

## Yves J. Chabal

### Invited and Plenary talks – since 1990

241. *“Molecular Interactions and Reactions in Metal Organic Framework materials”*, Kui Tan, Erika Fuentes, Sebastian Zuluaga, Qihan Gong, Jing Li, Timo Thonhauser and Yves J. Chabal, Departmental Seminar, University of Iowa at Ames, IA, April 21, 2016.
240. *“ALD and surface functionalization for sensing and photovoltaic applications”*, Yves Chabal, Seminar series at the Institute of Materials Science & Engineering, University of Washington in St Louis, MO, April 15<sup>th</sup>, 2016.
239. *“Molecular Interactions and Reactions in Metal Organic Framework materials”*, Kui Tan, Erika Fuentes, Sebastian Zuluaga, Qihan Gong, Jing Li, Timo Thonhauser and Yves J. Chabal, Inorganic-Electrochemistry Seminar, California Institute of Technology, Pasadena, CA., April 4, 2016.
238. *“Chemistry in Confined Environments: Water Reaction in MOF-74”*, Kui Tan, Erika Fuentes, Sebastian Zuluaga, Qihan Gong, Jing Li, Timo Thonhauser and Yves J. Chabal, 251<sup>st</sup> American Chemical Society National Meeting & Exposition, San Diego, CA., March 13-17, 2016.
237. *“ Chemistry in confined environments: water in MOF-74”*, Kui Tan, Erika Fuentes, Qihan Gong, Sebastian Zuluaga, Jing Li, Timo Thonhauser, and Yves J. Chabal, DOE-BES Synthesis and Processing Science Principal Investigators’ Meeting, Gaithersburg, MD, Nov. 2-4, 2015.
236. *“Etching and Chemical Functionalization of Silicon Nitride Surfaces for Selective Deposition “*, International Conference on Atomic Layer Deposition, Li-Hong Liu, Tatiana Peixoto, Wilfredo Cabrera, Don Dick, Jean-François Veyan, David J. Michalak, Rami Hourani, Mathew D. Halls, Sidharam P. Pujar, Han Zuilhof, Yves J. Chabal, AVS 62<sup>nd</sup> International Symposium & Exhibition, San Jose, CA, Oct. 18-23, 2015.
235. *“Surface chemical functionalization of advanced materials”*, Y.J. Chabal, Keynote presentation at the Materials Characterization Workshop, University of Delaware, Newark, DE, August 25-27, 2015.
234. *“Surface chemical functionalization of advanced materials“* Yves J. Chabal, AVS Texas Chapter, Dallas, TX, Aug. 5-6, 2015.
233. *“Mechanistic studies of oxide and nitride deposition by in situ Infrared spectroscopy”*, Abraham Vega, Luis Fabián Peña-Orduña, Yuzhi Gao, Charith Nanayakkara, Wilfredo Cabrera, Don Dick, Mathew D. Halls and Yves J. Chabal, 15<sup>th</sup> international conference on Atomic Layer Deposition, Portland, OR, June 28-July 1, 2015.
232. *“Chemical nature and control of InP/Al<sub>2</sub>O<sub>3</sub> and InGaAs/Hf<sub>2</sub>O interfaces“*, W. Cabrera and Y.J. Chabal, 227<sup>th</sup> Electrochemical Society Meeting, Chicago, IL, May 24-28, 2015.
231. *“Chemical functionalization of advanced materials“*, Y.J. Chabal, Plenary talk for the Regroupement Québécois sur les Matériaux de Pointe Montreal, CA, May 14, 2015.
230. *“Interaction of small molecules in Metal Organic Framework materials“*, Kui Tan, Erika Fuentes and Yves J. Chabal, Materials Synthesis and Simulations Across Scales Seminar Series, PNNL, February 25, 2015.

229. *"Metrology of selective functionalization of semiconductor, oxide and nitride surfaces"*, L.-H. Liu, W. DeBenedetti, T. Peixoto, S. Karakaya, N. Shafiq, J.-F. Veyan, D. Michalak, R. Hourani, and Y. J. Chabal, AVS 61st International Symposium & Exhibition, Baltimore, Maryland, November 9-14, 2014.
228. *"Chemical functionalization of semiconductor surfaces for microelectronics, energy and sensing applications"*, P. Thissen, O. Seitz, W. DeBenedetti, A. Vega, W. Cabrera, T. Peixoto, W. Peng, and Yves Chabal, Chemistry Colloquium, Indiana University, Bloomington, IN, May 28, 2014.
227. *"Mentoring and coaching Women and URM's in STEM fields"*, Y.J. Chabal, Materials Research Society Symposium, San Francisco, CA, April 21-25, 2014.
226. *"Chemical functionalization of semiconductor surfaces for microelectronics, energy and sensing applications"*, P. Thissen, O. Seitz, W. DeBenedetti, A. Vega, W. Cabrera, T. Peixoto, W. Peng, and Yves Chabal, IGERT student seminar, Cornell University, Ithaca, NY, April 9, 2014.
225. *"Chemical functionalization of semiconductor surfaces for microelectronics, energy and sensing applications"*, P. Thissen, O. Seitz, W. DeBenedetti, A. Vega, W. Cabrera, T. Peixoto, W. Peng, and Yves Chabal, Materials Science Colloquium, University of Illinois at Urbana-Champaign, Urbana, IL, March 31, 2014.
224. *"Atomic Layer Deposition: technological challenges as scientific opportunities"*, Yves J. Chabal, Air Products, Carlsbad, CA, March 10, 2014
223. *"Chemical functionalization of semiconductor surfaces for microelectronics, energy and sensing applications"*, P. Thissen, O. Seitz, W. DeBenedetti, A. Vega, W. Cabrera, T. Peixoto, W. Peng, and Yves Chabal, Inorganic Chemistry Seminar, University of California San Diego, La Jolla, CA, March 7, 2014.
222. *"Chemical bonding and stability of multilayer graphene oxide layers"*, Y.J. Chabal, C. Gong, M. Acik, S. Kim, S. Zhou, Y. Hu, W. de Heer, C. Berger, A. Bongiorno and E. Riedo, SPIE OPTO 2014, San Francisco, CA, Feb. 1-6, 2014.
221. *"Advanced Materials for Energy Harvesting, Storage and Release"*, Y.J. Chabal, Energy Summit 2014, Dallas, TX, Jan. 27, 2014
220. *"Atomic Layer Deposition: technological challenges as scientific opportunities"*, Yves J. Chabal, Jinhee Kwon, Oliver Seitz, Peter Thissen, Min Dai, Karla Bernal, Wilfredo Cabrera, Tatiana Peixoto, SAFC Hitech, Boston, Dec. 5, 2013.
219. *"Nanoporous materials for gas storage, gas separation and carbon capture"*, N. Nijem, K. Tan, Y.J. Chabal, and J. Li, and T. Thonhauser, Second SEMINA Conference, Hermosillo, Mexico, Sept. 19-20, 2013.
218. *"In-situ characterization for atomic layer deposition"*, Y.J. Chabal, Technical University of Eindhoven, Eindhoven, Netherlands, June 10, 2013.
217. *"From one-way chemistry to surface structuring: The equilibrium of methanol induced nanopatterning on Si"*, Peter Thissen, Ehud Fuchs, Katy Roodenko, Tatiana Peixoto, William DeBenedetti, Ben Batchelor, Dennis Smith, Wolf Gero Schmidt and Yves J. Chabal, 2nd International Conference on Materials for Energy (EnMat II), Karlsruhe (Germany), May 12 - 16, 2013.
216. *"Future of atomic layer deposition: Measurements & analysis of surfaces, nucleation and growth"*, Y.J. Chabal, "Future of ALD" DARPA Workshop, Chicago, April 20, 2013.

