# GIANFRANCO VIDALI

## Present Title, Position, and Institute

Physics Professor, Physics Department, Syracuse University

## Degrees and Education

Ph.D. (Physics), Pennsylvania State University, 1982
Doctorate in Physics, University of Genoa (Italy), 1977

## Affiliations:

- American Astronomical Society
- American Physical Society (Fellow)
- International Astronomical Union
- American Chemical Society
- American Association for the Advancement of Science
- Sigma Xi
- COSPAR (Committee on Space Research)

## Research Areas, Topics and Interests:

- **Experimenta**l: Laboratory astrophysics (physics & chemistry of the interstellar medium and of planetary atmospheres), surface physics, low temperature physics, and chemical physics
- **Theoretical**: theory of the atom-surface interaction; statistical mechanics of two-dimensional matter, modeling of reactions occurring at surfaces

## Service Roles and Activities (most recent)

University:

- Chair of the Senate Committee on the Library (AY 2011-2012)
- Member of the Senate Committee on the Library (2008-current)
- Co-chair of the Senate Committee on Services to Faculty and Staff (2001-2007)
- Senator of the Syracuse University Senate (2001 – 2007; 2008-2010; 2012-2014)
- Chair of the Tenure and Promotion Committee Art & Sciences (AY 2009-2010)
- Member of the Tenure and Promotion Committee of the College of Arts and Sciences (2004-2007; 2009-2011; 2013-2016)
- Member of the Chancellor's Health-Care Advisory Committee (2003-current)
- Vice-president of the AAUP Syracuse University Chapter (current)
- Director of the Physics Department Clinic (current)

Profession:

- Chair of the Working Group on Solids and Their Surfaces of the International Astronomical Union Commission 14 on Atomic and Molecular Data (2008-current).
- Member of the Executive Committee of the Laboratory Astrophysics Division of the American Astronomical Society (2013-)
- Chair of the New York State Section of the American Physical Society (2001-2002)
- Secretary/Treasurer of the NYSS-APS (2009-2017)
- Past voting member of the American Physical Society Council (2003-2006)

- Member of the American Physical Society *Committee on Informing the Public* (2007-2010)
- Active in lobbying Congress on behalf of the American Physical Society
- Organizer/co-organizer of meetings/workshops at: Princeton University (1990), New York State Section of APS (Syracuse University, 2008), Cornell University, Pacifichem (Hawaii, 2011), Astrochem Workshop (Kolkata, India, 2012), 1st Workshop on Experimental Laboratory Astrophysics (Kauai, HI) (2013), Scientific Event at the 40th COSPAR Scientific Assembly (Moscow, 2014)
- Regular reviewer for: Astrophysical Journal and Letters, Astronomy & Astrophysics, Monthly Notices of the Royal Astronomical Society, Physical Review B and E and Physical Review Letters, Journal of Chemical Physics, Journal of Physical Chemistry, Physical Chemistry Chemical Physics
- Member of panels and/or reviewer of proposals for: NASA (APRA, Origins of Solar Systems, Cosmochemistry, SOFIA, Astrophysics Data Program), NSF (Astronomy & Astrophysics, Materials Science, EPSCoR), CUNY, NWO Astrochemistry Programme (the Netherlands), Rannsóknamiðstöð Íslands/The Icelandic Centre for Research, CNRS (France), Petroleum Research Fund, Cottrell Research Grants

## Professional Experience and Positions:

- Professor of Physics, Syracuse University, 1998 – present
- Adjunct Astronomer, Observatoire de Paris, Fall 2012
- Forensic & National Security Science Institute Affiliated Faculty (SU), 2010-present
- Visiting Professor at the Universite' de Cergy-Pontoise (8/2000; 6/2009; 6/2010, 6/2011)
- Visiting Faculty, NASA Astrobiology Institute, Univ. of Hawaii, 2/2008-3/2008
- Associate Professor of Physics, Syracuse University, 1990-1998
- Visiting Associate Professor, Pennsylvania State University, Spring 1995
- Visiting Research Fellow, Princeton University, Fall 1990
- Assistant Professor of Physics, Syracuse University, 1984-1990
- Alfred P. Sloan Fellowship, 1986
- Post-doctoral position at Caltech, 1982-1984

