

Publications: Dr. James Owen

Here is a list of my peer-reviewed journal publications, conference proceedings papers and presentations in chronological order, most-recent first. I have 52 peer-reviewed papers published, including conference papers; 23 first author. Currently I have 3 papers in preparation or submitted. Average citations/ paper for the journal articles is 21.1, with an *h*-index of 18. I have given many presentations at international conferences, both talks and posters. An up-to-date publications list is also available on my website, with links to the journal websites.

(i): Currently in preparation or submitted

1. *Bi nanoline nucleation by Bond Rotation mechanism* J. H. G. Owen and D. R. Bowler, In Preparation (2008)
2. *Inter-row correlated adsorption for NH₃ on Si(001)* J. H. G. Owen and D. R. Bowler, *Phys. Rev. B* Submitted (October 2008)

(ii): Refereed papers

1. *Identification of the Si(001) missing dimer defect structure using low bias voltage STM and LDA modelling*
J. H. G. Owen, D. R. Bowler, C. M. Goringe, K. Miki and G. A. D. Briggs, *Surf. Sci. Lett.* **341** L1042 (1995) 36 Citations
2. *Hydrogen diffusion on Si(001)*
J. H. G. Owen, D. R. Bowler, C. M. Goringe, K. Miki and G. A. D. Briggs, *Phys. Rev. B* **54** 14153 (1996) 59 Citations
3. *A proposed structure for the nucleus for GSMBE of Group IV semiconductors.*
J. H. G. Owen, K. Miki, D. R. Bowler, C. M. Goringe and G. A. D. Briggs, *Surf. Sci. Lett.* **382** L678-85 (1997) 13 Citations
4. *Gas-source Growth of Si(001) 1:Nucleation Mechanisms*
J. H. G. Owen, K. Miki, D. R. Bowler, C. M. Goringe, I. Goldfarb and G. A. D. Briggs, *Surf. Sci.* **394** 79-90 (1997) 20 Citations
5. *Gas-source Growth of Si(001) 2:Effect of hydrogen*
J. H. G. Owen, K. Miki, D. R. Bowler, C. M. Goringe, I. Goldfarb and G. A. D. Briggs, *Surf. Sci.* **394** 91-104 (1997) 21 Citations
6. *Gas-source Growth of Si(001) 3:Nucleation and growth of Ge/Si(001)*
I. Goldfarb, J. H. G. Owen, K. Miki, D. R. Bowler, C. M. Goringe and G. A. D. Briggs, *Surf. Sci.* **394** 105-118 (1997) 34 Citations
7. *Nucleation of "Hut" Pits and Clusters during GSMBE of Ge/Si(001) in in-situ STM*
I. Goldfarb, P. T. Hayden, J. H. G. Owen and G. A. D. Briggs, *Phys. Rev. Lett.* **78** 3959-62 (1997) 92 Citations
8. *Competing growth mechanisms of Ge/Si(001) coherent clusters.*
I. Goldfarb, P. T. Hayden, J. H. G. Owen and G. A. D. Briggs, *Phys. Rev. B* **56** 10459-68 (1997) 59 Citations
9. *Scanning tunneling microscopy study of benzene adsorption on Si(100)-(2x1).*
K. W. Self, R. I. Pelzel, J. H. G. Owen, C. Yan and W. H. Weinberg, *J. Vac. Sci. Technol. A* **16** 1031-6 (1998) 36 Citations

