si Nanocrystals*, S. Schuppler, S. L. Friedman, M. A. Marcus, D. L. Adler, Y.-H. Xie, F. M. Ross, T. D. Harris, W. L. Brown, Y. J. Chabal, P. J. Szajowski, E. E. Chaban, L. E. Brus, and P. H. Citrin, *MRS Proc.* 358, 113 (1995).

143. *Size, Shape, and Crystallinity of Luminescent Structures in Oxidized Si Nanoclusters and H-Passivated Porous Si*, S. Schuppler, S. L. Friedman, M. A. Marcus, D. L. Adler, Y.-H. Xie, F. M. Ross, T. D. Harris, W. L. Brown, Y. J. Chabal, P. J. Szajowski, E. E. Chaban, L. E. Brus, and P. H. Citrin, *MRS. Proc.* 358, 407 (1995).

## 1994

142. *Real-Time In Situ Monitoring of Surfaces During Glow Discharge Processing: NH<sub>3</sub> and H<sub>2</sub> Plasma Passivation of GaAs*, R. A. Gottscho, E. S. Aydil, Z. H. Zhou, and Y. J. Chabal, *J. Vac. Sci. Technol. B* 13(2), 258 (1994).

141. *Real Time Monitoring of Surface Chemistry During Plasma Processing*, E.S. Aydil, R.A. Gottscho and Y.J. Chabal, *Pure and Appl. Chem.* 66(6), 1381 (1994).

140. *Spectroscopic Characterization of Model Surfaces: Chemically Prepared, Ideally Hydrogen-Terminated Si(111)*, Y. J. Chabal and P. Dumas, *Physicalia Mag.* 16, 183 (1994).

139. *Dimensions of Luminescent Oxidized and Porous Silicon Structures*, S. Schuppler, S. L. Friedman, M. A. Marcus, D. L. Adler, Y. Xie, T. D. Harris, W. L. Brown, Y. J. Chabal, L. E. Brus, P. H. Citrin, and F. M. Ross, *Phys. Rev. Lett.* 72(16), 2648 (1994).

138. *High-Resolution Photoemission Spectroscopy of Flat and Stepped Non Reconstructed H/Si(111) Surfaces*, A. Taleb-Ibrahimi, R. Gunther, P. Dumas, G. Indlekofer, Y.J. Chabal and Y. Petroff, *J. Phys. IV* 4(C9), 89 (1994).

137. *Surface Vibrational Spectroscopies for Silicon Processing*, Y. J. Chabal, *Proc. International Conference on Advanced Microelectronic Devices and Processing*, p.69 (1994).

136. *Silicon Wafer Bonding Studied by Infrared Absorption Spectroscopy*, D. Feijoo, Y. J. Chabal, and S. B. Christman, *Appl. Phys. Lett.* 65(20), 2548 (1994).

135. *Measuring the Structure of Etched Silicon Surfaces with Raman Spectroscopy*, M. A. Hines, Y. J. Chabal, T. D. Harris, and A. L. Harris, *J. Chem. Phys.* 101(9), 8055 (1994).

134. *Transient Vibrational Mode Renormalization in Dipole-Coupled Adsorbates at Surfaces*, K. Kuhnke, A. L. Harris, Y.J. Chabal, P. Jakob and M. Morin, *J. Chem. Phys.* 100(9), 6896 (1994).

133. *Low Frequency Dynamics of CO/Cu - Breakdown of Born-Oppenheimer Approximation*, C. Hirschmugl, G.P. Williams, Y.J. Chabal and F.M. Hoffmann, J. Vac. Sci. Technol. A 12(4), 2229 (1994).
132. *Low Temperature Formation of Si(111)7x7 Surfaces from Chemically Prepared H/Si(111)-(1x1) Surfaces*, Le Thanh Vinh, M. Eddrief, A. Sebenne, P. Dumas, A. Taleb-Ibrahimi, R. Gunther, Y. J. Chabal, and A. Derrien, Appl. Phys. Lett. 64(24), 3308 (1994).
131. *Infrared Spectroscopy of Semiconductor Surface Vibrations*, Y.J. Chabal in *Handbook of Semiconductors, Volume 2: Optical Properties*, M. Balkanski ed, Elsevier Science, 2, 187 (1994).
130. *Chemo-Mechanical Polishing of Silicon: Surface Termination and Mechanism of Removal*, G.J. Pietsch, G.S. Higashi and Y.J. Chabal, Appl. Phys. Lett. 64(23), 3115 (1994).
129. *Monohydride Structures on Chemically Prepared Silicon Surfaces*, P. Jakob, Y. J. Chabal, K. Kuhnke and S. B. Christman, Surf. Sci. 302(1-2), 49 (1994).