## Awards and Honors

2007 American Physical Society Fellow
1986 Alfred P. Sloan Fellowship
1985 Sigma Xi
1983 Winner National Competition for Research Position at University of Genoa
1983 Ph.D. Dissertation as one of the best five in the U.S.A. in Mathematical and Physical Sciences 1981-1983 (Committee for the Council of Graduate Schools in the U.S.A.)
1980 Consiglio Nazionale delle Ricerche Fellow
1979 American Vacuum Scholar

## Publications

About 130 publications (list attached), one book and more than 2,800 citations.

## Most Recent Invited Presentations

List doesn't include invited presentations by collaborators on common projects. Most recent (2005-present):
American Chemical Society National Meeting (Dallas, Tx, 2014), State-of-the-Art Astrochemistry Summer School (Observatoire de Paris, Sept. 2013), 1st Laboratory Astrophysics Workshop (Kauai, Febr. 2013), Astrochem (Kolkata, India, July 2012), COSPAR (Mysore, India, July 2012), New York State Section of APS (Oneonta College, October 2011), Meudon Observatoire (Paris, June 2011), Titan Workshop (Kauai, April 2011), Ohio State Univ. (Colloquium, Physics Dept., Febr.2011), Pacifichem (Hawai'i, Dec. 2010), NASA Laboratory Astrophysics Workshop (Gatlinburg, TN, Nov. 2010), American Chemical Society (San Francisco, 2010), Dust and Ice Workshop (Athens, Ga, 2010), Advancing Chemical Understanding through Astronomical Observations Workshop (Green Bank, WV, 2009), Reunion Pleniere de GDR Arches (La Londe Les Maures, France, 2009), Observatoire de Paris (Paris, France, 2009), University of Missouri at Columbia (Colloquium, Physics Dept. 2008), University of Missouri at Columbia (Seminar, Physics Dept. 2008), AAS Meeting– St.Louis (2008), NASA-Ames (Seminar, 2008), University of Hawaii (Chemistry Department, 2008), NASA Astrobiology Institute (Univ. of Hawaii, 2008), Catania's Astronomical Observatory (Catania, Italy, 2008), McMaster University (Colloquium, Astronomy, 2007), Fall Symposium of the New York State Section of APS (Skidmore College, NY, 2007), Union College (Colloquium, Physics - 2007), Nobel Symposium (Sweden, 2006), Faraday Discussion (France, 2006), American Chemical Society National Meeting (Atlanta, GA, 2006), IAU (International Astronomical Union) Symposium 231 (Asilomar, Ca, 2005), University of Rochester (Astronomy) (2005).

## Grants

- **Current**:
  - NSF (Astronomy and Astrophysics) – P.I. in: *Formation of Molecular Hydrogen and Water on Warm Grains*
  - NASA grant for observations at Keck: P.I. in *A Search for the Spectral Signature of Molecular Hydrogen Formation on Dust in X-ray PNe*
- **Past:** National Science Foundation (Programs: Astronomy & Astrophysics, Planetary Astronomy, Electronic Materials; Education: MRA and CCD), NASA (Astrophysics Branch; Origins of Solar Systems, Education), Space Telescope Science Institute (education grant), Caltech's President Fund, Research Corporation, Petroleum Research Fund, Alfred P. Sloan Foundation

## Teaching and Mentoring

Selected list of undergraduate courses: Physics of the 21st Century, General Physics I & II and Honors, Introduction to Stellar Astrophysics, Introduction to Astrobiology, Intermediate Mechanics.

Graduate courses: Statistical Mechanics and Thermodynamics, Condensed Matter Physics, Astrophysics, Electromagnetism.

Advising: Lower Division advisor for incoming students and Freshman Forum

I host on a regular basis undergraduate and graduate students who are eager to work on research projects as part of their academic program or as working apprenticeship.