10. *In situ observation of gas-source molecular beam epitaxy of silicon and germanium on Si(001).*
I. Goldfarb, J. H. G. Owen, D. R. Bowler, C. M. Goringe, P. T. Hayden, K. Miki, D. G. Pettifor and G. A. D. Briggs, *J. Vac. Sci. Technol. A* **16** 1938-43 (1998) 13 Citations
11. *Chemistry of [(t-butyl)GaS]₄ on Si(100)-(2x1).*
R. I. Pelzel, A. B. Hopcus, J. H. G. Owen, B. Z. Nosho and W. H. Weinberg, *J. Vac. Sci. Technol. B* **16** 2399-2403 (1998) 2 Citations
12. *Diffusion of paired hydrogen on Si(001).*
D. R. Bowler, J. H. G. Owen, K. Miki and G. A. D. Briggs, *Phys. Rev. B* **57** 8790 (1998) 26 Citations
13. *Bi-induced structures on Si(001).*
K. Miki, D. R. Bowler, J. H. G. Owen, G. A. D. Briggs and K. Sakamoto, *Surf. Sci.* **421** 397-418 (1999) 67 Citations
14. *Atomically perfect bismuth lines on Si(001).*
K. Miki, D. R. Bowler, J. H. G. Owen, G. A. D. Briggs and K. Sakamoto, *Phys. Rev. B* **59** 14868-14871 (1999) 69 Citations
15. *Growth Oscillation Decay Rates for Control of III-V Molecular Beam Epitaxy near Stoichiometry*
J. H. G. Owen, W. Barvosa-Carter and J. J. Zinck, *Appl. Phys. Lett.* **76** 3070-2 (2000) 12 Citations
16. *An experimental-theoretical study of the behaviour of hydrogen on the Si(001) surface.*
D. R. Bowler, J. H. G. Owen, C. M. Goringe, K. Miki and G. A. D. Briggs, *J.Phys.:Condens. Matter* **12** 7655 (2000) 14 Citations
17. *Surface reconstructions for InAs(001) studied by Density Functional Theory and STM.*
C. Ratsch, W. Barvosa-Carter, F. Grosse, J. H. G. Owen and J. J. Zinck, *Phys. Rev. B* **62** R7719 (2000) 18 Citations
18. *In situ Threshold Photoemission Yields Correlated to Surface Reconstructions of InAs (001).*
J. J. Zinck, R. S. Ross, J. H. G. Owen, W. Barvosa-Carter, F. Grosse and C. Ratsch, *Appl. Phys. Lett.* **79** 2354-6 (2001) 3 Citations
19. *Structure of Bi nanolines: using tight-binding to explore parameter space.*
D. R. Bowler and J. H. G. Owen, *J. Phys. Cond. Matt.* **14** 6761 (2002) 20 Citations
20. *Stress Relief as the Driving Force for Self-Assembled Bi Nanolines.*
J. H. G. Owen, K. Miki, H. Koh, H. W. Yeom and D. R. Bowler, *Phys. Rev. Lett.* **88** 226104 (2002) 55 Citations
21. *Bi nanoline passivity to attack by radical hydrogen or oxygen*
J. H. G. Owen, D. R. Bowler, S. Kusano and K. Miki, *Surf. Sci. Lett.* **499** L124-L128 (2002) 27 Citations
22. *Atomic scale structure of InAs(001)-(2x4) steady-state surfaces determined by scanning tunneling microscopy and density functional theory*
W. Barvosa-Carter, R. S. Ross, C. Ratsch, F. Grosse, J. H. G. Owen and J. J. Zinck, *Surf. Sci. Lett.* **499** L129-134 (2002) 15 Citations
23. *Measurement of V/III ratio using threshold photoemission*
J. J. Zinck, J. H. G. Owen and W. Barvosa-Carter, *J. Vac. Sci. Technol. B* **21** 1126 (2003) 1 Citation
24. *Interaction between strain and electronic structure in the Bi nanoline*
J. H. G. Owen, D. R. Bowler and K. Miki, *Surf. Sci. Lett.* **527** L177 (2003) 20 Citations