215. "Chemical nanopatterning of H-terminated Si(111) surfaces", P. Thissen, T. Peixoto, W. DeBenedetti, and Yves Chabal, Materials Research Society Symposium, San Francisco, CA, April 1-5, 2013.
214. "Chemical Functionalization of hydrogen-terminated Silicon Surfaces for Energy and Sensing Applications", O. Seitz, W. Peng, P. Thissen, L. Caillard, W. De Benedetti, H. Nguyen, Y. Garstein, A. Malko, and Yves Chabal, TMS 2013 Annual meeting & Exhibition, San Antonio, TX, March 3-7, 2013
213. "Chemical bonding and stability of multilayer graphene oxide layers", 7th Singapore International Chemistry Conference (SICC-7), Singapore, Dec. 16-19, 2012.
212. "Nature and control of interfacial chemistry in Al/CuO reactive nanolaminate structures", Jinhee Kwon, Jean-François Veyan, Yves J. Chabal, J.M. Duc  r  , M. Petrantoni, P. Alphonse, M. Bahrami, Alain Est  ve and Carole Rossi, MRS Fall Meeting, Boston, MA, Nov. 26-30, 2012.
211. "Chemical functionalization of oxide-free Si(111) surfaces", P. Thissen, O. Seitz, D. Aureau, T. Peixoto, A. Vega, D. Michalak, Yves Chabal, 19th Lloyd B. Thomas Chemistry Scholar Lecture, University of Missouri-Columbia, Nov. 9, 2012.
210. "Materials for Energy", Y.J. Chabal, 19<sup>th</sup> Lloyd B. Thomas Chemistry Scholar Lecture, University of Missouri-Columbia, Nov. 8, 2012.
209. "Chemical functionalization of hydrogen-terminated Si(111) surfaces", P. Thissen, O. Seitz, D. Aureau, T. Peixoto, A. Vega, D. Michalak, Yves Chabal, Award Talk, AVS 59<sup>th</sup> International Symposium & Exhibition, Tampa, FL, Oct. 28-Nov. 2, 2012.
208. "Chemical functionalization of hydrogen-terminated Si(111) surfaces", P. Thissen, O. Seitz, D. Aureau, T. Peixoto, A. Vega, Yves Chabal, International conference on Vibrations at Surfaces, Kobe, Japan, Sept. 24-26, 2012.
207. "Fundamental issues in hydrogen storage in metal organic frameworks and complex metal hydrides", N. Nijem, J-F. Veyan, I. Chopra, Y.J. Chabal, 244<sup>th</sup> ACS Meeting, Philadelphia, Aug. 19-24, 2012.
206. "Activation of surface hydroxyl groups for molecular reactions by modification of H-terminated Si(111) surfaces", P. Thissen, O. Seitz, T. Peixoto, A. Vega, R.C. Longo, K. Cho, and Yves Chabal, 224<sup>th</sup> ACS Meeting, Philadelphia, Aug. 19-24, 2012.
205. "Understanding the selective adsorption of CO<sub>2</sub> and hydrocarbon in a flexible Metal Organic Framework ", N. Nijem, T. Thonhauser, J. Li and Y.J. Chabal, 224<sup>th</sup> ACS Meeting, Philadelphia, Aug. 19-24, 2012
204. "Introduction to Nanotechnology: Nanoparticles and Atomic Layer Deposition", Y. J. Chabal, Lecture series at Huazhong University of Science and Technology, Wuhan, China, June 21-22, 2012.
203. "Science and Technology in the 21st century: From Bell Labs to university research", Y. J. Chabal, Distinguished Lecture at Huazhong University of Science and Technology, Wuhan, China, June 19, 2012.
202. "Chemical functionalization of oxide-free silicon surfaces", Yves J. Chabal, The 86th ACS Colloid and Surface Science Symposium; Baltimore, June 10-13, 2012.

201. "Chemical functionalization of silicon surfaces for energy and sensing applications" D. Michalak, D. Aureau, P. Thissen, O. Seitz, T. Peixoto, Louis Caillard, Yves Chabal, Award Talk, Local ACS Chapter, Dallas, TX, May 24, 2012.
200. "Chemical exfoliation and functionalization of graphene and modification of graphene edges and defects:", Muge Acik, Cheng Gong, Daniel Dryer, Cecilia Mattevi, Manish Chhowalla, Christopher Bielawski, and Y.J. Chabal, E-MRS Spring Meeting, Strasbourg, France, May 14-18, 2012.
199. "Chemical functionalization of hydrogen-terminated silicon surfaces for energy and sensing applications", D. Michalak\*, D. Aureau, P. Thissen, O. Seitz, T. Peixoto, Louis Caillard, and Yves Chabal, Materials Science Colloquium, Ecole Polytechnique, May 11, 2012.
198. "Atomic Layer Deposition: technological challenges as scientific opportunities: Activation of surface hydroxyl groups by modification of H-terminated Si(111) surfaces", Y.J. Chabal, Jinhee Kwon, Oliver Seitz, Peter Thissen, Min Dai, Karla Bernal, Wilfredo Cabrera, Tatiana Peixoto, Colloquium given as part of a Chair "Science des matériaux et surfaces actives" sponsored by St Gobain, St Gobain, Aubervilliers, May 10, 2012.
197. "Spectroscopic evidence for H<sub>2</sub>-H<sub>2</sub> interactions in MOFs with unsaturated metal centers: MOF-74", N. Nijem, J-F. Veyan, Y.J. Chabal, and L. Kong, D.C. Langreth, K. Li, J. Lee, Y. Li, H. Wu, J. Li, Task 22 Workshop (DOE), Heidelberg, Germany, May 7-9, 2012
196. "Graphene and Graphene oxide chemical functionalization", Y. J. Chabal, The US-Korea Joint Symposium on Nanotechnology, Grapevine, TX, May 1-4, 2012.
195. "Chemical functionalization of hydrogen-terminated silicon surfaces for energy and sensing applications", **Yves J. Chabal**, Chemistry Colloquium, Portland State University, April 13, 2012.
194. "Hybrid Silicon/colloidal nanocrystals photovoltaic architectures based on radiative and non-radiative energy transfer", H. M. Nguyen, O. Seitz, W. Peng, L. Caillard, Yu. N. Gartstein, Y. J. Chabal and A. V. Malko, MRS Spring 2012, San Francisco, CA, April 8-13, 2012.
194. "Award address: Surface Vibrational Spectroscopy", **Y. J. Chabal**, The 243<sup>rd</sup> American Chemical Society meeting, San Diego, CA March 25-29, 2012.
193. "Understanding the preferential adsorption of CO<sub>2</sub> over N<sub>2</sub> in a flexible Metal Organic Framework", Y.J. Chabal, N. Nijem, P. Thissen, Y. Yao, R. Longo, K. Roodenko, H. Wu, Y. Zhao, K. Cho, J. Li, The 243<sup>rd</sup> American Chemical Society meeting, San Diego, CA March 25-29, 2012.
192. "Understanding preferential adsorption of guest molecules in flexible metal organic framework materials", **Y.J. Chabal**, N. Nijem, P. Thissen, Y. Yao, R. Longo, K. Roodenko, H. Wu, Y. Zhao, K. Cho, J. Li, The 243<sup>rd</sup> American Chemical Society meeting, San Diego, CA March 25-29, 2012.
191. "Chemical functionalization of hydrogen-terminated silicon surfaces for sensing and energy applications", Y. Chabal, P. Thissen, O. Seitz, T. Peixoto, The 243<sup>rd</sup> American Chemical Society meeting, San Diego, CA March 25-29, 2012.
191. "Atomic Layer Deposition: technological challenges as scientific opportunities", **Yves J. Chabal**, Jinhee Kwon, Oliver Seitz, Peter Thissen, Min Dai, Karla Bernal, Wilfredo Cabrera, Tatiana Peixoto, Chemistry and Materials Distinguished Lecture, Naval Research Labs, March 14, 2012.
190. "Chemical functionalization of hydrogen-terminated silicon surfaces for microelectronics, biomedical and energy applications", P. Thissen, O. Seitz, D. Aureau, T. Peixoto, **Yves Chabal**, Chemistry Colloquium, Tufts University, March 12, 2012.