### 1993

128. *Raman Studies of Steric Hindrance and Surface Relaxation on Stepped H-terminated Silicon Surfaces*, M. A. Hines, Y. J. Chabal, T. D. Harris, and A. L. Harris, Phys. Rev. Lett. 71(14), 2280 (1993).
127. *Vibrational Energy Flow at Stepped H/Si(111): Phonons, Dipoles, Screening and All That*, A. L. Harris, K. Kuhnke, M. Morin, P. Jakob, N. J. Levinos and Y. J. Chabal, Faraday Discuss. 96, 217 (1993).
126. *Looking Up the Down Staircase: Surface Raman Spectroscopy as Probe of Adsorbate Orientation*, M. A. Hines, T. D. Harris, A. L. Harris, and Y. J. Chabal, J. Electron Spectro. Rel. Phenom. 64/65, 183 (1993).
125. *Dipole Forbidden Vibrational Modes for NO and CO on Cu observed in the Far Infrared*, C.J. Hirschmugl, P. Dumas, Y.J. Chabal, F.M. Hoffmann, M. Suhren and G.P. Williams, J. Electron Spectro. Rel. Phenom. 64/65, 67 (1993).
124. *The Role of Kinks in the Si-H Vibrational Spectrum of Vicinal Si(111)-112 Surfaces*, P. Jakob, Y. J. Chabal, and K. Raghavachari, J. Electron Spectro. Rel. Phenom. 64/65, 59 (1993).
123. *Interadsorbate Vibrational Energy Flow on Stepped Vicinal H/Si(111) Surfaces*, M. Morin, K. Kuhnke, P. Jakob, Y. J. Chabal, N. J. Levinos, and A. L. Harris, J. Electron Spectro. Rel. Phenom. 64/65, 11 (1993).
122. *The Influence of HF, OH and Dissolved O<sub>2</sub> in Silicon Surface Chemical Cleaning*, G. S. Higashi, Y. J. Chabal, K. Raghavachari, R. S. Becker, M. P. Green, K. Hanson, T. Boone, J. H. Eisenberg, S. F. Shive, G. N. DiBelo and K. L. Fulford, Proc. Fourth International Symposium on ULSI scientific technology (1993).

121. *First-Principles Study of the Etching Reactions of HF and H<sub>2</sub>O*, K. Raghavachari, G. S. Higashi, Y. J. Chabal, and G. W. Trucks, MRS Symp. Proc. 315, 437 (1993).
120. *Enhanced Cohesion of Photo-Oxygenated Fullerene Films: A New Opportunity for Lithography*, A. F. Hebard, C. B. Eom, R. M. Fleming, Y. J. Chabal, A. J. Muller, S. H. Glarum, G. J. Pietsch, R. C. Haddon, A. M. Muzsca, M. A. Paczkowski and G. P. Kochanski, Appl. Phys. A 57(3), 299 (1993).
119. *Real Time In Situ Monitoring of Surface Reactions During Plasma Passivation of GaAs*, E. S. Aydil, Z. Zhen Hong, R. A. Gottscho, and Y. J. Chabal, ECS Proc. (1993).
118. *Vibrational Energy Transfer between Adsorbate Modes: Picosecond Dynamics on Stepped H/Si(111) Surfaces*, K. Kuhnke, M. Morin, P. Jakob, N.J. Levinos, Y.J. Chabal and A.L. Harris, J. Chem. Phys. 99(8), 6114 (1993).
117. *Real Time in situ Monitoring of Room temperature Silicon Surface Cleaning using Hydrogen and Ammonia Plasmas*, Z. Zhen-Hong, E.S. Aydil, R.A. Gottscho, Y.J. Chabal and R. Reif, J. Electrochem. Soc. 140(11), 3316 (1993).
116. *Real Time in situ Monitoring of Surface Reactions During Plasma Passivation of GaAs*, E.S. Aydil, K. Giapis, Zhen-Hong, Zhou, J.A. Gregus, R.A. Gottscho and Y.J. Chabal, Appl. Phys. Lett. 62(24), 3156 (1993).
115. *Discrete Nature of Inhomogeneity on Stepped H/Si(111) Surfaces: Spectroscopic Identification of Individual Terrace Sizes*, P. Jakob, Y.J. Chabal, K. Raghavachari and S.B. Christman, Phys. Rev. B 47(11), 6839 (1993).
114. *Electronic Structure and its Dependence on Local Order for H/Si(111)-(1x1) Surfaces*, K. Hricovini, R. Gunther, P. Thiry, A. Taleb-Ibrahimi, G. Indlekofer, J.E. Bonnet, P. Dumas, Y. Petroff, X. Blase, X. Zhu, S.G. Louie, Y.J. Chabal and P.A. Thiry, Phys. Rev. Lett. 70(13), 1992 (1993).
113. *Imperfections on the Chemically Prepared, Ideally H-terminated Si(111)-(1x1)*, P. Jakob, Y. J. Chabal, K. Raghavachari, P. Dumas and S.B. Christman, Surf. Sci. 285(3), 251 (1993).
112. *Surface Chemical Reactions Studied with Scanning Tunneling Microscopy*, R.S. Becker, A.J. Becker, G.S. Higashi and Y.J. Chabal, Scanning Microscopy Suppl. 7, 269 (1993).
111. *Infrared Spectroscopy of Semiconductor Surfaces: H-terminated Silicon Surfaces*, Y. J. Chabal, J. Molecular Structure 292, 65 (1993).
110. *Studies of Semiconductor Surfaces: Vibrational Spectroscopy of Adsorbates*, Y. J. Chabal, in *Internal Reflection Spectroscopy: Theory and Applications*, F. M. Mirabella, Ed., Marcel Dekker, p.791 (1993).
109. *Infrared Spectroscopy of H-Terminated Silicon Surfaces*, Y. J. Chabal, A. L. Harris, K. Raghavachari, and J. C. Tully, International Journal of Modern Physics B 7(4), 1031 (1993).

