Publications – Prof M.Y. Simmons

Books

[1] **M.Y. Simmons**, "Nanotechnology, Small things, Big Science", Chapman and Hall, May 2002 (co-authored with Wilson, Raguese, Kannangara, Smith); ISBN 1-58488-339-1.

Book Chapters

[2] **M.Y. Simmons** and T.W. Barlow, "Nanotechnology in Australia" in "Nanotechnology R & D and Business Trends in the Asia Pacific Rim", World Scientific, 2008.

[3] M.J. Butcher and **M.Y. Simmons**, "Basic Properties of Semiconductor Surfaces" in "Properties of single organic molecules on solid surfaces", Imperial College Press, UK, 2006; ISBN 1-86094-628-3.

[4] **M.Y. Simmons**, "Nanotechnology: Physics, Chemistry and Biology unite at the ultra-small scale" in "Impact Science", The Science Foundation for Physics, Published by the Tandem Group, July 2001, ISBN 1-86487-379-5.

[5] **M.Y. Simmons**, "Quantum Computing" in "Impact Science", The Science Foundation for Physics, Published by the Tandem Group, July 2001, ISBN 1-86487-379-5.

Papers in Refereed Journals

2008

[6] **M.Y. Simmons**, "Probing dopants at the atomic level", Nature Physics 4, 165 (2008).

[7] W.R. Clarke, C.E. Yasin, A.R. Hamilton, A.P. Micolich, M.Y. Simmons, K. Muraki, Y. Hirayama, M. Pepper and D.A. Ritchie "Impact of long- and short-range disorder on the metallic behavior of two-dimensional systems, Nature Physics 4, 55 (2008).

[8] R. Danneau, O. Klochan, W.R. Clarke, **M.Y. Simmons** et al., "Enhancement of the 1D g-factor due to valence band mixing in p-type quantum wires", Physical Review Letters 100, 016403 (2008).

[9] F. Sfigakis C.J.B. Ford, M. Pepper, M. Kataoka, D.A. Ritchie and **M.Y. Simmons**, "Kondo effect from a tunable bound state within a quantum wire", Physical Review Letters 100, 026807 (2008).

[10] F. J. Rueß, A. P. Micolich, W. Pok, K. E. J. Goh, A. R. Hamilton, **M.Y. Simmons**, "Ohmic conduction of sub-10nm P-doped silicon nanowires at cryogenic temperatures", Applied Physics Letters 92, 0521011 (2008).

[11] C.C. Wang, C.-T. Liang, Yu-Ting Jiang, Y.F. Chen, N. Cooper, D.A. Ritchie and **M.Y. Simmons**, "Electron heating and huge positive magnetoresistance of GaAs/AlGaAs high electron mobility transistor structures", Applied Physics Letters 92, 152117 (2008).

[12] **M.Y. Simmons**, F.J. Ruess, K.E.J. Goh, W. Pok, T. Hallam, M. J. Butcher, T.C.G. Reusch, G. Scappucci, A.R. Hamilton and L. Oberbeck, "Atomic Scale Device Fabrication" International Journal of Nanotechnology 5, 352 (2008).

[13] A.R. Hamilton, O. Klochan, R. Danneau, W.R. Clarke, L.H. Ho, A.P. Micolich, **M.Y. Simmons**, M. Pepper, D.A. Ritchie, K. Muraki and Y. Hirayama, "Quantum transport in a one dimensional hole gas system", Int. J. Nanotechnology 5, 318 (2008).

[14] A.R. Hamilton, R. Danneau, O. Klochan, W.R. Clarke, A.P. Micolich L.H. Ho, , **M.Y. Simmons**, D.A. Ritchie, M. Pepper, K. Muraki and Y. Hirayama, "The 0.7 anomaly in one dimensional hole quantum wires", Journal of Physics C 20, 164205 (2008).

[15] **M.Y. Simmons**, F. J. Rueß, W. Pok, D. L. Thompson, M. Füchsle, G. Scappucci, T. C.G. Reusch, K.E.J. Goh, S. R. Schofield, B. Weber, L. Oberbeck, A. R. Hamilton and F. Ratto, "Atomically Precise Silicon Device Fabrication", accepted for the IEEE Transactions on Nanotechnology (2008).

[16] K.E.J. Goh, **M.Y. Simmons** and A. R. Hamilton, "Electron-electron interactions in highly disordered two dimensional systems", accepted for Physical Review B May 2008.