189. "Guest host interactions in Metal Organic Frameworks for optimization of gas separation, storage and sensing applications" N. Nijem and Yves J. Chabal, Harvard University, Materials Science seminar series, Boston, MA, February 24, 2012
188. "Infrared studies of graphene oxidation", **Y. J. Chabal**, M. Acik, 2011 AVS 58th International Symposium & Exhibition, Nashville, Tennessee, USA, Oct. 31-Nov. 4, 2011.
187. "Hydrogen storage in complex metal hydrides and metal organic framework materials: challenges and opportunities", Nour Nijem, Irinder Chopra, Jeff Veyan and **Yves J. Chabal**, Materials Science Colloquium, Michigan Technological University, Houghton, MI, Nov. 14, 2011.
186. "Characterization of semiconductor surfaces during surface conditioning and functionalization for microelectronics, biomedical and energy applications", P. Thissen, O. Seitz, D. Aureau, T. Peixoto, **Yves Chabal**, ECS conference, Boston, MA, Oct. 10-14, 2011.
185. "Patterning silicon surfaces by chemical self-assembly for biomedical and energy applications", **Y. J. Chabal**, Physics Colloquium, A&M Commerce, Sept. 1<sup>st</sup>, 2011.
184. "Molecular hydrogen dissociation on Ti doped Al(111) surfaces." Irinder Singh Chopra, J. F. Veyan, **Y. J. Chabal**, Santanu Chaudhuri, Jason Graetz, IEA Hydrogen Implementing Agreement, Task 22 – Fundamental and applied hydrogen storage materials development, Task 22 IEA HIA Expert Meeting, Copenhagen, Denmark, September 4-8, 2011.
183. "Spectroscopic studies of small molecules in Metal Organic Frameworks (MOFs) ", Nour Nijem, Peter Thissen, and **Y.J. Chabal**, DOE contractors' meeting, Arlington, VA, Sept. 19-21 , 2011.
182. "Spectroscopic Study of small molecules in Metal Organic Frameworks (MOFs)" N. Nijem, and **Y. J. Chabal**, Invited Talk, Adsorption at the nanoscale Workshop, A New Frontier in Fundamental Science and Applications, Columbia, MO ,USA, September 22-24, 2011.
181. "Interaction and thermal stability of oxygen species in graphene oxide and graphene defects", **Yves J. Chabal**, M. Acik, *2011 International Conference on Materials for Advanced Technologies (ICMAT), Suntec, Singapore, June 27-July 2, 2011.*
180. "In-situ surface characterization during thin film growth for microelectronics and energy applications", **Y. J. Chabal**, Materials Colloquium, Applied Materials, Santa Clara, Jan. 31, 2011.
179. "Molecular hydrogen dissociation on Ti-doped aluminum surfaces", I. Chopra, S. Chaudhuri, J-F. Veyan, **Y.J. Chabal**, 3<sup>rd</sup> DOE Computational Materials and Chemical Science Network on Predictive Modeling of the Growth and Properties of Energy-relevant thin Film and Nanostructures, UT Dallas, TX, Jan. 20-22, 2011.
178. "Role of water and nature of edges during thermal reduction of graphene oxide", M. Acik, C. Mattevi, C. Gong, G. Lee, K. Cho, M. Chhowalla, **Y. J. Chabal**, *2nd International Symposium on Graphene Devices: Technology, Physics and Modeling (Oct. 2010) - Tohoku University, Sendai, Japan.*
175. "Role of water and nature of edges in thermally reduced graphene oxide", **Y. J. Chabal**, M. Acik, *2010 LAAS-CNRS, Toulouse, France, Sept. 2010.*
174. "Novel theoretical and experimental approaches for understanding and optimizing molecule-sorbent interactions in metal organic framework materials", **Y.J. Chabal**, International conference on Fundamental and applied hydrogen storage materials development , Death Valley, CA, April 11-15, 2010

173. "Next Generation Materials for Hydrogen storage", **Y.J. Chabal**, N. Nijem, I. Chopra, J-F. Veyan, Energy Workshop, UT Dallas, May 19-20, 2010
171. "Patterning Silicon Surfaces by Chemical Self-assembly for Biomedical and Energy Applications", **Yves J. Chabal**, Tyndall Lecture Series, Tyndall National Institute, Cork, Ireland, June 3, 2010.
170. "Wet and gas phase chemistry of H-terminated Si surfaces: Patterning silicon surfaces by chemical self-assembly", **Y.J. Chabal**, Telluride Workshop on Semiconductor Surface Chemistry, Telluride, CO, July 26-30, 2010.
169. "Wet and gas phase chemistry of H-terminated Si surfaces: Patterning silicon surfaces by chemical self-assembly and Thermal reduction of graphene oxide", **Y.J. Chabal**, LAAS Colloquium, CNRS Toulouse, France.
168. "Role of Water and Nature of Edges during Thermal Reduction of Graphene Oxide", Muge Acik, Cecilia Mattevi, Cheng Gong, Geunsik Lee, Kyeongjae Cho, Manish Chhowalla, and **Yves J. Chabal**, The International Symposium on Graphene Devices, Tohoku University, Sendai, Japan, Oct. 25-29, 2010
167. "In-situ studies of high-k dielectric on semiconductors and metal films on high-k dielectrics" **Y. J. Chabal**, 3<sup>rd</sup> International Workshop on high-k dielectrics on high mobility channel materials, Tsing Hua University, Hsinchu, Taiwan, Jan. 19, 2009.
166. "In-situ studies of high-k dielectric on semiconductors and metal films on high-k dielectrics" **Y. J. Chabal**, Joint AVS and Taiwan Annual Physical Society Meeting on "Beyond Si CMOS", Taipei, Taiwan, Jan. 20-21, 2009.
165. "Hydrogen storage in nanoporous materials", **Y. J. Chabal**, American Physical Society, Pittsburgh, PA March 16-20, 2009. (Davisson-Germer Prize talk)
164. "Hydrogen storage in nanoporous materials", **Y. J. Chabal**, Physics Colloquium, University of Texas at Dallas, March 23, 2009.
163. "Tutorial on Interface formation Mechanisms for deposited Dielectric Layers on Si and High Charge Mobility Substrates", **Y.J. Chabal**, 2009 MRS Spring Meeting, San Francisco, CA, Apr. 13-17, 2009.
162. "Novel Theoretical and Experimental Approaches for Understanding and Optimizing Hydrogen-sorbent Interactions in Metal Organic Framework Materials", Nour Nijem, Jean-Francois Veyan, **Yves J. Chabal**, Kunhao Li, JeongYong Lee, Jing Li, Lingzhu Kong, Valentino R. Cooper, David C. Langreth, Hydrogen storage Contractors' Meeting for DOE- BES, Washington, DC, May 20, 2009.
161. "In situ FTIR studies of thermal annealing of Graphene Oxide", Muge Acik, Geunsik Lee, Cecilia Mattevi, Manish Chhowalla, Kyeongjae Cho, **Yves Chabal**, NRI workshop, Austin, TX, September 16-17, 2009.
160. "Nanoporous mixed-matrix membranes for gas separation", K. J. Balkus, J.P. Ferraris, I. H. Musselman, K. Cho, **Y. J. Chabal**, Carbon Capture DOE workshop, College Park, MD, October 5-6, 2009.
159. "Interaction of molecular Hydrogen with Microporous Metal Organic Framework Materials" Nour Nijem, Jean-Francois Veyan, **Yves J. Chabal**, Kunhao Li, JeongYong Lee, Jing Li, Lingzhu Kong, Valentino R. Cooper, David C. Langreth, computational Materials Science Network on Predictive Modeling of the growth and properties of energy relevant thin films and nanostructures, Denver, CO, October 18-20, 2009.