108. *Silicon surface chemical composition and morphology*, G. S. Higashi and Y. J. Chabal, Chapter in *Handbook of Silicon Wafer Cleaning Technology: Science, Technology, and Applications*, Werner Kern ed, Noyes Pub., p.433 (1993).

107. *Vibrational Properties of H-Si(111)-(1x1) Surfaces: Infrared Absorption and Electron Energy Loss Spectroscopic Studies*, P. Dumas, Y. J. Chabal, and P. Jakob, *Appl. Surf. Sci.* 66(1-4), 580 (1993).

106. *Step Relaxation and Surfaces Stress at H-Terminated Vicinal Si(111)*, K. Raghavachari, P. Jakob, and Y.J. Chabal, *Chem. Phys. Lett.* 206(1-4), 156 (1993).

## 1992

105. *Etching of Silicon (111) and (100) Surfaces in HF Solutions: H-Termination, Atomic Structure and Overall Morphology*, Y. J. Chabal, *MRS. Symp. Proc.* 259, 349 (1992).

104. *Vibrational Energy Transfer on Hydrogen-terminated Vicinal Si(111) Surfaces: Interadsorbate Energy Flow*, M. Morin, P. Jakob, N. J. Levinos, Y. J. Chabal and A. L. Harris, *J. Chem. Phys.* 96(8), 6203 (1992).

103. *Electron Energy Loss Spectroscopy of H-Terminated Si(111) and Si(100) Prepared by Chemical Etching*, P. Dumas and Y. J. Chabal, *J. Vac. Sci. Technol. A* 10(4), 2160 (1992).

102. *Kinetic Model of the Chemical Etching of Si(111) Surfaces by Buffered HF-Solutions*, P. Jakob, Y. J. Chabal, K. Raghavachari, R. S. Becker, and A. J. Becker, *Surf. Sci.* 275, 407 (1992).

101. *Morphology of Hydrogen-Terminated Si(111) and Si(100) Surfaces Upon Etching in HF and Buffered-HF Solutions*, P. Dumas, Y. J. Chabal, and P. Jakob, *Surf. Sci.* 269(3), 867 (1992).

100. *Conduction-Bands Asymmetry of Si(111) Revealed by Inverse Photoemission*, S. Bouzidi, F. Coletti, J. M. Debever, P. A. Thiry, P. Dumas, and Y. J. Chabal, *Surf. Sci.* 269/270, 829 (1992).

99. *Inverse Photoemission Study of the Unreconstructed, Ideally H-Terminated Si(111) Surface*, S. Bouzidi, F. Coletti, J. M. Debever, P. A. Thiry, P. Dumas, and Y. J. Chabal, *Phys. Rev. B* 45(3), 1187 (1992).

## 1991

98. Comment on '*Mechanism of HF etching of silicon surfaces: a theoretical understanding of hydrogen passivation*' (and reply), E. Sacher, A. Yelon, G.W. Trucks, K. Raghavachari, G.S. Higashi and Y.J. Chabal, *Phys. Rev. Lett.* **66**(12), 1647 (1991)