[17] K.E.J. Goh, **M.Y. Simmons** and A. R. Hamilton, "Use of low-temperature Hall effect to measure dopant activation: Role of electron-electron interactions", Physical Review B 76, 193305 (2008).

[18] F. J. Rueß, G. Scappucci, M. Füchsle, W. Pok, A. Fuhrer, D. L. Thompson, T. C.G. Reusch and **M.Y. Simmons**, "Demonstration of gating action in atomically controlled Si:P nanodots defined by scanning probe microscopy", Physica E 40, 1006 (2008).

[19] W. Clarke, X.Y. Zhou, A. Fuhrer, TC.G. Reusch and **M.Y. Simmons**, "The effect of surface proximity on electron transport through ultra-shallow δ-doped layers in silicon", Physica E 40, 1566 (2008).

[20] R. Danneau, O. Klochan, W.R. Clarke, L. Ho, A.P. Micolich, **M.Y. Simmons** et al., "0.7 structure and the zero bias anomaly in one dimensional hole systems", Physica E 40, 1501 (2008).

[21] L.H. Ho, W.R. Clarke, R. Danneau, O. Klochan, A.P. Micolich, **M.Y. Simmons**, A.R. Hamilton, M. Pepper and D.A. Ritchie, "Screening long range Coulomb interactions in two dimensional hole systems using a bilayer heterostructure", Physica E 40, 1700 (2008).

[22] W.R. Clarke, C.E. Yasin, A.R. Hamilton, A.P. Micolich, **M.Y. Simmons**, K. Muraki, Y. Hirayama, M. Pepper and D.A. Ritchie, "Metallic behavior in low-disorder two-dimensional hole systems in the presence of long- and short-range disorder", Physica E 40, 1599 (2008).

[23] L.C. Bassett, C.P. Michael, C.J.B. Ford, M. Kataoka, C.H.W. Barnes, **M.Y. Simmons** and D.A. Ritchie, "Geometric suppression of single-particle energy spacings in quantum antidots", Physica E 40, 1633 (2008).

[24] T.C.G. Reusch, K.E.J. Goh, W. Pok, N.Lo, S. McKibbin and **M.Y. Simmons**, "Morphology and electrical conduction of Si:P delta-doped layers on vicinal Si(001)" submitted to Applied Physics Letters (2008).

2007

[25] F.J. Ruess, W. Pok, T. C. G. Reusch, M.J. Butcher, K.E. J. Goh, G. Scappucci, A.R. Hamilton and **M.Y. Simmons**, "Realization of Atomically Controlled Dopant Devices in Silicon", Small, 3, No. 4, 563-567 (2007).

[26] G. Scappucci, F. Ratto, D.L. Thompson, T.C.G. Reusch, W. Pok, and **M.Y. Simmons**, "Structural and electrical characterization of room temperature UHV-compatible SiO2", Applied Physics Letters 91, 222109 (2007).

[27] C.C. Wang, C.-T. Liang, Yu-Ting Jiang, Y.F. Chen, N. Cooper, D.A. Ritchie and **M.Y. Simmons**, "Huge positive magnetoresistance of GaAs/AlGaAs high electron mobility transistor structures at high temperatures", Applied Physics Letters 90, 252106 (2007).

[28] M.W. Radny, P.V. Smith, T.C.G. Reusch, O. Warschkow, N.A. Marks, H. F. Wilson, S.R. Schofield, N.J. Curson, D.R. McKenzie and **M.Y. Simmons** "Single hydrogen atoms on the Si(001) surface", Physical Review B 76, 155302 (2007).

[29] K.E.J. Goh, **M.Y. Simmons** and A. R. Hamilton, "Use of low temperature Hall effect to measure dopant activation: the role of electron-electron interactions", Physical Review B 76, 193305 (2007).

[30] F.J. Rueß, B. Weber, O. Kocklan, A.R. Hamilton and **M.Y. Simmons**, "1D conduction properties of highly phosphorus doped planar nanowires patterned by scanning probe microscopy, Physical Review B 76, 085403 (2007).

[31] F.J. Rueß, W. Pok, K.E. J. Goh, A.R. Hamilton and **M.Y. Simmons**, "Electronic properties of atomically abrupt tunnel junctions in silicon", Physical Review B 75, 121303(R) (2007).