158. "Materials Science of Graphene for Novel Device Applications," E.M.Vogel, S.Y.Park, M.J.Kim, **Y.J.Chabal**, R.M.Wallace, J. Kim, K.J.Cho, Nanoelectronics Research Initiative e-Workshop, July 28, 2009, Gaithersburg, MD.
157. "*Interaction of molecular Hydrogen with Microporous Metal Organic Framework Materials*" Nour Nijem, Jean-Francois Veyan, **Yves J. Chabal**, Kunhao Li, JeongYong Lee, Jing Li, Lingzhu Kong, Valentino R. Cooper, David C. Langreth, computational Materials Science Network on Predictive Modeling of the growth and properties of energy relevant thin films and nanostructures, Denver, CO, October 18-20, 2009.
156. "*Nanoporous mixed-matrix membranes for gas separation*", K. J. Balkus, J.P. Ferraris, I. H. Musselman, K. Cho, **Y. J. Chabal**, Carbon Capture DOE workshop, College Park, MD, October 5-6, 2009.
155. "*In situ FTIR studies of thermal annealing of Graphene Oxide*", Muge Acik, Geunsik Lee, Cecilia Mattevi, Manish Chhowalla, Kyeongjae Cho, **Yves Chabal**, NRI workshop, Austin, TX, September 16-17, 2009.
154. "*Novel Theoretical and Experimental Approaches for Understanding and Optimizing Hydrogen-sorbent Interactions in Metal Organic Framework Materials*", Nour Nijem, Jean-Francois Veyan, **Yves J. Chabal**, Kunhao Li, JeongYong Lee, Jing Li, Lingzhu Kong, Valentino R. Cooper, David C. Langreth, Hydrogen storage Contractors' Meeting for DOE- BES, Washington, DC, May 20, 2009.
153. "*Tutorial on Interface formation Mechanisms for deposited Dielectric Layers on Si and High Charge Mobility Substrates*", **Y.J. Chabal**, 2009 MRS Spring Meeting, San Francisco, CA, Apr. 13-17, 2009.
152. "*Hydrogen storage in nanoporous materials*", **Y. J. Chabal**, Physics Colloquium, University of Texas at Dallas, March 23, 2009.
151. "*Hydrogen storage in nanoporous materials*", **Y. J. Chabal**, American Physical Society, Pittsburgh, PA March 16-20, 2009. (Davisson-Germer Prize talk)
150. "*In-situ studies of high-k dielectric on semiconductors and metal films on high-k dielectrics*" **Y. J. Chabal**, 3<sup>rd</sup> International Workshop on high-k dielectrics on high mobility channel materials, Tsing Hua University, Hsinchu, Taiwan, Jan. 19, 2009.
149. "*In-situ studies of high-k dielectric on semiconductors and metal films on high-k dielectrics*" **Y. J. Chabal**, Joint AVS and Taiwan Annual Physical Society Meeting on "Beyond Si CMOS", Taipei, Taiwan, Jan. 20-21, 2009.
148. "*Initial growth of metal films using atomic layer deposition*", **Y.J. Chabal**, J. Kwon, M. Dai, S. Park, R. Gordon, 8<sup>th</sup> International Conference on Atomic Layer Deposition, Bruges, Belgium, June 29-July 2, 2008.
147. "*Characterizing surface chemistry with infrared spectroscopy*", **Y.J. Chabal**, ThermoFisher Scientific Colloquium, Madison, WI, June 3, 2008.
146. "*Atomic Layer Precursor Evaluation: Need for in-situ characterization*" **Y.J. Chabal**, SAFC Hitech Colloquium, Sheboygan, WI, May 27, 2008.
145. "*Nanoelectronics - Potential and Implications to the Engineering Field*" **Y. J. Chabal**, Society of Professional Hispanic Engineers Professional Development Conference, Plano, TX, April 24, 2008.
144. *Surface Infrared Spectroscopy*, **Y.J. Chabal** and K. Raghavachari, American Chemical Society Spring Meeting, New Orleans, April 7-11, 2008.

143. "Passivation of Silicon Surfaces", **Y.J. Chabal**, Basics and Advanced Topics of Surface Conditioning and Cleaning Processing for Integrated Circuit Manufacturing, SEMATECH conference, Austin, TX, March 31, 2008.
142. *In situ Transmission Infrared Spectroscopy during Atomic Layer Deposition*, **Jinhee Kwon**, Min Dai, Erik Langereis, Yves J. Chabal, Thermo Research Symposium, March 2008 Princeton, NJ, USA
141. "Growing Thin Films one layer at a time: Technological Challenges as Scientific Opportunities", **Y.J. Chabal**, Colloquium Saint Peters College, Jersey City, NJ Dec. 4, 2007
140. "Chemical Functionalization of Semiconductor Surfaces for Biomedical Applications", N. Lapin, **Y.J. Chabal**, Eastern Analytical Symposium, Piscataway, NJ, Nov. 12-16, 2007.
139. "Liquid Methanol Reaction with H-terminated Surfaces", **Y.J. Chabal**, D. Michalak, S. Rivillon-Amy, 54<sup>th</sup> AVS International Symposium, Seattle, WA, Oct. 15-19, 2007.
138. "In-situ characterization of thin film growth with Atomic Layer Deposition" M. Dai, J. Kwon, **Y.J. Chabal**, Z. Li and R. Gordon, American Chemical Society Meeting, Boston, Aug. 20-24, 2007.
137. "Building materials one layer at a time: Technological challenges as scientific opportunities", **Y.J. Chabal**, R.B. Woodard Lectures in the Chemical Sciences Harvard/MIT Physical Chemistry Seminar, Harvard University, Boston, MA. Feb. 1-2, 2007.
136. "In situ Infrared Absorption Spectroscopy for Thin Film Growth by Atomic Layer Deposition", **Y.J. Chabal**, Symposium on **Advances in in-situ characterization of film growth and interface processes** at the Fall 2006 Materials Research Society meeting, Boston, Boston, MA. Nov. 27-Dec.1, 2006.
135. "Building materials one layer at a time: Technological challenges as scientific opportunities", **Y.J. Chabal**, Physics Colloquium, Michigan State University, Lansing, Mi, Oct. 26, 2006.
134. "In-situ infrared absorption spectroscopy for thin film growth by atomic layer deposition", **Y. J. Chabal**, SPIE Conference on Physical Chemistry of Interfaces and Nanoparticles V, San Diego, CA, Aug. 15-17, 2006.
133. "Interface chemistry during Atomic Layer Deposition growth studied by in-situ infrared spectroscopy", **Y. J. Chabal**, Y. Wang, M-T. Ho, M. Dai, AVS Atomic Layer Deposition conference, Seoul, Korea, July 24-26, 2006.
132. *Wet Chemical Cleaning of Germanium Surfaces for Growth of high- $\kappa$  dielectrics*, **Y. J. Chabal** and S. Rivillon, Symposium on Gate Stack Scaling – Materials Selection, Role of Interfaces, and Reliability Implications, Spring Meeting of the Materials Research Society, San Francisco, CA, April 18-20, 2006.
131. *Passivation and stability of Germanium surfaces* **Y.J. Chabal**, Advanced Gate Stack Engineering Workshop, Austin, TX, Feb. 28-March 1, 2006.
130. *In-situ infrared spectroscopy of high- $\kappa$  dielectrics growth on semiconductors*, **Y.J. Chabal**, AVS 52<sup>nd</sup> International Symposium, Boston, MA, Oct. 30-Nov. 4, 2005.
129. *Interface Formation between Ge (and Si) substrates and HfO<sub>2</sub> films using in-situ Infrared Absorption Spectroscopy*, **Y.J. Chabal**, AVS 5<sup>th</sup> international Conference on Atomic Layer Deposition, San Jose, CA, Aug. 8-10, 2005.
128. *In-situ Infrared Spectroscopy during Atomic Layer Deposition of Metal Oxides*, **Y.J. Chabal**, Workshop on Challenges in Multifunctional Material Stoichiometry, Jackson Hole, WY, July 17-21, 2005.
127. *High- $\kappa$  dielectrics: the interface problem*, **Y.J. Chabal**, SEMATECH, Austin, TX, June 27, 2005.