25. *Short-range and long-range strain fields of Bi atomic lines*
J. H. G. Owen, D. R. Bowler and K. Miki, *Mat. Sci. Technol.* **20** 955 (2004) 3 Citations
26. *NH₃ on Si(001): Self-organized patterns of adsorbates investigated by a combination of STM experiments and DFT calculations* J. H. G. Owen, D. R. Bowler, S. Kusano and K. Miki, *Phys. Rev. B* **72** 113304 (2005) 16 Citations
27. *Distinguishing two isomers of Nd@C₈₂ by STM and DFT*
D. F. Leigh, J. H. G. Owen, S. M. Lee, K. Porfyraakis, A. Ardavan and G. A. D. Briggs, *Chem. Phys. Lett.* **414** 307-310 (2005) 2 Citations
28. *Identification of intermediate linear structure formed during Bi/Si(001) surface anneal*
J. H. G. Owen, D. R. Bowler, S. Kusano and K. Miki, *Surf. Sci.* **596** 163 (2005) 10 Citations
29. *1-D Epitaxial Growth of Indium on a Self-Assembled atomic-scale Bismuth template*
J. H. G. Owen and K. Miki, *Nanotechnology* **17** 430-433 (2006) 16 Citations
30. *Bi nanolines on Si(001): registry with substrate*
D. R. Bowler, J. H. G. Owen and K. Miki, *Nanotechnology* **17** 1801-1802 (2006) 3 Citations
31. *Thermal stability of Al nanocluster arrays on Si(111)-7x7 surfaces*
R-W. Li, S. Kusano, J. H. G. Owen and K. Miki *Nanotechnology* **17** 2018-2022 (2006) 4 Citations
32. *1-D semiconducting atomic chain of In and Bi on Si(001)* D. R. Bowler, C.F. Bird and J. H. G. Owen, *J. Phys. Cond. Mat.* **18** L241-9 (2006) 6 Citations
33. *Growth of Ag nanoclusters on a 1-nm template*
J. H. G. Owen and K. Miki *Surf. Sci.* **600** 2943-2953 (2006) 14 Citations
34. *Self-assembled nanowires on semiconductor surfaces* J. H. G. Owen, K. Miki, and D. R. Bowler *J. Mat. Sci.* **41** (14) 4568-4603 (2006) 26 Citations
35. *Dynamic behavior and phase transition of magic Al clusters on Si(111)-7x7 surfaces* R-W. Li, J. H. G. Owen, S. Kusano, and K. Miki. *Appl. Phys. Lett.*, **89** 073116 (2006) 3 Citations
36. *Molecular interactions and decomposition pathways of NH₃ on Si(001)* D. R. Bowler and J. H. G. Owen *Phys. Rev. B* **75** 155310 (2007) 5 Citations
37. *Self-assembly of trimetallic nitride template fullerenes on surfaces studied by STM*
D. F. Leigh, C. Norenberg, D. Cattaneo, J. H. G. Owen, K. Porfyraakis, A. L. Bassi, A. Ardavan, and G. A. D. Briggs *Surf. Sci.* **601** 2750--2755 (2007) 1 Citation
38. *Al nanocluster arrays on Si(111)-7x7 surfaces: Formation process and interactions among clusters* R. Li, H. Liu, J. H. G. Owen, Y. Wakayama, K. Miki, and H. W. Yeom
Phys. Rev. B **76** 075418 (2007) 2 Citations
39. *Sub-monolayer growth of Copper Phthalocyanine on passivated Si(001) surfaces*
J. Gardener, J.H.G.Owen, K. Miki, and S. Heutz *Surf. Sci.* **602** 843-851 (2008) 1 Citation
40. *Co-adsorption patterns of NH₃ on Si(001) : Comment on "The ordering of the adsorbed NH₃ molecules across the Si dimer rows on the Si(001) surface"* J. H. G. Owen and D. R. Bowler *Surf. Sci.* **602** 3760-3762 (2008)