[32] A.C. Graham, D.L. Sawkey, M. Pepper, **M.Y. Simmons** and D.A. Ritchie "Energy-level pinning and the 0.7 spin state in one dimension: GaAs quantum wires studied using finite-bias spectroscopy", Physical Review B, 75 (3), 035331 (2007).

[33] F.J. Ruess, K.E.J. Goh, M.J. Butcher, T.C.G. Reusch, L. Oberbeck, B. Weber, A.R. Hamilton and **M.Y. Simmons**, "Narrow, highly P-doped, planar wires in silicon created by scanning probe microscopy", Nanotechnology 18, 044023 (2007).

[34] K.E.J. Goh, L. Oberbeck, M.J. Butcher, N.J. Curson, F.J. Ruess and **M.Y. Simmons**, "Comparison of GaP and PH3 as dopant sources for STM-based device fabrication", Nanotechnology 18, 065301 (2007).

[35] F.J. Rueß, W. Pok, T.C.G. Reusch, G. Scappucci, M. Füchsle, D. L. Thompson, M. Mitic, and **M.Y. Simmons**, "Formation and transport characteristics of STM-defined, highly-doped Si:P nanodots", J. Scanning Probe Microscopy 2, 10 (2007).

[36] W. Pok, T.C.G. Reusch, G. Scappucci, F.J. Ruess, A.R. Hamilton and **M.Y. Simmons**, "Electrical Characterization of Ordered Si:P Dopant Arrays", Nanotechnology, IEEE Transactions on, 6 (2), 213-217 (2007).

[37] M. Fuechsle, F. J. Rueß, T. C.G. Reusch, M. Mitic, and **M.Y. Simmons**, "Surface gate and contact alignment for buried, atomically precise STM-patterned devices", J. Vacuum Science and Technology B 25, 2562 (2007).

[38] M.W. Radny, P.V. Smith, T.C.G. Reusch, O. Warschkow, N.A. Marks, H. Shi, D.R. McKenzie, S.R. Schofield, N.J. Curson and **M.Y. Simmons** "Single P and As dopants in the Si(001) surface, J. Chemical Physics 127, 184706 (2007).

[39] T.C.G. Reusch, N.J. Curson, S.R. Schofield, T. Hallam, and **M.Y. Simmons** "Single phosphorus atoms in Si(100): Doping induced charge transfer into isolated single dangling bonds", J. Phys. Chem 111, 6428 (2007).

[40] T.C.G. Reusch, O. Warshchow, M.W. Radny, P.V. Smith, N.A. Marks, N.J. Curson, D.R McKenzie and **M.Y. Simmons**, "Doping and STM-induced changes to single dangling bonds on Si(100)", Surface Science 601, 4036 (2007).

[41] T. Hallam, T. C. G. Reusch, L. Oberbeck, N.J. Curson and **M.Y. Simmons**, "STM-based fabrication of nano- and atomic-scale dopant devices in silicon: the crucial step of hydrogen removal", Journal of Applied Physics 101, 034305 (2007).

[42] T. Hallam, M.J. Butcher, K.E.J. Goh and **M.Y. Simmons**, "Use of a SEM to pattern large areas of a hydrogen resist for electrical contacts" Journal of Applied Physics 102, 034308 (2007).

[43] T.J. Kershaw, A. Usher, A.S. Sachrajda, J. Gupta, Z.R Wasilewski, M. Elliott, D.A. Ritchie and **M.Y. Simmons**, "Decay of long-lived quantum Hall induced currents in 2D electron systems", New J. Physics 9, 71 (2007).

[44] J.H. Chen, D.R. Hang, C.F. Huang, T.Y. Huang, J.Y. Lin, S.H. Lo, J.C. Hsiao, M.G. Lin, **M.Y. Simmons**, D.A. Ritchie and C.T. Liang "Experimental Studies of Low-field Landau Quantization in Two-dimensional Electron Systems in GaAs/AlGaAs Heterostructures", J. Korean Phys. Soc. 50, 776 (2007).

[45] P.Z. Chen, L.H. Lin, C.T. Liang, J.Y. Lin, J.H. Chen, **M.Y. Simmons** and D.A. Ritchie, "Electron Heating and Current Scaling in a GaAs Two-Dimensional Electron System", J. Korean Phys. Soc. 50, 1662 (2007).

2006

[46] R. Danneau, O. Klochan, W.R. Clarke, L.H. Ho, A.P. Micolich, **M.Y. Simmons**, A.R. Hamilton, M. Pepper, D.A. Ritchie, U. Zulicke, "Zeeman splitting in ballistic hole quantum wires", Physical Review Letters 97 (2), 026403 (2006).