126. *Semiconductor surface chemical functionalization for microelectronic applications: Technological challenges as scientific opportunities*, **Y.J. Chabal**, Materials Science Colloquium, University of Delaware, Newark, DE, March 9, 2005
125. *Semiconductor Surface Chemical Functionalization for Electronic Devices*, **Y.J. Chabal**, Gordon Conference on Chemical Reactions at Surfaces, Ventura, CA, Feb. 13-18, 2005.
124. *High- $\kappa$  dielectric gate oxide interface engineering to minimize EOT*, **Y.J. Chabal**, Advanced Gate Stack Engineering Workshop, Austin, TX, Feb. 14-15, 2005.
123. *Growing Materials One Atomic Layer at a time*, **Y.J. Chabal**, Chemistry colloquia at Smith College and at Wesleyan College, Oct. 7 and 8, 2004
122. *ALD growth of ultra-thin high- $\kappa$  dielectrics monitored by in-situ infrared spectroscopy*, Seminaire du pole MINAS, LAAS, **Y.J. Chabal**, Toulouse (France) July 7, 2004.
121. *In-situ Studies of Wet and Dry Processing of semiconductor surfaces*, **Y.J. Chabal**, 227<sup>th</sup> ACS National Meeting, Anaheim, CA, March 28-April 1, 2004.
120. *Atomic Layer Deposition growth of ultra-thin high- $\kappa$  dielectrics monitored by in-situ infrared spectroscopy*, **Y.J. Chabal**, 1<sup>st</sup> International NanoElectronics Materials Conference, Grenoble (France), March 2-4, 2004.
119. *Mechanistic studies of semiconductor wafer bonding and layer exfoliation by H-implantation*, **Y.J. Chabal**, Colloquium, SOITECH, Grenoble (France), March 3, 2004. 118. *A mechanistic look at semiconductor front-end processing*, Y.J. Chabal, IBM Colloquium Yorktown Heights, NY, Dec. 2, 2003.
117. *Semiconductor Surface passivation*, **Y.J. Chabal**, Symposium on Semiconductor Interfaces, 226<sup>th</sup> American Chemical Society National Meeting, New York, Sept. 7-11, 2003.
116. *In-situ Infrared Absorption Spectroscopy of Atomic Layer Deposition*, **Y.J. Chabal**, 2003 Atomic Layer Deposition Conference, San Jose, Aug. 4-6, 2003.
115. *Passivation of semiconductor surfaces: technological challenges and opportunity for spectroscopy*, **Y.J. Chabal**, Gordon Conference on Chemistry of Electronic Materials, New London, CT, July 13-18, 2003.
114. *In-situ infrared characterization of oxide growth on semiconductor surfaces*, **Y.J. Chabal**, ONR workshop on Epitaxial Heterogeneous Interfaces: Formation and Stability, May 5-7, 2003.
113. *Mechanistic Studies of Wafer bonding and Layer Exfoliation by H-implantation*, **Y.J. Chabal**, M.M. Frank, A. Fontcuberta y Moral, J.M. Zahler, Symposium on Integration and Heterogeneous thin-film Materials and Devices of 2003 Spring Meeting of the Materials Research Society, April 21-25, 2003.
112. *High-K Gate Dielectric Interface Engineering*, **Y. J. Chabal**, Sematech International, Austin, TX, Jan. 30, 2003.
111. *How industrial challenges are opportunity for interfacial chemistry* **Y.J. Chabal**, Nicolet Technical Symposium, Chicago, Nov. 12, 2002.
110. *The search for interface perfection*, **Y.J. Chabal**, Chemistry Colloquium, Princeton University, Oct. 15, 2002.
109. *Infrared Absorption studies of Electronic and Vibrational Surface States*, **Y.J. Chabal**, International Workshop on Electron-Phonon Effects in Nanosystems, Montauk, NY, Sept. 23-25, 2002.
108. *Oxidation of Semiconductor Surfaces*, **Y.J. Chabal**, O.Pluchery, F. Amy, M. Frank and K. Raghavachari, International Conference on Solid Films and Surfaces, Marseille, July 4-10, 2002.

107. *Electronic, Photonic and Nanomaterials*, **Y.J. Chabal**, Materials Science Colloquium, Columbia University, May 8, 2002.
106. *Searching for Interface Perfection*, **Y.J. Chabal**, Chemistry Colloquium, Rutgers University, April 22, 2002.
105. *Semiconductor Oxidation*, **Y.J. Chabal**, Physics Colloquium, Brookhaven National Labs, Dec. 18, 2001.
104. *Applications of Infrared Spectroscopy for Technological Surfaces*, **Y.J. Chabal**, 10<sup>th</sup> International conference on Vibrations at Surfaces (June 17-21, 2001, St Malo, France)
103. *Semiconductor Surface Passivation: Initial nitridation and oxidation of silicon surfaces*, **Y.J. Chabal**, Samuel McElvain Lecture, Department of Chemistry, University of Wisconsin, May 3, 2001, Madison, WI.
102. *Interfacial Chemistry in Direct Wafer Bonding*, **Y.J. Chabal** and M.K. Weldon, Materials Research Society Spring Meeting, April 16-20, 2001, San Francisco, CA.
101. *Semiconductor Surface Passivation: initial oxidation of silicon surfaces*, **Y.J. Chabal**, UCLA Seminar in Chemical Engineering, March 15, 2001, Los Angeles, CA.
100. *Mechanistic Studies of Dielectric Growth on Silicon*, **Y.J. Chabal**, American Physical Society March Meeting, March 12-15, 2001, Seattle, VA.
99. *Applications of Infrared Absorption Spectroscopy in the Microelectronic Industry*, **Y.J. Chabal**, Nicolet Research Symposium, Jan. 25, 2001, Princeton, NJ.
98. *Kinetic Monte Carlo mechanistic study of Si(100) initial thermal oxidation*, A. Estève, **Y.J. Chabal**, K. Queeney, K. Raghavachari, M.K. Weldon, M.D. Rouhani, 28<sup>th</sup> Conference on the Physics and Chemistry of Semiconductor Interfaces, Jan. 7-11, 2001, Orlando, FL.
97. *Mechanistic Studies of the initial Si(100)-(2x1) Oxidation and Nitridation*, **Y.J. Chabal**, Surface and interface physics Seminar series at the CEA Saclay, Nov. 17, 2000, Saclay, France.
96. *The role of hydrogen in silicon exfoliation by H<sup>+</sup>-implantation*, **Y.J. Chabal**, 16<sup>th</sup> International Conference on the Application of Accelerators in Research and Industry (CAARI), Nov. 1-4, 2000, Denton, TX.
95. *Mechanistic studies of direct wafer bonding and silicon passivation*, **Y.J. Chabal**, Materials Physics Colloquium, Rutgers University, New Brunswick, NJ, March 28, 2000.
94. *FTIR Studies of the Si/SiO<sub>2</sub> Interface*, **Y.J. Chabal** and K.T. Queeney, Nicolet Technical Symposium (Foster City, CA, Feb. 8, 2000)
93. *Interface Formation in the Growth of Oxides and Nitrides*, **Y.J. Chabal** and K.T. Queeney, 1999 Semiconductor Interface Specialists Conference, Charleston, South Carolina, Dec. 2-4, 1999.
92. *Mechanistic studies of wafer bonding and thin silicon film exfoliation*, **Y.J. Chabal**, M.K. Weldon and E. Isaacs, Fall Symposium of the Materials Research Society (Boston, MA) Nov. 29-Dec.3, 1999
91. *Nature of the Si-SiO<sub>2</sub> Interface: a vibrational study*, **Y. J. Chabal**, Workshop on the Si-SiO<sub>2</sub> and the SiC-SiO<sub>2</sub> Interfaces – Similarities and Differences, Vanderbilt University, Nashville, TN, Nov. 4-5, 1999
90. *The Structure and Composition of Wet Chemical Oxides: A photoemission and infrared study*, R.L. Opila, J. Eng, Jr., **Y.J. Chabal**, J. M. Rosamilia, and M.L. Green, Electrochemical Society Meeting, Fall 1999, Honolulu, Hawaii.