(iii): Conference Papers

1. *Self-assembly and electronic effects of Er₃N@C₈₀ and Sc₃N@C₈₀ on Au(111) and Ag/Si(111) surfaces* C. Norenberg, D. F. Leigh, D. Cattaneo, K. Porfyrakis, A. L. Bassi, C. S. Casari, M. Passoni, J. H. G. Owen, and G. A. D. Briggs *Journal of Physics: Conference Series* **100** 052080 (2008)
2. *Structure and Electronic Properties of Atomic-Scale In-Bi Nanowire Arrays* J. H. G. Owen, O. Kubo and D. R. Bowler, *Mat. Res. Soc. Symp. Proc.* #1080-O03-06 (2008)
3. *Nanoline Templating of metals and the underlying surface processes.* J. H. G. Owen and K. Miki, *Mat. Res. Soc. Symp. Proc.* #0961-O15-07 (2007)
4. *Isolation, Spectroscopic Characterization, and Study of Island Formation of Two Isomers of the Metallofullerene Nd@C₈₂*
K. Porfyrakis, D. F. Leigh, J. H. G. Owen, S. M. Lee, M. Kanai, G. Morley, A. Ardavan, T. F. J. Dennis, D. G. Pettifor, and G. A. D. Briggs *ECS Transactions* **1** 43-49 (2006)
5. *Self-assembled Nanoline Template for Growth of Nanoparticles and Nanowires on Si(001).*
J. H. G. Owen and K. Miki, *Mat. Res. Soc. Symp. Proc.* #0901-Ra13-02 (2006)
6. *Isolation, Spectroscopic Characterization, and Study of Island Formation of Two Isomers of the Metallofullerene Nd@C₈₂*
K. Porfyrakis, D. F. Leigh, J. H. G. Owen, S. M. Lee, M. Kanai, G. Morley, A. Ardavan, T. J. F. Dennis, D. G. Pettifor, and G. A. D. Briggs *Meeting Abstracts* **2** 1663 (2005)
7. *The structure of self-assembled Bi nanolines on Si(001)*
J. H. G. Owen and K. Miki *Proceedings of 7th International Conference on Nanometer-Scale Science and Technology and 21st European Conference on Surface Science (NANO-7/ECOSS-21)*, Malmo, Sweden (2002).
8. *Sb-terminated InAs(001)-(2x4) and (2x8) studied using scanning tunneling microscopy and ab initio density functional theory* W. Barvosa-Carter, F. Grosse, J. H. G. Owen and J. J. Zinck *Mat.Res.Soc.Symp.Proc.* **692** H841 (2002)
9. *Bismuth and Antimony nanolines in a Si epitaxial layer* K. Miki, H. Matsuhata, K. Sakamoto, G. A. D. Briggs, J. H. G. Owen and D. R. Bowler. *Microscopy of Semiconducting Materials XI. Inst. Phys. Conf. Ser.* **164** 167 (1999)
10. *Nucleation, growth and size distributions of Ge islands on Si(001): in-situ STM studies.*
I. Goldfarb and J. H. G. Owen and P. T. Hayden and K. Miki and G. A. D. Briggs *Microscopy of Semiconducting Materials X, Inst. Phys. Conf. Ser.* **157** 597-600 (1997)
11. *Elevated-Temperature STM study of Ge and Si growth on Si(001) from GeH₄ and Si₂H₆* J. H. G. Owen, K. Miki, D. R. Bowler, G. A. D. Briggs and I. Goldfarb. *NATO ASI* (1996)
12. *STM imaging of adsorbed trimethylgallium on gallium arsenide(001)-(2x4)*
A. R. Avery, A. J. Mayne, C. M. Goringe, J. H. G. Owen, C. W. Smith, M. O. Schweitzer, T. S. Jones, G. A. D. Briggs, W. H. Weinberg *Mat. Res. Soc. Symp. Proc.* **312** 219 (1993)

(iv): Patents

1. *Atomic-scale metal wires or nanoclusters and its fabrication method* J.H.G.Owen, K.Miki (NIMS NO.:05-MS-66, Application.No.:2005-298225 filed on 2005.10.12.