[47] G. Allison, E.A. Galaktionov, A.K. Savchenko, S.S. Safonov, M.M. Fogler, **M.Y. Simmons**, D.A. Ritchie, "Thermodynamic density of states of two-dimensional GaAs systems near the apparent metal-insulator transition", Physical Review Letters 96 (21), 216407 (2006).

[48] S. R. Schofield, N. J. Curson, O. Warschkow, N.A. marks, H.F. Wilson, **M.Y. Simmons**, P.W. Smith. M.R. Radny, D.R. McKenzie and R. G. Clark, "Phosphine dissociation and diffusion on Si(100) : Observation at the Atomic Scale", Journal of Physical Chemistry B 110, 3173-3179 (2006).

[49] R. Danneau, W.R. Clarke, O. Klochan, A.P. Micolich, A.R. Hamilton, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "Conductance quantization and the 0.7x2e2/h conductance anomaly in one-dimensional hole systems", Applied Physics Letters 88 (1), 012107 (2006).

[50] M. W. Radny, P.V. Smith, T. C. G. Reusch, O. Warschkow, N.A. Marks, H.F. Wilson, N.J. Curson, S.R. Schofield, D.R. McKenzie and **M.Y. Simmons**, "Importance of charging in atomic resolution scanning tunneling microscopy: Study of a single phosphorus atom in a Si(001) surface", Physical Review B 74, 113311 (2006).

[51] K. E. J. Goh, L. Oberbeck, **M.Y. Simmons**, A. R. Hamilton and M. J. Butcher, "Influence of doping density on electronic transport in degenerate Si:P δ-doped layers", Physics Review B 73, 035401 (2006).

[52] H.F. Wilson, O. Warschkow, N.A. Marks, N.J. Curson, S.R. Schofield, T. C. G. Reusch, M. W. Radny, P.V. Smith, D.R. McKenzie and **M.Y. Simmons**, "Thermal dissociation and desorption of PH3 on Si(001): A reinterpretation of spectroscopic data" , Physical Review B 74, 195310 (2006).

[53] W.R. Clarke, A.P. Micolich, A.R. Hamilton, **M.Y. Simmons**, K. Muraki and Y. Hirayama, "Fabrication of induced two-dimensional hole systems on (311)A GaAs", Journal of Applied Physics 99 (2), 023707 (2006).

[54] T.C.G. Reusch, N.J. Curson, S.R. Schofield, T. Hallam, and **M.Y. Simmons** "Phosphorus and hydrogen atoms on the (001) surface of silicon: A comparative scanning tunnelling microscopy study of surface species with a single dangling bond", Surface Science 600 318–324 (2006)

[55] C. P. Michael, M. Kataoka, C.J.B. Ford, G. Faini, D. Mailly, **M.Y. Simmons**, D.A. Ritchie, "The excitation spectrum of quantum antidotes", Physica E 34 195 (2006).

[56] E.A. Galaktionov, G. D. Allison, M.M. Fogler, A.K. Savchenko, S.S. Safonov, **M.Y. Simmons** and D.A. Ritchie, "Effects of interactions and disorder on the compressibility of two-dimensional electron and hole systems", Physica E 34 , 240 (2006).

[57] R. Danneau, W.R. Clarke, O. Klochan, L.H. Ho, A.P. Micolich, A.R. Hamilton, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "Ballistic transport in one-dimensional bilayer hole systems", Physica E 34 , 550 (2006).

[58] A.C. Graham, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "New interaction effects in quantum point contacts at high magnetic fields", Physica E 34 , 588 (2006).

2005

[59] **M.Y. Simmons**, F.J. Rueß, K.E.J. Goh, T. Hallam, L. Oberbeck, N.J. Curson, A.R. Hamilton, R.G. Clark and T.C.G. Reusch (invited review), "Scanning probe Microscopy for silicon device fabrication" Molecular Simulation 31, 505 (2005).

[60] F.J. Rueß, L. Oberbeck, K.E.J. Goh, M.J. Butcher, E. Gauja, A.R. Hamilton and **M.Y. Simmons**, "The use of etched registration markers to make four-terminal electrical contacts to STM-patterned nanostructures", Nanotechnology 16 (10), 2446 (2005).