89. *Infrared Spectroscopy as a Probe of Semiconductor/Dielectric Interfaces: Growth and Structure of SiO<sub>2</sub> on Si*, K.T. Queeney, M.K. Weldon, **Y.J. Chabal** and K. Raghavachari, 46<sup>th</sup> International Symposium of the American Vacuum Society (Seattle, WA, Oct. 25-29, 1999)
88. *FTIR Studies of the Growth and Structure of the SiO<sub>2</sub>/Si Interface*, K.T. Queeney, **Y.J. Chabal**, M.K. Weldon and K. Raghavachari, Meeting of the American Chemical Society, New Orleans, LO, Aug. 23-27, 1999.
87. *The mechanism of the initial oxidation of Si(100)-(2 x 1) as studied by external transmission infrared spectroscopy and density functional theory*, **Y.J. Chabal**, M.K. Weldon, K.T. Queeney and K. Raghavachari, 12<sup>th</sup> International Conference on Fourier Transform Spectroscopy, Tokyo, Japan, Aug. 22-27, 1999.
86. *Smart-Cut Technologies and Processes: Infrared Absorption Spectroscopies*, **Y.J. Chabal**, M.K. Weldon, Y. Caudano, B. Stefanov and K. Raghavachari, 20<sup>th</sup> International Conference on Defects in Semiconductors (ICDS-20), Berkeley, CA, July 26-30, 1999.
85. *Elementary Processes in Silicon Oxidation*, **Y.J. Chabal**, Fifth International Conference on Atomically Controlled Surface and Interfaces, Aix-en-Provence, France (July 5-8, 1999)
84. *FTIR Studies of the Growth and Structure of Ultrathin SiO<sub>2</sub> Films on Silicon*, **Y.J. Chabal**, K.T. Queeney, M.K. Weldon and K. Raghavachari, International Conference on the Next Generation Materials and Devices for Silicon-based Microelectronics, Shanghai, China May 30-June 2, 1999.
83. *Silicon Oxidation and Ultra-thin Oxide Formation on Silicon Studied by Infrared Absorption Spectroscopy*, **Y. J. Chabal**, K. Queeney, M. Weldon, K. Raghavachari, Surface & Interface Optics Workshop, St Maxime, France, May 4-8, 1999.
82. *Semiconductor Surface Passivation*, Moses Gomberg Lecture, University of Michigan, April 15, 1999
81. *Initial Steps in Silicon Oxidation and Nitridation: From discrete SiO<sub>x</sub> and Si-N<sub>x</sub> surface structures to continuous films*, K. T. Queeney, **Y.J. Chabal**, M.K. Weldon, B. Stefanov and K. Raghavachari, Materials Research Society Spring Meeting, San Francisco, CA (April 5-9, 1999)
80. *Initial Growth of Silicon Oxide, Nitride and Oxynitride*, **Y.J. Chabal**, Annual Meeting of the American Physical Society, Atlanta, GA (March 22-26, 1999)
79. *Exotic structures on oxidized Silicon surfaces*, 26<sup>th</sup> International Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI-26) San Diego, CA (January 17-21, 1999)
78. *Ultra-thin Oxides and Semiconductor Surface Passivation*, Nicolet Research Symposium, New Brunswick, NJ (Oct. 14, 1999) and Philadelphia, PA (Dec. 3, 1999)
77. *The Fundamental Mechanisms of Silicon Wafer Bonding and Layer Exfoliation*, M.K. Weldon and **Y.J. Chabal**, International Symposium of the American Vacuum Society, Baltimore, MD (Nov. 2-6, 1998)
76. *Water Induced Oxidation on Si(100)*, **Y.J. Chabal**, 216<sup>th</sup> American Chemical Society National Meeting (Boston, MA) Aug. 23-27, 1998.
75. *Theoretical Studies of Silicon Oxidation*, K. Raghavachari, B.B. Stefanov, **Y.J. Chabal**, and M.K. Weldon, Workshop on Semiconductor Surface Chemistry (Telluride, CO) Aug. 9-14, 1998.
74. *Mechanisms of the Initial Oxidation of Si(100)-(2x1)*, **Y.J. Chabal**, M.K. Weldon, B.B. Stefanov, A.B. Gurevich, and K. Raghavachari, Workshop on Semiconductor Surface Chemistry (Telluride, CO) Aug. 9-14, 1998.

73. *Infrared Spectroscopy of Silicon Defects, Platelets and Exfoliation upon hydrogen Implantation and Remote Plasma Hydrogenation*, **Y.J. Chabal**, Gordon Research Conf. on Point Defects in Semiconductors (New London, NH) July 12-17, 1998.
72. *Silicon surface oxidation*, **Y.J. Chabal**, Workshop on Macroscopic and Microscopic Characterization of Semiconductor Surfaces and Interfaces (U. Texas, Austin, TX) April 20-21, 1998.
71. *Studies of Silicon Oxidation*, B.B. Stefanov, K. Raghavachari, **Y.J. Chabal** and M.K. Weldon, American Chemical Society, Spring meeting (Dallas, TX) March 30-April 3, 1998.
70. *How does Silicon Oxidize? Infrared Studies of H<sub>2</sub>O oxidation on Si(100)*, **Y.J. Chabal**, Physics Colloquium, City University of New York (Queens College, NY) March 9, 1998.
69. *Mechanistic Studies of Silicon Wafer Bonding and Layer Exfoliation*, M.K. Weldon, V.E. Marsico, **Y.J. Chabal**, et al., 4<sup>th</sup> Intern. Symposium on Semiconductor Wafer Bonding: Science Technology and Applications (Paris, France), Aug. 31-Sept. 5, 1997.
68. *Industrial Challenges as Research Opportunities: Silicon Wafer Bonding and Silicon Exfoliation*, **Y.J. Chabal**, American Electronic Materials and Devices 1997 Seminar series, (Princeton University, Princeton, NJ) May 12, 1997.
66. *Mechanistic Studies of the Initial Oxidation of Silicon*, M.K. Weldon, B.B. Stefanov, K. Raghavachari, and **Y.J. Chabal**, American Chemical Society Spring meeting (San Francisco, CA), April 7-10, 1997.
67. *Vibrational Studies of the water-induced oxidation of Si(100)*, M.K. Weldon, J. Eng, Jr., B.E. Bent, **Y.J. Chabal** and L.M. Struck, Symposium honoring the memory of Prof. Brian E. Bent, 213<sup>th</sup> American Chemical Society Meeting, San Francisco, CA, April 13-16, 1997.
65. *Infrared Spectroscopy of Hydrogen at Surfaces and Interfaces*, **Y.J. Chabal**, American Physical Society March Meeting (Kansas City, MO), March 17-21, 1997
64. *The Ubiquitous Role of Oxygen and Hydrogen in Silicon Processing: A surface scientist view*, **Y.J. Chabal**, 11<sup>th</sup> Annual Symposium of the Lab. Surface Modification (Rutgers, NJ), Feb. 13, 1997.
63. *Infrared Spectroscopy as a Probe of Fundamental Processes occurring at Buried Interfaces*, M. K. Weldon and **Y.J. Chabal**, Nicolet Instrument Corporation Research Symposium (Pasadena, CA) Jan. 15, 1997.
62. *Applications of Infrared Spectroscopy to the Microelectronics Industry*, **Y.J. Chabal**, Neuvieime Entretiens du Centre Jacques Cartier sur Surfaces and Interfaces of Advanced Materials (Montreal, Canada) Oct. 2-4, 1996.
61. *Electron-Phonon coupling Signatures in HREELS and IR Spectra of Ultrathin Fullerene Films on Metals*, P. Rudolf, P. Dumas, K. Hevesi, R. Caudano, G.P. Williams, L.M. Struck and **Y.J. Chabal**, 8<sup>th</sup> International Conf. on Vibrations at Surfaces (Birmingham, England) June 23-27, 1996.
60. *Infrared Spectroscopy as a Probe of Fundamental Processes in Microelectronics: Silicon wafer Cleaning and Bonding*, M.K. Weldon and **Y.J. Chabal**, 8<sup>th</sup> International Conf. on Vibrations at Surfaces (Birmingham, England) June 23-27, 1996.
59. *Spectroscopic Fingerprints at H/Si(111)-(1x1) and Ag/H/Si(111)-(1x1) Interfaces*, P. Dumas and **Y.J. Chabal**, European Research Conf. on Fundamental Aspects of Surface Science: Semiconductor Surfaces (Blankerberge, Belgium) June 7-11, 1996.
58. *Industrial Challenges as Opportunities for Basic Research: Silicon Wafer Bonding*, **Y.J. Chabal**, Chemical Physics Colloquium, Columbia University (Feb. 6, 1996).