## Outreach Activities

I have given several lectures for the general public at Syracuse University, at Symposia organized by the New York State Section of the American Physical Society, at high schools and colleges

I was instrumental in developing and then managing a program of outreach funding at the New York State Section of the American Physical Society. I was contacted by APS headquarters about our program because they wanted to have one nationwide. I also served on the APS Committee on Informing the Public that was tasked to increase the awareness and appreciation of physics among the general public.

# Publications of Gianfranco Vidali - January 2014

- 131. J.He and G.Vidali "Experiments of water formation on warm silicates", submitted to *Astrophys. J.* (2014).
- 130. J.He, D.Jing, and G.Vidali "Atomic oxygen diffusion on and desorption from amorphous silicate surfaces", *Phys.Chem.Chem.Phys.* accepted (2013).
- 129. J.He and G.Vidali: "Application of a diffusion-desorption rate equation model in astrochemistry", *Faraday Discussions* **168**, accepted (2013).
- 128. G.Vidali: "$H_2$ Formation on Interstellar Grains", *Chem. Rev.* **113**, 8762 (2013).
- 127. J.Petucci, C.LeBlond, M.Karimi, and G.Vidali: "Diffusion, adsorption, and desorption of molecular hydrogen on graphene and in graphite", *J.Chem.Phys.* **139**, 044706 (2013).
- 126. L.Gavilan, J.L.Lemaire, G.Vidali, T.Sabri and C.Jager "The formation of molecular hydrogen on silicate dust analogs: the rotational distribution", *Astrophys. J.* accepted (2013).
- 125 T.Sabri, L .Gavilan, C.Jager, J.L.Lemaire, G.Vidali, H. Mutschke, and T.Henning: "Interstellar Silicate Analogs for Grain-Surface Reaction Experiments: Gas-Phase Condensation and Characterization of the Silicate Dust Grains", *Astrophys. J.* accepted (2013).
- 124. D.Jing, J.He, M.Bonini, J.R.Brucato, and G.Vidali: "Sputtering effects and water formation on an amorphous silicate surface", *J.Phys.Chem. A*, **117**, 3009 (2013).
- 123. G.Vidali, D.Jing, and J.He: "Hydrogen and water in the interstellar medium", invited, First International Conference on Chemical Evolution and Star Formation: Astrochem 2012, AIP Conference Proceedings, **1543**, 31 (2013).
- 122. G.Vidali: "Cosmic Low Temperature Physics: making molecules on stardust", invited review, *J. Low Temp. Phys.*, **170**, 1 (2013).
- 121. L.Galivan, J.-L.Lemaire, G.Vidali, M.Chehrouri, F.Dulieu, J-H Fillion, E.Congiu, and H.Chaabouni:" Experimental determination of the ortho/para ratio of newly formed molecular hydrogen on amorphous solid water", *Astrophys. J.*, **760**, 35 (2012).
- 120. D.Jing, J.He, J.Brucato, G.Vidali, A.De Sio, and L.Tozzetti : "Formation of molecular oxygen and ozone on amorphous silicates" *Astrophys. J.* **756**, 98 (2012).
- 119. L.Galivan, J.-L.Lemaire, and G.Vidali: "Are molecule-covered dust grains efficient catalysts of $H_2$ formation in the cold ISM?". *Mon.Not.R.Astron.Soc.* 424, 2961 (2012).
- 118. L.Galivan, J.-L.Lemaire, and G.Vidali: "Formation of Deuterium Molecules in the Cold Interstellar Medium: An Experimental View" Proc. First Euro-Mediterranean Conference on Materials and. Renewable Energies (21-25 November 2011) ScienceJet 1:4 (2012).
- 117. D.Jing, J.He, J.Brucato, A.De Sio, L. Tozzetti, and G.Vidali: "On water formation in the interstellar medium: laboratory study of the O+D reaction on surfaces", *Astrophys. J. Lett.* **741**, L9 (2011).
- 116. J.He, P.Frank, and G.Vidali: "Interaction of hydrogen with surfaces of silicates: single crystal vs. amorphous", *Phys.Chem.Chem.Phys.* **13**, 15803 (2011).