97. *Amortissement des vibrations d'atomes adsorbés sur une surface*, P. Guyot-Sionnest, P. Dumas and Y. J. Chabal, *Le Courrier du CNRS (1991 Images de la physique)*, 77 (Supplément), 50 (1991).
96. *Line Shape Analysis of the Si-H Stretching Mode of the Ideally H-Terminated Si(111) Surface: The Role of Dynamical Dipole Coupling*, P. Jakob, Y.J. Chabal and K. Raghavachari, *Chem. Phys. Lett.* 187(3), 325 (1991).
95. *Influence of the Silicon Oxide on the Morphology of HF-Etched Si(111) Surfaces: Thermal Versus Chemical Oxide*, P. Jakob, P. Dumas, and Y. J. Chabal, *Appl. Phys. Lett.* 59(23), 2968 (1991).
94. *Electron Energy Loss Characterization of the H-Terminated Si(111) and Si(100) Surfaces Obtained by Etching in NH<sub>4</sub>F*, P. Dumas and Y. J. Chabal, *Chem. Phys. Lett.* 181(6), 537 (1991).
93. *Chemical Etching of Vicinal Si(111): Dependence of the Surface Structure and the Hydrogen Termination on the pH of the Etching Solutions*, P. Jakob and Y. J. Chabal, *J. Chem. Phys.* 95(4), 2897 (1991).
92. *Comparison of Si(100) Surfaces Prepared using Aqueous Solutions of NH<sub>4</sub>F versus HF*, G.S. Higashi, R.S. Becker, Y.J. Chabal and A.J. Becker, *Appl. Phys. Lett.* 58(15), 1656 (1991).
91. *Infrared Spectroscopy of Hydrogen on Silicon Surfaces*, Y.J. Chabal, *Physica B* 170(1-4), 447 (1991).
90. *Vibrational Dynamics of the Ideally H-Terminated Si(111) Surface*, Y. J. Chabal, P. Dumas, G. Guyot-Sionnest, and G. S. Higashi, *Surf. Sci.* 242(1-3), 524 (1991).
89. *High Resolution Surface Infrared Spectroscopy: H Vibration on a Si(111) Surface*, P. Dumas and Y.J. Chabal, *FT-IR Spectral Lines* 12, 6 (1991).
88. *Phase Diagram, Surface Structures and Adsorbate Bonding in the H/Mo(100) Chemisorption System*, J.A. Prybyla, P.J. Estrup and Y.J. Chabal, *J. Chem. Phys.* 94(9), 6274 (1991).

## 1990

87. *CO Diffusion on Pt(111) with Time-Resolved Infrared Pulsed Molecular Beam Methods: Critical Tests and Analysis*, J.E. Reutt-Robey, D.J. Doren, Y.J. Chabal and S. B. Christman, *J. Chem. Phys.* 93(12), 9113 (1990).
86. *Adsorption States and Orientation of N-alkyl Anhydride Molecules on oxidized Aluminum surfaces*, K. Berrada, P. Dumas, Y.J. Chabal and P. Dubot, *J. Electron Spectr. Rel. Phenom.* 54-55, 1153 (1990).
85. *Inelastic Helium Scattering Measurements of Surface Phonons in H-terminated Si(111)-(1x1)*, R.B. Doak, Y.J. Chabal, G.S. Higashi and P. Dumas, *J. Electron Spectr. Rel. Phenom.* 54-55, 291 (1990).
84. *Adsorbate-Substrate Resonant Interactions observed for CO on Cu(100) and Cu(111) in the Far-Infrared using Synchrotron Radiation*, C.J. Hirschmugl, G.P.

Williams, F.M. Hoffmann and Y.J. Chabal, J. Electron Spectr. Rel. Phenom. 54-55, 109 (1990).

83. *Lineshape of the Si-H Stretching Vibration for the Ideally H-terminated Si(111)1x1*, P. Dumas, Y.J. Chabal and G.S. Higashi, J. Electron Spectr. Rel. Phenom. 54-55, 103 (1990).

82. *Lifetime of an Adsorbate-Substrate Vibration Measured by Sum Frequency Generation: H on Si(111)*, P. Guyot-Sionnest, P. Dumas and Y.J. Chabal, J. Electron Spectr. Rel. Phenom. 54-55, 27 (1990).

81. *Lifetime of an Adsorbate-Substrate Vibration: H on Si(111)*, P. Guyot-Sionnest, P. Dumas, Y.J. Chabal and G.S. Higashi, Proceedings of the 7th Ultrafast Phenomena Conference, Springer-Verlag, (1990).

80. *Atomic Scale Conversion of Clean Si(111):H-1x1 to Si(111)-2x1 by Electron-Stimulated Desorption*, R.S. Becker, G.S. Higashi, Y.J. Chabal and A.J. Becker, Phys. Rev. Lett. 65(15), 1917 (1990).

79. *Coupling of an Adsorbate Vibration to a Substrate Surface Phonon: H on Si(111)*, P. Dumas, Y. J. Chabal, and G. S. Higashi, Phys. Rev. Lett. 65(9), 1124 (1990).

78. *Mechanism of HF Etching of Silicon Surfaces: A theoretical Understanding of Hydrogen Passivation*, G. W. Trucks, K. Raghavachari, G. S. Higashi, and Y. J. Chabal, Phys. Rev. Lett. 65(4), 504 (1990).

77. *Adsorbate-Substrate Resonant Interactions Observed for CO on Cu(100) in the Far-IR*, C. J. Hirschmugl, G. P. Williams, F. M. Hoffmann, and Y. J. Chabal, Phys. Rev. Lett. 65(4), 480 (1990).

76. *Lifetime of an Adsorbate-Substrate Vibration: H on Si(111)*, P. Guyot-Sionnest, P. Dumas, Y. J. Chabal, and G. S. Higashi, Phys. Rev. Lett. 64(18), 2156 (1990).

75. *Oxidation of GaAs(110) with NO<sub>2</sub> : Infrared Spectroscopy*, A. vom Felde, K. Kern, G. S. Higashi, Y. J. Chabal, S. B. Christman, C. C. Bahr, and M. J. Cardillo, Phys. Rev. B 42(8), 5240 (1990).