[61] T. Hallam, N.J. Curson, L. Oberbeck, **M.Y. Simmons**, F.J. Rueß and R.G. Clark, "Effective removal of hydrogen resists used to pattern atomic-scale devices in silicon using scanning tunnelling microscopy", Applied Physics Letters 86, 143116 (2005).

[62] G.W. Brown, B.P. Ubernaga, H. Grube, M.E. Hawley, S.R. Schofield, N.J. Curson, **M.Y. Simmons** and R.G. Clark, "Observation of substitutional and interstitial phosphorus on clean Si(100)2x1 with scanning tunnelling microscopy", Physical Review B 72, 195323 (2005).

[63] A.C Graham, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "Anomalous Spin-dependent behaviour of one dimensional subbands" Physical Review B, 193305 (2005).

[64] O. Warschkow, H.F. Wilson, N.A. Marks, S.R. Schofield, N.J. Curson, P.V. Smith, M.W. Radny, D.R. McKenzie, **M.Y. Simmons**, "Phosphine adsorption and dissociation on the Si(001) surface: An ab initio survey of structures", Physical Review B 72, 125328 (2005).

[65] C.E. Yasin, T.L. Sobey, A.P. Micolich, W.R. Clarke, A.R. Hamilton, **M.Y. Simmons**, L.N. Pfeiffer, K.W. West, E.H. Linfield, M. Pepper and D.A. Ritchie, "Interaction correction to the longitudinal conductivity and Hall resistivity in high-quality two-dimensional GaAs electron and hole systems", Physical Review B 72, 241310 (2005).

[66] W.R. Clarke, A.P. Micolich, A.R. Hamilton, **M.Y. Simmons**, C.B. Hanna, J.R. Rodriguez, M. Pepper and D.A. Ritchie, "Evolution of the bilayer υ=1Quantum Hall state under charge imbalance", Physical Review B 71, 081304 (2005).

[67] K.E.J. Goh, L. Oberbeck and **M.Y. Simmons**, "Relevance of phosphorus incorporation and hydrogen removal for Si : P delta-doped layers fabricated using phosphine", Physica Status Solidi A 202, 1002 (2005).

[68] A.C Graham, K.J. Thomas, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "0.7 structure in quantum wires observed at crossings of spin polarised 1D subbands", Physica E 25, 683 (2005).

[69] W.R. Clarke, A.P. Micolich, A.R. Hamilton, **M.Y. Simmons**, K. Muraki and Y. Hirayama, "Fabrication and characterization of a 2D hole system a in novel (311)A GaAs SISFET", Microelectronics Journal 36, 327 (2005).

[70] C.T. Liang, M. Kataoka, G. Faini, D Mailly, **M.Y. Simmons**, A.W. Rushforth, C.G. Smith, D.A. Ritchie and M. Pepper, "Evidence for a finite compressibility of a quasi-one-dimensional ballistic channel", Microelectronics Journal 36, 331 (2005).

[71] T.Y. Huang, C.P. Huang, Y. H. Chui, C.T. Liang, **M.Y. Simmons** and D.A. Ritchie, "Mobility gap of a spin-split GaAs two-dimensional electron gas", Microelectronics Journal 36, 466 (2005).

[72] A.K. Savchenko, E.A. Galaktionov, S.S. Safonov, Y.Y. Proskuyakov, L. Li, M. Pepper, **M.Y. Simmons**, D.A. Ritchie, E.H. Linfield, Z.D. Kvon, " Interaction effects in high mobility 2D electron and hole systems", Physica Status Solidi B 242, 1204 (2005).

[73] K.V. Kavokin, M.E. Portinoi, A.J. Matthews, A. Usher, J.D. Gething, D.A. Ritchie and **M.Y. Simmons**, "Induced currents, frozen charges and the quantum Hall effect breakdown", Solid State Communications 134, 257 (2005).

2004

[74] F.J. Rueß, L. Oberbeck, **M.Y. Simmons**, K.E.J. Goh, A.R. Hamilton, T. Hallam, N.J. Curson and R.G. Clark, "Towards atomic-scale device fabrication in silicon using scanning probe microscopy", Nano Letters 4 (10), 1969 (2004).

[75] H.F. Wilson, O. Warschkow, N.A. Marks, S.R. Schofield, N.J. Curson, P.V. Smith, M.W. Radny, D.R. McKenzie, **M.Y. Simmons**, "Phosphine dissociation on the Si(001) surface", Physical Review Letters 93, 226102 (2004).