- 115. G.Vidali: "Molecule Formation on Interstellar Grain", invited review in: *Proceedings of the 2010 NASA Laboratory Astrophysics Workshop* Gatlingburg, TN (2011).

- 114. J.L.Lemaire, G.Vidali, S.Baouche, M.Chehrouri, H.Chaabouni, and H.Mokrane: "Competing mechanisms of molecular hydrogen formation in conditions relevant to the interstellar medium", *Astrophys. J. Lett.* **725**, L156 (2010). .

- 113. L.Li, H.Zhao, G.Vidali, Y.Frank, I.Lohmar, H.B.Perets, and O.Biham: "Interaction of Atomic and Molecular Hydrogen with Tholin Surfaces at Low Temperatures", *J.Phys.Chem. A* **114**, 10575 (2010).

- 112. J.He, K.Gao, G.Vidali, C.J.Bennett, and R.I.Kaiser: "Formation of molecular hydrogen desorption from methane ice", *Astrophys. J.* **721**, 1656 (2010).

- 111. G.Vidali and L.Li: "Molecular hydrogen desorption from amorphous surfaces at low temperature", *J. Phys.: Condens. Matter* 22 304012 (2010).

- 110. S.Madzunkov, J.MacAskill, A .Chutjian, P.Ehrenfreund, M. Darrach, G.Vidali, and B.J. Shortt: "Formation of $H_2CO$ and $CO_2$ on an icy grain analogue using fast H atoms", *J. Phys.: Conference Series* **194**, 092005 (2009).

- 109. G.Vidali, G., L. Li, J.E., Roser, and R. Badman: Catalytic Activity of Interstellar Grains: Formation of Molecular Hydrogen on Amorphous Silicates *Adv.Space Res.* **43**, 1291(2009).

- 108. S.M.Madzunkov, J.A.MacAskill, A.Chutjian, P.Ehrenfreund, M.R.Darrach, G.Vidali, and B.J. Shortt: Formation of formaldehyde and carbon dioxide on an icy grain analogue using fast hydrogen atoms *Astrophys. J.* **697**, 801 (2009).

- 107. L.Li, G.Manicò, E.Congiu, J.Reoser, S.Swords, H.B.Perets, A. Lederhendler, O.Biham, V. Pirronello and G.Vidali: "Formation of Molecular Hydrogen on Amorphous Silicate Surfaces", Proc. of "Molecules in Space and Laboratory", Ed. J.L.Lemaire and F.Combe (2008).

- 106. G.Vidali, V. Pirronello, L.Li, J.Roser, G.Manico', H.Mehl, A.Lederhendler, H.B.Perets, J.R.Brucato, and O.Biham: "Analysis of Molecular Hydrogen Formation on Low Temperature Surfaces in Temperature Programmed Desorption Experiments", *J.Phys.Chem. A*, **111**, 12611 (2007).

- 105. H.B.Perets, A.Lederhendler, O.Biham, G.Vidali, L. Li, S.Swords, E. Congiu, J. Roser, G.Manico', J.R.Brucato, V. Pirronello: "Molecular Hydrogen Formation on Amorphous Silicates Under Interstellar Conditions" *Astrophys. .J.* **661**, L163 (2007).

- 104. V.Pirronello, G.Manico', E.Congiu, G.Vidali, A.Insolia, R.Caruso: "The Galactic Interstellar Medium: an Overview", *Nucl.Phys.B (Proc.Suppl.)* 165, 87 (2007).

- 103. G.Vidali, J.E. Roser , E. Congiu, L. Li, G. Manico', and V.Pirronello: "Use of Laboratory Data to Model Interstellar Chemistry", Proc. of the 2006 NASA Laboratory Workshop, Ed. by P.F.Weck and V.H.S.Kwong, p.77 (2006).