74. *Low Temperature Adsorption and Reaction of NO on GaAs(110)*, K. Kern, Y. J. Chabal, G. S. Higashi, A. vom Felde and M. J. Cardillo, Chem. Phys. Lett. 168(2), 203 (1990).

73. *Monitoring Low Coverage Surface Chemistry and Bulk Transport: NO<sub>2</sub> Dissociation and Oxygen Penetration at a GaAs(110) Surface*, A. vom Felde, C. Bahr, K. Kern, G. S. Higashi, Y. J. Chabal, and M. J. Cardillo, Phys. Rev. B 42(10), 6865 (1990).

72. *Molecular Diffusion on Metal Surfaces: Time-Resolved Infrared Spectroscopy and other Techniques*, Y. J. Chabal, Vacuum 41(1-3), 70 (1990).

71. *Ideal Hydrogen Termination of the Si(111) Surface*, G. S. Higashi, Y. J. Chabal, G. W. Trucks, and K. Raghavachari, Appl. Phys. Lett. 56(7), 656 (1990).

## 1989

70. *Infrared Synchrotron Radiation Measurements at Brookhaven using a Nicolet 20F Spectrometer*, G. P. Williams, C. J. Hirschmugl, E. A. Sullivan, E. M. Kneedler, Y. J. Chabal, F. M. Hoffmann, and K. D. Moeller, FT-IR Spectral Lines 10, 5 (1989).
69. *Structure and Kinetics of Molecules at Surfaces*, Y. J. Chabal, 7th International Conference on Fourier Transform Spectroscopy, D. G. Cameron ed, Proc. SPIE, 1145, 34 (1989).
68. *Infrared Spectroscopy of Si(111) and Si(100) Surfaces after HF Treatment: Hydrogen Termination and Surface Morphology*, Y. J. Chabal, G. S. Higashi and K. Raghavachari, Proc. Materials Research Society: Chemical Perspectives of Microelectronic Materials, 131, 191 (1989).
67. *Infrared Spectroscopy of Si(111) and Si(100) Surfaces after HF Treatment: Hydrogen Termination and Surface Morphology*, Y. J. Chabal, G. S. Higashi and K. Raghavachari, J. Vac. Sci. Technol. A 7(3), 2104 (1989).
66. *CO Diffusion on Pt(111) by Time-Resolved Surface Infrared Spectroscopy*, J. E. Reutt-Robey, Y. J. Chabal, D. J. Doren and S. B. Christman, J. Vac. Sci. Technol. A 7(3), 2227 (1989).
65. *Coherence Effects in Long Wavelength Infrared Synchrotron Radiation Emission*, G. P. Williams, C. J. Hirschmugl, E. M. Kneedler, P. Z. Takacs, M. Shleifer, Y. J. Chabal and F. M. Hoffman, Phys. Rev. Lett. 62(3), 261 (1989).

## 1988

64. *Microscopic CO Diffusion on a Pt(111) Surface by Time-Resolved Infrared Spectroscopy*, J. E. Reutt-Robey, D. J. Doren, Y. J. Chabal and S. B. Christman, Phys. Rev. Lett. 61(24), 2778 (1988).
63. *Characteristics and performance of the National Synchrotron Light Source infrared beamline* G.P. Williams, C.J. Hirschmugl, D.P. Siddons, E.A. Sullivan, K.D. Moeller, P. Petrone, E. Angelides, Y.J. Chabal and F.M. Hoffmann. in Proc. of Spie - the International Society for Optical Engineering, 1039, 263-264 (1988).
62. *Review of Semiconductor Interfaces: Formation and Properties*, Y. J. Chabal, Opt. Engr. 27, SR-153 (1988).
61. *Infrared Spectroscopy of Si(111) Surfaces after HF Treatment: Hydrogen Termination and Surface Morphology*, V. A. Burrows, Y. J. Chabal, G. S. Higashi, K. Raghavachari, and S. B. Christman, Appl. Phys. Lett. 53(11), 998 (1988).
60. *Coupling of H Vibration to Substrate Electronic States in Mo(100)-p(1x1)H and W(100)-p(1x1)H -Example of strong Breakdown of Adiabaticity*, J. E. Reutt, Y. J. Chabal, and S. B. Christman, Phys. Rev. B 38(5), 3112 (1988).
59. *Surface Infrared Spectroscopy*, Y. J. Chabal, Surf. Sci. Reports 8(5-7), 211 (1988).