57. *Physics and Chemistry of Silicon Wafer Bonding: an infrared Absorption study*, **Y.J. Chabal**, M.K. Weldon, S.B. Christman, E.E.Chaban, L.C. Feldman, D.R. Hamann, et al., 23<sup>rd</sup> conf. on the Physics and Chemistry of Semiconductor Surfaces (La Jolla, CA) Jan. 21-25, 1996.
56. *Industrial Challenges as Opportunities for Basic Research: Silicon-on-Insulator and Silicon Wafer Bonding*, **Y.J. Chabal**, Materials Science Department Colloquium, (Stony Brook, NY) Nov. 1, 1995.
55. *Interface Infrared Characterization of Direct-bonded Si-Si Substrates*, **Y.J. Chabal**, et al., Workshop on Direct Silicon-silicon Bonding for Power Devices, NRL (Washington DC) Nov. 9, 1995.
54. *Infrared Spectroscopy of Semiconductor Surfaces and Interfaces*, **Y.J. Chabal**, Gordon Conf. on Excitation at Semiconductor Surfaces: Fundamental Concepts and Applications in Semiconductor Processing (Hoahu, Hawaii) Nov. 13-18, 1994.
53. *Cleaning of Semiconductor Surfaces: Infrared Characterization*, **Y.J. Chabal**, Y. Ma and R. Gottscho, American Vacuum Society 6<sup>th</sup> Conf. on Quantitative Surface Analysis (Minneapolis, MN) Oct. 16-20, 1995.
52. *Characterization of Silicon Surfaces and Interfaces by Vibrational Spectroscopy*, **Y.J. Chabal**, M.A. Hines and D. Feijoo, 41<sup>st</sup> National Symposium of the American Vacuum Society (Denver, CO) Oct. 24-28, 1994
51. *Atomic Scale Removal Mechanism during Chemo-mechanical Polishing of Si(100) and Si(111)*, G.J. Pietsch, G.S. Higashi and **Y.J. Chabal**, 14<sup>th</sup> European Conf. on Surface Science (ECOSS-14) (Leipzig, Germany) Sept. 19-23, 1994.
50. *Phase Relaxation of the Si-H stretch mode on Stepped H/Si(111) Surfaces*, P. Jakob and **Y.J. Chabal**, 14<sup>th</sup> European Conf. on Surface Science (ECOSS-14) (Leipzig, Germany) Sept. 19-23, 1994.
49. *Hot Water Etching of Silicon Surfaces: Mechanisms and Implications to Device Fabrication*. G. Higashi, T. Boone, K. Hanson **Y.J. Chabal** et al, Symposium on UltraClean Processing of Silicon Surfaces (Bruges, Belgium) Sept. 9-14, 1994.
48. *Vibrational Characterization and Electronic Properties of ordered, ideally hydrogen – terminated Si(111) Surfaces*, P. Dumas and **Y.J. Chabal**, 18<sup>th</sup> Int. Sem. On Surface Physics (Kudowa, Poland) June 6-11, 1994.
47. *Vibrational and Electronic Properties of H/Si(111)-(1x1) Surfaces*, P. Dumas and **Y.J. Chabal**, Ann. Meeting of the Belgium Physical Society (Mons, Belgium) May 26-27, 1994.
46. *Vibrational Dynamics at Surfaces*, P. Dumas and **Y.J. Chabal**, 14<sup>th</sup> Int. General Conf. of the Condensed Matter Division (Madrid, Spain) March 28-31, 1994.
45. *Chemo-mechanical polishing of Silicon: Chemical Surface Termination and Atomic Mechanism of Removal*, G.J. Pietsch, G.S. Higashi and **Y.J. Chabal**, Annual Meeting of the German Physical Society (Muenster, Germany) March 21-24, 1994.
44. *Dimensions of Luminescent Porous Silicon Structures*, S. Schuppler, S.L Friedman, M.Marcus, **Y.J. Chabal** et al., American Physical Society March Meeting (Pittsburgh, PA) March 21-25, 1994.
43. *Chemical Preparation and Structure Characterization of Hydrogen terminated Si(111) Surfaces*, **Y.J. Chabal**, American Physical Society March Meeting (Pittsburgh, PA) March 21-25, 1994.
42. *Surface Vibrational Spectroscopies for Silicon Processing*, **Y.J. Chabal**, Int. conf. on Advanced Microelectronic Devices and Processing, Sendai, Japan, March 3-5, 1994.