- 102. G. Vidali , J.E. Roser , L. Li , E. Congiu, G. Manico', and V.Pirronello: "The Formation of Interstellar Molecules via Reactions on Dust Grain Surfaces" *Faraday Discussion* **133**,125 (2006).

- 101. G.Vidali, J.E.Roser, G.Manico', and V. Pirronello: Molecular Hydrogen Formation on Dust Grains: A Summary of Experimental Results on Molecular Hydrogen Formation on Dust Grain Analogues *Proceedings IAU Symposium No. 231*, D.C. Lis, G.A. Blake & E. Herbst, eds., (2005) p.355

- 100. H.B.Perets, O.Biham, G.Manico', V.Pirronello, J.Roser, S. Swords, and G.Vidali: "Molecular Hydrogen Formation on Ice Under Interstellar Conditions", *Astrophys. J.* **627**, 850 (2005).

- 99. G.Vidali, J.E.Roser, G.Manico', V.Pirronello, H.B.Perets, and O.Biham: "Formation of Molecular Hydrogen on Analogues of Interstellar Dust Grains: Experiments and Modelling" *J. Phys.: Conference Series* **6**, 36 (2005).

- 98. G.Vidali, J.E.Roser, G.Manico', and V.Pirronello: "Laboratory Studies of Formation of Molecules on Dust Grain Analogues under ISM Conditions", *J. Geophys. Res.* **109** E07S14 (2004).

- 97. G.Pirronello, G.Manico', J.E.Roser, G.Vidali: "Dust Chemistry in the Laboratory" in *The Dense Interstellar Medium in Galaxies*, Ed. by S. Pfalzner et al. (Springer-Verlag, Berlin) p. 525 (2004).

- 96. G.Vidali, J.Roser, V.Pirronello, G.Manico' : "Experimental Studies of the Formation of Molecular Hydrogen and Carbon Dioxide on Dust Grain Analogues", solicited paper for *Advances in Space Reviews*, **33**, 6 (2004).

- 95. J.E.Roser, S.Swords, G.Vidali, G.Manico', and V.Pirronello: "Measurement of the kinetic energy of hydrogen molecules desorbing from amorphous water ice", *Astrophys. J.* **595**, L55 (2003).

- 94. V.Pirronello, G.Manico', J.E.Roser and G.Vidali: "$H_2$ Formation on Dust Grains", invited review in *Astrophysics of Dust*, ed. by A.Witt et al. (2003) p.529.

- 93. O.Biham, V.Pirronello, and G.Vidali: "Chemical Reactions on Solid Surfaces of Astrophysical Interest", invited review in *Proceeding of the Ettore Majorana Summer School on Solid State Astrochemistry*, Ed. by V.Pirronello et al., (Kluwer Academic Publishers), (2003) p.211-250.

- 92. L.Colangeli, G.Vidali, and others: "The role of laboratory experiments in the characterization of silicon-based material", invited review in *Astronomy and Astrophysics Reviews* **11**, 97 (2003).

- 91. J.E.Roser, G.Vidali, G.Manico', and V.Pirronello: "Formation of Molecular Hydrogen on Amorphous Water Ice" Conference Proceedings of Chemistry as Diagnosis of Star Formation", Ed. by C.L.Curry and M.Fich (2003) p.32

- 90. J.Roser, G.Manico', V.Pirronello, and G.Vidali: "Formation of Molecular Hydrogen on Amorphous Water Ice: Influence of Morphology and Ultraviolet Exposure" *Astrophys. J.* **581**, 286 (2002).

- 89. G.Vidali , J. Roser , G. Manico', and V. Pirronello: *Proceedings of the NASA Laboratory Astrophysics Workshop*, p.224 (2002).

- 88. J. Roser, G.Vidali, G. Manico', and V. Pirronello:. "Formation of Carbon Dioxide by Surface Reactions on Ices in the Interstellar Medium" *Astrophys. J.* 555, L61 (2001).

- 87. O. Biham, I., Furman, V. Pirronello, and G. Vidali: "Master Equation for Hydrogen Recombination on Grain Surfaces", *Astrophys. J.* **553**, 595 (2001).