58. *Chemistry, Structure, Dynamics and Kinetics of Adsorbates on Surfaces by FTIR*, Y. J. Chabal, Proc. Third International Conference on Laser Science, 172, 471 (1988).
57. *Laser-Assisted Deposition of Fe and W: Photodecomposition of Fe(CO)<sub>5</sub> and W(CO)<sub>6</sub> on Si(111) 7x7*, J. R. Swanson, C. M. Friend, and Y. J. Chabal, Laser and particle beam chemical processing for microelectronics, MRS symp. 101, 201 (1988).
56. *Optical spectroscopy at Surfaces*, Y. J. Chabal, Science 239, G195 (1988).
55. *Hydrogen Phonon Spectra on Pt(111) at T=100K 160K*, J. E. Reutt, Y. J. Chabal, and S. B. Christman, J. Vac. Sci. Technol. A 6, 816 (1988).
54. *Infrared Spectroscopy of Semiconductor Surfaces*, Y. J. Chabal, in *Chemistry and Physics of Solid Surfaces VII*, R. Vanselow and R.F. Howe eds, 10, 108 (1988).

## 1987

53. *Hydrogen Phonon Spectra on Transition Metal Surfaces: Infrared Reflection - Absorption Investigations of Mo(100), W(100), and Pt(111)*, J. E. Reutt, Y. J. Chabal, and S. B. Christman, J. Electron Spectr. Rel. Phenom. 44(1), 325 (1987).
52. *Hydrogen-Induced Reconstruction of W(100) and Mo(100) by Surface Infrared Spectroscopy*, Y. J. Chabal, S. B. Christman, J. J. Arrecis, J. A. Prybyla and P. J. Estrup, J. Electron Spectr. Rel. Phenom. 44(1), 17 (1987).
51. *Laser-assisted Deposition of Iron on Si(111)-(7x7): The Mechanism and Energetics of Fe(CO)<sub>5</sub> Decomposition* J. R. Swanson, C. M. Friend and Y. J. Chabal, J. Chem. Phys. 87(8), 5028 (1987).
50. *Deposition of iron on Si(111)-(7x7): photo- and electron-assisted decomposition of Fe(CO)<sub>5</sub> in Photon, Beam, and Plasma Stimulated Chemical Processes at Surfaces*. J.R. Swanson, C.M. Friend and Y.J. Chabal. Symp. MRS, p.559 (1987)
49. *Properties of Adsorbed Atoms and Molecules by Surface Infrared Spectroscopy*, Y. J. Chabal, Proc. 10th International Conference on Chemical Vapor Deposition, 87-88, 1 (1987).
48. *Vibrational Properties at Semiconductor Surfaces and Interfaces*, Y. J. Chabal, in *Semiconductor Interfaces: Formation and Properties*, G. LeLay and J. Derrien eds, Springer-Verlag ( Springer Proceed. in Phys.) 22, 301(1987).
47. *Reconstructive Phase Transitions and Effective Adsorbate-Adsorbate Interactions: H/Mo(100) and H/W(100)*, J. A. Prybyla, P. J. Estrup, S. C. Ying, Y. J. Chabal and S. B. Christman, Phys. Rev. Lett. 58(18), 1877 (1987).
46. *Self-sustained Kinetic Oscillations in the Catalytic CO Oxidation on Platinum*, Y. J. Chabal, S. B. Christman, V. A. Burrows, N. A. Collins, S. Sundaresan, in "Kinetics of Interface Reactions," M. Grunze and H. J. Kreuzer eds, Springer-Verlag (Springer Series in Surf. Sci.), 8, 285 (1987)
45. *Molecular Hydrogen in a-Si:H*, Y. J. Chabal and C. K. N. Patel, Rev. Mod. Phys. 59(4), 835 (1987).

44. *Studies on Self-sustained Reaction-rate Oscillations: III The Carbon Model*, N. A. Collins and S. Sundaresan and Y. J. Chabal, Surf. Sci. 180(1), 136 (1987).
43. *Reconstruction, adsorbate bonding, and desorption kinetics of H/Mo (100)* J.A. Prybyla, P.J. Estrup and Y.J. Chabal. in *10th International Vacuum Congress (IVC-10), 6th International Conference on Solid Surfaces (ICSS-6) and 33rd National Symposium of the American Vacuum Society*, J. Vac. Sci. Technol. A, 5(4), 791 (1987).
42. *Studies on Self-sustained Reaction-rate Oscillations: II The Rate of Carbon and Oxides in the Oscillatory Oxidation of Carbon Monoxide on Platinum*, V. A. Burrows, S. Sundaresan, Y. J. Chabal and S. B. Christman, Surf. Sci. 180(1), 110 (1987).
41. *Reconstruction, adsorbate bonding, and desorption kinetics of H/Mo(100)*, J. A. Prybyla and P. J. Estrup and Y. J. Chabal, J. Vac. Sci. Technol. A 5(4), 791 (1987).
40. *Real Time Study of Self-sustained Oscillations in the CO Oxidation Rate on Pt*, V. A. Burrows and S. Sundaresan and Y. J. Chabal, J. Vac. Sci. Technol. A 5, 801 (1987).