41. *Chemically prepared Silicon Surfaces studied by Optical Spectroscopy*, **Y.J. Chabal**, Materials Science Colloquium, University of Wisconsin (Madison, WI) Nov. 11, 1993.
40. *Adsorbate Vibrations at Semiconductor Surfaces*, **Y.J. Chabal**, ONR Workshop on Surface Dynamical Processes (Nashville, TN) Oct. 28-29, 1993.
39. *Using Vibrational Spectroscopy to probe Adsorbate Orientations and Structure on Silicon Surfaces*, M.A. Hines and **Y.J. Chabal**, American Chemical Society Meeting (Washington, DC) Aug. 23-27, 1993.
38. *Interadsorbate Vibrational Energy Flow on stepped H/Si(111) Surfaces*, M. Morin, K. Kunhke, P. Jakob, **Y.J. Chabal**, A.L. Harris, 7<sup>th</sup> Int. Conf. on Vibrations at Surfaces (Portofino, Italy) June 14-17, 1993.
37. *Chemical Reactions at the silicon/solution interface studied by optical spectroscopy*, **Y.J. Chabal**, Semiconductor Surface Reactions: and exchange between Electrochemistry and Surface Science workshop (Amsterdam, Netherland) June 8-14, 1993.
36. *Chemistry on Silicon Surfaces by Optical Spectroscopy*, **Y.J. Chabal** and M.A. Hines, American Chemical Society Meeting (Denver, CO) March 28-April 2, 1993.
35. *Vibrational Spectroscopy of Adsorbates at Semiconductor Surfaces*, **Y.J. Chabal**, Gordon conference on Chemical Reactions at Surfaces (Ventura, CA) March 8-12, 1993.
34. *Recent Advances in Surface Science Techniques*, **Y.J. Chabal**, American Vacuum Society Tutorial, 39<sup>th</sup> National Symposium (Chicago, IL) Nov. 8, 1992.
33. *Infrared Spectroscopy of Semiconductor Surfaces: Hydrogen-terminated Silicon Surfaces*, Y.J. Chabal, 11<sup>th</sup> European congress on Molecular Spectroscopy (Vienna, Austria) Aug. 23-28, 1992.
32. *Etching of Silicon(111) and (100) in HF solutions: H-termination, atomic structure and overall morphology*, **Y. J. Chabal**, Materials Research Society Conference (San Francisco, CA) April 27-May 1, 1992.
31. *Optical Techniques for Surface Science*, **Y.J. Chabal**, APS March Meeting (Indianapolis, IN) March 15, 1992.
30. *Infrared Spectroscopy of Chemically prepared Silicon Surfaces*, **Y.J. Chabal**, Fujitsu Laboratories (Atsug, Japan) Jan. 25, 1992.
29. *Infrared Spectroscopy of Semiconductor Surfaces*, **Y.J. Chabal**, Musashi Institute of Technology (Tokyo, Japan) Jan. 20, 1992.
28. *Infrared Spectroscopy of Chemically prepared Silicon Surfaces*, **Y.J. Chabal**, Colloquium, Tohoku University (Sendai, Japan) Jan. 19, 1992.
27. *Control of Silicon Surfaces: Morphology by Aqueous Chemical Etching*, **Y.J. Chabal**, P. Jakob and G. S. Higashi, International Workshop on Science and Technology for Surface Reaction Process (Tokyo, Japan) Jan. 22-24, 1992.
26. *Chemically HF-etched Si(111) and Si(100): from rougher to atomically flat H-terminated Surfaces*, P. Dumas and **Y.J. Chabal**, ECOSS 12 (Stokholm, Sweden) Sept. 8-12, 1991.
25. *Chemically prepared Silicon Surfaces: etching proces, hydrogen termination, surface structure and vibrational dynamics*, **Y.J. Chabal**, 2<sup>nd</sup> Pennsylvania Surface Science Workshop, Lehigh University (Lehigh, PA) July 17-19, 1991.
24. *Terminaison hydrogène du Si(100)*, K. Berrada, P. Dumas and **Y.J. Chabal**, Journées de la Société de Chimie Physique (Paris, France) May 21, 1991.

23. *Hydrogen chemisorption on Semiconductor and Metal Surfaces: infrared absorption studies of H interactions with the substrate*, **Y.J. Chabal**, Symposium on Hydrogen in and on solids, American Chemical Society Meeting (Atlanta, GA) April 14-19, 1991.
22. *Hydrogen passivation of Silicon Surfaces using HF etching*, **Y.J. Chabal**, Symp. on Silicon Hydride Chemistry and Silicon CVD Mechanics, American Chemical Society Meeting (Atlanta, GA) April 14-19, 1991.
21. *Infrared Spectroscopy of H on W(100) and Mo(100)*, **Y.J. Chabal**, European Science Foundation Workshop on the (100) surface of Tungsten: Phase transitions and adsorbate-induced reconstruction (Cambridge, England) March 25-27, 1991.
20. *Adsorbate-substrate Vibration: H on Si(111)*, **Y.J. Chabal**, American Physical Society March Meeting (Cincinnati, OH) March 18-22, 1991.
19. *Infrared Spectroscopy of chemically-prepared Silicon Surfaces*, **Y.J. Chabal**, Columbia Radiation Laboratory Seminar (New York, NY) March 11, 1991.
18. *Surface Infrared Spectroscopy and its Applications to the Vibrational Dynamics of the Ideally Hydrogen-terminated Si(111) Surface*, **Y.J. Chabal**, Chemical Physics Seminar Princeton University (Princeton, NJ) Jan. 31, 1991
17. *Dynamics of the ideally H-terminated Si(111) Surface studied by Vibrational Spectroscopy*, **Y.J. Chabal**, Surface Science Seminar, University of Pennsylvania (Philadelphia, PA) Nov. 2, 1990.
16. *Vibrational Spectroscopy of Hydrogen-terminated Silicon Surfaces*, **Y.J. Chabal**, condensed Matter Seminar, Ohio University (Athens, OH) Nov. 1, 1990.
15. *Hydrogen Passivation of Silicon Surfaces investigated with Infrared Spectroscopy*, **Y.J. Chabal**, 37<sup>th</sup> Ann.American Vacuum Society Symposium & Topical Conferences (Toronto, Canada) Oct. 8-12, 1990.
14. *Dynamics of the ideally H-terminated Si(111) Surface studied by Vibrational Spectroscopy*, **Y.J. Chabal**, 17<sup>th</sup> Annual meeting of the Fed. Anal. Chem. And Spect. Soc. (Cleveland, OH) Oct. 7-12, 1990.
13. *Infrared Spectroscopy of Hydrogen on Semiconductor Surfaces*, **Y.J. Chabal**, 6<sup>th</sup> Trieste Semiconductor Symposium on Hydrogen in Semiconductors: Bulk and Surface Properties (Trieste, Italy) Aug. 27-31, 1990.
12. *Infrared Spectroscopy of Water-modified Silicon Surfaces*, **Y.J. Chabal**, Gordon conf. on Fundamental Interactions of Water with Solid Surfaces (meridien, NH) July 16-20, 1990.
11. *Dynamics of Ideally H-terminated Si(111) Surface*, **Y.J. Chabal**, 26<sup>th</sup> Int.Yamada Conference on Surface as a New Material (Osaka, Japan) July 2-6, 1990.
10. *Chemistry at Semiconductor Surfaces studied by Infrared Spectroscopy*, **Y.J. Chabal**, First Catalysis Research Center Int. Symp. on Frontiers of Surface Chemistry (Hokkaido, Japan) June 28-29, 1990.
9. *Infrared Spectroscopy of Chemically Prepared Silicon Surfaces: Hydrogen Terminated Si(111)*, **Y.J. Chabal**, Condensed Matter Physics Seminar, Rutgers University (Piscataway, NJ) May 10, 1990.
8. *Spectroscopie Infrarouge de Surface Resolue en Temps et dans l'Infrarouge Lointain*, **Y.J. Chabal**, LURE (Orsay, France) Jan. 29, 1990.
7. *Etude par Spectroscopy Infrarouge des Surfaces de Silicium Modifiées Chimiquement*, **Y.J. Chabal** Ecole Polytechnique (Palaiseau, France) Jan. 25, 1990.

6. *Etude par Spectroscopy Infrarouge des Surfaces de Silicium Modifiées Chimiquement*, **Y.J. Chabal**, Séminaire spécialisé at the CEA (Saclay, France) Jan. 24, 1990.
5. *Etude par Spectroscopy Infrarouge des Surfaces de Silicium Modifiées Chimiquement*, **Y.J. Chabal**, Séminaire de l'Institut de Physique et Chimie des Matériaux, University of Nantes (Nantes, France) Jan. 22, 1990.
4. *Infrared Spectroscopy of Chemically Modified Silicon Surfaces*, **Y.J. Chabal**, Seminar for Interdisciplinary Laboratory of Electronic Spectroscopy, University of Namur (Namur, Belgium), Jan. 19, 1990.
3. *Infrared Spectroscopy of Chemically Modified Silicon Surfaces*, **Y.J. Chabal**, Institute Seminar, University of Hannover (Hannover, Germany) Jan. 18, 1990.
2. *Infrared Spectroscopy of Chemically Modified Silicon Surfaces*, **Y.J. Chabal**, Solid State Seminar, University of Dusseldorf (Dusseldorf, Germany) Jan. 17, 1990.
1. *Infrared Spectroscopy of Chemically Modified Silicon Surfaces*, **Y.J. Chabal**, Physics Colloquium at Fritz-Haber Institute (Berlin, Germany) Jan. 16, 1990.