- 86. G. Manico', G. Raguni', V. Pirronello, J.E. Roser, and G. Vidali: "Laboratory Measurements of Molecular Hydrogen Formation on Amorphous Water", *Astrophys. J* **548**, L253 (2001).

- 85. V.Pirronello, O.Biham, G.Manico', J.Roser, and G.Vidali: "Laboratory Studies of Molecular Hydrogen Formation on Surfaces of Astrophysical Interest", invited review in *Proceeding of the Workshop "Molecular Hydrogen in Space"*, Ed. by F.Combe and G. Pineau de Forets (Cambridge University Press, New York) (2000) p.71.

- 84. N.Katz, I.Furman, O.Biham, V.Pirronello, and G.Vidali : "Molecular Hydrogen Formation on Astrophysically Relevant Surfaces", *Astrophys. J.*, **522**, 305 (1999).

- 83. V.Pirronello, O.Biham and G.Vidali: "Molecular Hydrogen Formation in Dust at Early Epochs: Laboratory Simulations", in *Proceedings of The Universe at Early Epoch*, *Mem.S.A.It.* **19**, 353 (1999).

- 82. V.Pirronello, O.Biham, C.Liu, L.Shen, and G.Vidali: "Formation of Molecular Hydrogen: The Mother of All Molecules", in: *Exobiology: Matter, Energy, and Information in the Origin and Evolution of Life in the Universe"*, Ed. by J.C.Flores and F.Raulin, p.287 (1999).

- 81. V.Pirronello, C.Liu, J.Roser and G.Vidali: "Measurements of Molecular Hydrogen Formation on Carbonaceous Grains", *Astron.&Astrophys.* **344**, 681 (1999)

- 80. G.Vidali: "Experiments and Computer Simulations of Thin Film Growth", invited review article for a special issue of the Bulgarian Chemical Communication Journal in honor of Ivan Stranski 100th birthday (1999).

- 79. S.E.Finberg, J.V. Lakin, G. Vidali, and R.D.Diehl "Characterization of sodium and potassium adsorption on a faceted Al(111) surface using He-atom scattering" *Journal of Physics: Condensed Matter* **11**, 5735 (1999).

- 78. O.Biham, I.Furman, K.Karimi, G.Vidali, R.Kennett, and H.Zeng: "Models for Diffusion and Island Growth in Metal Monolayers" *Surf.Sci.* **400**, 29 (1998).

- 77. O.Biham, I.Furman, N.Katz, V.Pirronello, and G.Vidali: "H2 Formation on Interstellar Grains in Different Physical Regimes" *Mon.Not.R.Astron.Soc.* **296**, 869 (1998).

- 76. G.Vidali, V.Pirronello, C.Liu, and L.Shen: "Experimental Synthesis of Molecular Hydrogen on Surfaces of Astrophysical Interest", invited review, Astrophysical Letters and Communications **35**, 423, (1998).

- 75. G.Vidali: "Island Multilayer Growth of Metals on Metals: Experiments and Computer Simulations", presented at the *Workshop on Surface Science: Outlook and Future Directions*, Hong Kong, June 1996, Surf.Lett.&Reviews **4**, 709 (1997).

- 74. G.Vidali, C.Liu and L.Shen: "Investigations of Desorption of Hydrogen from Low Temperature Surfaces of Silicates", Ed. by M.Scheffler and M.Tringides, invited contribution to the NATO Workshop "Surface Diffusion: Atomistic and Collective Processes" (Rhodos, Greece, 1996) (Pergamon Press) (1997).

- 73. V.Pirronello, O.Biham, C.Liu, L.Shen, and G.Vidali: "Efficiency of Molecular Hydrogen Formation on Silicates", *Astrophys. J.* **483**, L131 (1997).

- 72. V.Pirronello, C.Liu, L.Shen, and G.Vidali: "Laboratory Synthesis of Molecular Hydrogen on Surfaces of Astrophysical Interest", *Astrophys. J.* **475**, L69 (1997).