## 1986

39. *H-induced structural phase transitions on W(100) by surface infrared spectroscopy*, J. J. Arrecis, Y. J. Chabal and S. B. Christman, Phys. Rev. B 33, 7906 (1986).
38. *Infrared Absorption Measurement of the Overtone of the Wagging Mode of Hydrogen on W(100)*, Y. J. Chabal, J. Vac. Sci. Technol. A 4, 1324 (1986).
37. *Dynamics of H Chemisorbed on Si(100) and W(100) Studied by High-Resolution Infrared Spectroscopy*, Y. J. Chabal, J. Electron Spectro. rel. Phenom. 38, 159 (1986).
36. *High Resolution Infrared Spectroscopy of Adsorbates on Semiconductor Surfaces: Hydrogen on Si(100) and Ge(100)*, Y. J. Chabal, Surf. Sci. 168(1-3), 594 (1986).

## 1985

35. *Effects of High Pressure Molecular Hydrogen in a-Si:H*, Y. J. Chabal and C. K. N. Patel, J. Non-Cryst. Solids 77-78(1), 201 (1985).
34. *Electronic Damping of Hydrogen Vibration on the W(100) Surface*, Y. J. Chabal, Phys. Rev. Lett. 55(8), 845 (1985).
33. *Linewidth of H Chemisorbed on W(100): An Infrared Study*, D. M. Riffe, L. M. Hanssen, A. J. Sievers, Y. J. Chabal and S. B. Christman, Surf. Sci. 161(1), L559 (1985).
32. *Studies on Self-sustained Reaction-rate Oscillations: I. Real-time Surface Infrared Measurements During Oscillatory Oxidation of Carbon Monoxide*, V. A. Burrows S. Sundaresan, Y. J. Chabal and S. B. Christman, Surf. Sci. 160(1), 122 (1985).

31. *Infrared Study of the Chemisorption of Hydrogen and Water on Vicinal Si(100)-2x1 Surface*, Y. J. Chabal, J. Vac. Sci. Technol. A 3, 1448 (1985).
30. *New Ordered Structure for the H-saturated Si(100) Surface: the (3x1) Phase* Y. J. Chabal, K. Raghavachari, Phys. Rev. Lett. 54(10), 1055 (1985).
29. *Infrared Linewidths and Vibrational Lifetimes at Surfaces: H on Si(100)*, J. C. Tully, Y. J. Chabal, K. Raghavachari, J. M. Bowman and R. R. Lucchese, Phys. Rev. B 31(2), 1184 (1985).
28. *High-Resolution Infrared Spectroscopy and Surface Structure*, Y. J. Chabal, in *The Structure of Surfaces*, M. A. Van Hove and S. Y. Tong eds., Springer-Verlag (Springer Series in Surface Sciences), 2, 70 (1985).
27. *Evidence for High Pressure Gaseous Molecular Hydrogen in a-Si:H . An Infrared Study*, Y. J. Chabal and C. K. N. Patel, Proceedings of the 17<sup>th</sup> International Conference on the Physics of Semiconductors, J. D. Chadi and W. A. Harrison, eds, Springer-Verlag, p.909 (1985).

## 1984

26. *Solid Hydrogen in Amorphous Silicon: Phase Transition*, Y. J. Chabal and C. K. N. Patel, Phys. Rev. Lett. 53(18), 1771 (1984).
25. *Infrared Absorption in a-Si:H: First Observation of the Gas-Solid Transition of Occluded Molecular H<sub>2</sub>*, Y. J. Chabal and C. K. N. Patel, Physica B&C, 126(1-3), 461 (1984).
24. *Infrared Absorption in a-Si:H: First Observation of Gaseous Molecular H<sub>2</sub> and Si-H Overtone*, Y. J. Chabal and C. K. N. Patel, Phys. Rev. Lett. 53(2), 210 (1984).
23. *Surface Infrared Study of Si(100)-(2x1)H*, Y. J. Chabal and K. Raghavachari, Phys. Rev. Lett. 53(3), 282 (1984).
22. *Evidence of Dissociation of Water on the Si(100)2x1 Surface*", Y. J. Chabal and S. B. Christman, Phys. Rev. B 29(12), 6974 (1984).
21. *Hydride Formation on the Si(100):H<sub>2</sub>O Surface*, Y. J. Chabal, Phys. Rev. B 29(6), 3677 (1984).
20. *IR Spectroscopy with Surface Electromagnetic Waves*, A. J. Sievers, Z. Schlessinger and Y. J. Chabal, J. Phys. (Paris) C5, 167 (1984).

## 1983

19. *Hydrogen Chemisorption on Si(111)-(7x7) and -(1x1) Surfaces. A Comparative Infrared Study*, Y. J. Chabal, G. S. Higashi, and S. B. Christman, Phys. Rev. B 28(8), 4472 (1983).
18. *Hydrogen Vibration on Si(111)7x7 - Evidence for a Unique Chemisorption Site*, Y. J. Chabal, Phys. Rev. Lett. 50(23), 1850 (1983).
17. *Sample Manipulator for Operation Between 20K and 2000K in Ultrahigh Vacuum*, E. E. Chaban, Y. J. Chabal, Rev. Sci. Instrum. 54, 1031 (1983).

16. *Surface State Optical Absorption on the Clean Si(100)2x1 Surface*, Y. J. Chabal, S. B. Christman, E. E. Chaban, M. T. Yin, J. Vac. Sci. Technol. A 1, 1241 (1983).
15. *High Resolution Infrared Study of Hydrogen Chemisorbed on Si(100)*, Y. J. Chabal, E. E. Chaban, S. B. Christman, J. Electron Spectro. Rel. Phenom. 29, 35 (1983).

## 1982

14. *Chemical Bonding at the Si-Metal Interface: Si-Ni and Si-Cr*, A. Franciosi, J. H. Weaver, D. G. O'Neill, Y. J. Chabal, J. E. Rowe, J. M. Poate, O. Bisi, and C. Calandra, J. Vac. Sci. Technol. 21(2), 624 (1982).
13. *Stoichiometry and Structural Disorder Effects on the Electronic Structure of Ni and Pd Silicides*, Y. J. Chabal, J. E. Rowe, J. M. Poate, A. Franciosi, and J. H. Weaver, Phys. Rev. B 26(6), 2748 (1982).
12. *Photoemission and Band Structure Results for NiSi<sub>2</sub>*, Y. J. Chabal, D. R. Hamann, J. E. Rowe, and M. Schluter, Phys. Rev. B 25(12), 7598 (1982).
11. *Laser Quenched and Impurity Induced Metastable Si(111)1x1 Surfaces*, Y. J. Chabal, J. E. Rowe, and S. B. Christman, J. Vac. Sci. Technol. 20, 763 (1982).

## 1981

10. *High frequency modulation interferometric study of electron stimulated infrared (IR) luminescence*, Y.J. Chabal, D.L. Allara, D. Teicher and J.E. Rowe. In Sb in Proceedings of Spie - the International Society for Optical Engineering, 289, 82 (1981).
9. *Infrared Study of Hydrogen Chemisorbed on W(100) by Surface- Electromagnetic-Wave Spectroscopy*, Y. J. Chabal and A. J. Sievers, Phys. Rev. B 24(6), 2921 (1981).
8. *Nature of Vicinal Laser-Annealed Si(111) Surfaces*, Y. J. Chabal, J. E. Rowe, and S. B. Christman, Phys. Rev. B 24(6), 3303 (1981).
7. *Buckling Reconstruction on Laser-Annealed Si(111) Surfaces*, Y. J. Chabal, J. E. Rowe, and D. A. Zwemer, Phys. Rev. Lett. 46(9), 600 (1981).
6. *Si(111): Ni Surface Studies by AES, UPS, LEED, and Ion Scattering*, Y. J. Chabal, R. J. Culbertson, L. C. Feldman, and J. E. Rowe, J. Vac. Sci. Technol. 18, 880 (1981).

## 1980

5. *Evidence for a Disordered V19xV19 Structure for the Quenched Clean Si(111) Surface*, Y. J. Chabal and J. E. Rowe, Proceedings of the International Conference on Ordering in Two Dimensions, Lake Geneva, Wisconsin, S. K. Sinha, ed., Elsevier North Holland (1980).
4. *High-Resolution Infrared Study of Hydrogen (1x1) on Tungsten (100)*, Y. J. Chabal and A. J. Sievers, Phys. Rev. Lett. 44(14), 944 (1980).

## 1978

3. *IR Study of Molecules Adsorbed on Metal Surfaces by Surface Electromagnetic Wave Spectroscopy*, Y. J. Chabal and A. J. Sievers, *J. Vac. Sci. Technol.* 15(20), 638 (1978).
2. *Surface Electromagnetic Wave Launching at the Edge of a Metal Film*, Y. J. Chabal and A. J. Sievers, *Appl. Phys. Lett.* 32, 90 (1978).

## 1975

1. *Temperature Dependence of the Far-Infrared Absorption Spectrum in Amorphous Dielectrics*, K. K. Mon, Y. J. Chabal, and A. J. Sievers, *Phys. Rev. Lett.* 35(20), 1352 (1975).

\*\*\*\*\*

### Patents:

*Granted:* US 6,388,290 B1:“Single Crystal Silicon on Polycrystalline Silicon Integrated Circuits” Yves J. Chabal and George K. Celler.

*Granted:* US 6,825,538 “Semiconductor device having a high K gate dielectric and method of manufacture thereof“ Yves J. Chabal, Martin L. Green and Glen Wilk

*Granted:* US 7,223,677 “Process for fabricating a semiconductor device having an insulating layer formed over a Semiconductor Substrate” Yves J. Chabal, Martin Frank and Glen Wilk.

*Filed:* ‘A Method for Semiconductor Device Fabrication in which an insulating Layer is formed over a Semiconductor Substrate’ Yves J. Chabal, Martin Frank, Marin L. Green and Glen Wilk.