- 71. S.Catterall, M.Goldberg, E.Lipson, A.Middleton, G.Vidali: "Implementation of Information Technologies in the Teaching of Science for the 21st Century"", Int.J.Modern Physics C 8, 49 (1997). Invited paper for a special issue devoted to information technologies in the service of education.

- 70. G.S.Leatherman, R.D. Diehl, M.Karimi, and G.Vidali "Epitaxial rotation of two-dimensional rare-gas lattices on Ag(111)" *Physical Review* **B 56**, 6970 (1997)

- 69. Jingsu Lin and G.Vidali: "Laboratory Investigation of Hydrogen Recombination Reactions on Interstellar Dust Grain Analogues", Proceedings of the 1994 Erice Summer School: "The Cosmic Dust Connection", Ed. M.Greenberg (Kluwer Academic Press) p.323 (1996)

- 68. G.Vidali: "Epitaxial Growth of Nanoparticles: Mechanistic Comparisons of Physical and Chemical Processes", invited paper at the NATO Workshop on "Nanoparticles in Solids and Solutions" Szeged Hungary, 1996), Ed. by J.Fendler and I.Dekany (Kluwer Press) p.17.

- 67. G.Vidali and Hong Zeng: "Recent Advances in Island and Multilayer Growth of Metals on Metals far from Equilibrium", invited paper part of the Proceedings of the 7th International Conference on Solid Films and Surfaces, *Appl.Surf.Sci.* **92**, 11 (1996).

- 66. M.F.M. DeKieviet, D.Bahatt, G.Scoles, G.Vidali, M.Karimi: "An Atomic Beam Diffraction Study of a Rare Gas Monolayer of Square Symmetry: Kr on (100)NaCl", *Surf.Sci.* **365**, 889 (1996).

- 65. Hong Zeng, G.Vidali: "Measurement of Growth Kinetics in a Heteroepitaxial System: Pb on Cu(001)", *Phys.Rev.Lett.* **74**, 582 (1995)

- 64. Hong Zeng, G.Vidali:"The Influence of a Heteroepitaxial Interface with Large Lattice Mismatch on the Low Temperature Growth of a Film", *J.Vacuum Sci.Technol.* **A13**, 282 (1995).

- 63. M.Karimi, T.Tomkowsky, G.Vidali, and O.Biham: "Diffusion of Cu on Cu surfaces", *Phys.Rev.* **B52**, 5364 (1995).

- 62. G.Vidali and M.W.Cole: "Helium Adsorption on Hydrogen-Plated Graphite" Journal of Low Temp. Physics 501, 101 (1995) (Special issue on Symposium on Quantum Fluids and Solids, Cornell University, June 1995).

- 61. J.Zhang, D.N. McIlroy, P.A.Dowben, H.Zeng, G.Vidali, D.Heskett, and M.Onellion: "Electronic Structure of Molecular Icosahedra Films", *J.Phys.: Cond.Matter* **7**, 7185 (1995).

- 60. D.Byun, S-D Hwang, J.Zhang, H.Seng, F.K.Perkins, G.Vidali, and P.A.Dowben: "Synchrotron Radiation Induced Decomposition of Closo-1,2-dicabadodecaborane", *Jpn.J.Appl.Phys.* **34**, L941 (1995).

- 59. Hong Zeng, G.Vidali, and Ofer Biham: "Transition from Stranski-Krastanov Growth to Quasi Layer-by-Layer Growth in Pb deposition on Cu(001)", *J.Vacuum Sci.Technol.* **A12**, 2058 (1994).

- 58. G.Vidali, O.Biham, H.Zeng, J.-S. Lin, and Wei Li: "Scaling in the Growth of Pb Islands on Cu(001)", in: "The Structure of Surfaces IV", Ed. S.Y.Tong and X.Xide, World Scientific.

- 57. G.Barkema, O.Biham, M.Breeman, D.O.Boerma, and G.Vidali: "Characterization of Island Growth of Cu on Cu(001)", *Surf.Sci.* **306**, L569-L574 (1994).
- 56. G.Vidali: "Superconductivity: The Next Revolution?" Cambridge University Press (1993).
- 55. Wei Li and G.Vidali: "Metal Adatom Induced Corrugation of Cu(001)", *Surf.Sci.* **287/8**, 336 (1993).
- 54. Ofer Biham, Lee-Wen Chen, and G.Vidali: "Models of Monolayers Adsorbed on a Square Substrate", *Surf.Sci.* **287/8**, 815 (1993)
- 53. Wei Li, G.Vidali, and O.Biham: "Scaling of Island Growth in Pb Overlayers on Cu(001)", *Phys.Rev.* **B48**, 8336 (1993).
- 52. Wei Li and G.Vidali: "Growth of Metastable High-Order Commensurate overlayers of Pb on Cu(001)", *Surf.Sci.* **287/8**, 955 (1993).
- 51. M.Karimi, G.Vidali, and I.Dalins: "Energetics of Formation and Migration of Defects in Pb(110)", *Phys.Rev.* **B.48**, 8986 (1993).
- 50. Donqi Li, Jingsu Lin, Wei Li, Sunwoo Lee, G.Vidali, and P.A.Dowben: "Strong Chemisorption of Mercury at the Hg-Si(111) Interface", *Surf.Sci.* **280**, 71 (1993).
- 49. A.D.Migone, M.T.Alkhafaji, G.Vidali, and M.Karimi:"Thermodynamic Study of Argon Films Adsorbed on Boron Nitride", *Phys.Rev.* **B47**, 6685 (1993).
- 48. Wei Li and G.Vidali: "Corrugation Enhancement of Cu(001) Induced by Low Coverage Pb and Bi Adsorption", *Phys.Rev.* **B46**, 4356 (1992) (Rapid Communication).
- 47. C.Moses, H.Zeng, J.-S. Lin, W.Li, M.Karimi, and G.Vidali: "Dispersionless Vibrational Modes of a Chemisorbed Adsorbate Observed with Inelastic Helium Beam Scattering: Hg on Cu(001)", *J.VacuumSci.Technol.* **A10**, 2377 (1992).
- 46. Wei Li, Jing-Su Lin, M.Karimi, P.A.Dowben, and G.Vidali: "Three-dimensional Structure of the Ordered Phases of Hg on Cu(001)", *Phys.Rev.* **B45**, 3798 (1992).
- 45. W.Li, J.-S.Lin, M.Karimi, C.Moses, and G.Vidali: "Growth and Structural Characterization of a Lead Overlayer on Cu(001)", *J.Vacuum Sci.Technol.* **A9**, 1707 (1991).
- 44. G.Vidali, G.Ihm, Y-J.Kim, and M.W.Cole: "Potentials of Physical Adsorption", review article in: *Surf.Sci.Rep.* **12**, 133 (1991).
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Max Planck Institute for Plant Breeding Research. This position will remain open until filled. Postdoctoral Position - Solar Plasma Physics. GÃ¶ttingen, Germany. Max Planck Institute for Solar System Research. Variable. The measurement of greenhouse gases in the atmosphere. Jena, Germany.Â  Max Planck Institute for Biogeochemistry, Max Planck Institute for Biogeochemistry, Jena. Variable. Post-doc Position in Infection Biology. Paris, France. Cochin Institute. Open. post-doctoral position in HIV-1 infectivity. Paris, France. Cochin Institute. The position I am considering is assistant professor / lecturer. I imagine some choices to be: The interview presentation for JACK JAY.Â  You don't need to include any of the proposed titles in your presentation. They all come across as stilted and affected, and are entirely unnecessary. Instead, if this is a public presentation, treat it as you would any other such presentation: indicate the title of your talk as you normally would have it, and so on. If this is the "private" presentation to the faculty, then you should give it a title representing your current and future research interests. You don't need to say "what" the presentation is forâ€”again, the location of the talk should be sufficient. s