[76] P. Roche, J. Segala, D.C. Glatti, J.T. Nicholls, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "Fano factor reduction on the 0.7 conductance structure of a ballistic one-dimensional wire", Physical Review Letters 93, 116602 (2004).

[77] S. McPhail, C.E. Yasin, A.R. Hamilton, **M.Y. Simmons**, E.H. Linfield, M. Pepper and D.A. Ritchie, "Weak localisation in high quality two-dimensional systems", Physical Review B 70, 245311 (2004).

[78] S. R. Schofield, N. J. Curson, J. L. O'Brien, **M.Y. Simmons**, R. G. Clark, N.A. Marks, G.W Brown, and M.E. Hawley, "Split-off dimer defects on the Si(100)2x1 surface", Physical Review B 69, 085312 (2004).

[79] N.J. Curson, S.R. Schofield, L. Oberbeck, **M.Y. Simmons**, R.G. Clark, "STM characterisation of the Si-P heterodimer", Physical Review B 69, 195303 (2004).

[80] C.T. Liang, O.A. Tkachenko, V.A. Tkachenko, D.G. Basheyev, **M.Y. Simmons**, D.A. Ritchie, M. Pepper, "Gradual decrease of the conductance of an adiabatic ballistic constriction below 2e2/h", Physical Review B 70, 195324 (2004).

[81] A.J. Matthews, K.V. Kavokin, A. Usher, M.E. Portinoi, M. Zhu, J.D. Gething, M. Elliott, W.G. Herrenden-Harker, K. Philips, D.A. Ritchie, **M.Y.Simmons**, C.B. Sorenson, O.P Hansen, O.A. Morinov, D.R. Leadley and M. Henini, "Temperature dependent of the breakdown of the quantum Hall effect studied by induced currents", Physical Review B 70, 075317 (2004).

[82] K.E.J. Goh, L. Oberbeck, **M.Y. Simmons** and R.G. Clark, "Effect of encapsulation temperature on Si:P δ-doped layers", Applied Physics Letters 85, 4953-4955 (2004).

[83] L. Oberbeck, N.J. Curson, T. Hallam, **M.Y. Simmons**, R.G. Clark and G. Bilger, "Measurement of phosphorus segregation in silicon at the atomic-scale using STM", Applied Physics Letters 85, 1359 (2004).

[84] L. Oberbeck, N.J. Curson, T. Hallam, **M.Y. Simmons** and R.G. Clark, "STM imaging of buried P atoms in hydrogen terminated Si for the fabrication of a Si:P quantum computer", Thin Solid Films 464, 23-27 (2004).

[85] C.T. Liang, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Measurements of composite fermion conductivity dependence on carrier density", Journal of Physics C 16, 1095 (2004).

[86] A.C. Graham, K.J. Thomas, M. Pepper, **M.Y. Simmons**, D.A. Ritchie, K.F. Berggren, P.Jaksch, A. Debnarova, I.I. Yakimenko, "0.7 analogue structures and exchange interactions in quantum wires", Solid State Comm. 131, 591 (2004).

[87] W.R. Clarke, A.P. Micolich, A.R. Hamilton, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "Stability of the bilayer quantum Hall state under charge imbalance", Physica E 22, 40 (2004).

[88] H.S. Wang, Y,H, Chui, G.H. Kim, C.T. Liang, **M.Y. Simmons** and D.A. Ritchie, "Upshift of the fractional quantum Hall plateau: evidence of repulsive scattering from composite fermions", Physica E 22, 135 (2004).

[89] M. Kataoka, C.J.B. Ford, **M.Y. Simmons** and D.A. Ritchie, "Selective spin resolved edge current injection into a quantum antidot", Physica E 22, 168 (2004).

[90] A.J. Matthews, K.V. Kavokin, A. Usher, M.E. Portinoi, M. Zhu, J.D. Gething, M. Elliott, W.G. Herrenden-Harker, K. Philips, D.A. Ritchie, **M.Y. Simmons**, C.B. Sorenson, O.P Hansen, O.A. Morinov, D.R. Leadley and M. Henini, "Temperature dependent high current breakdown of the quantum Hall effect", Physica E 22, 201 (2004).

[91] K.L. Philips, M. Elliott, Y. Lu, W.G. Herrenden-Harker, A.J. Matthews, J.D. Gething, A. Usher, M. Henini, D.A. Ritchie and **M.Y. Simmons**, "Self-organised criticality in the quantum Hall effect", Physica E 22, 210 (2004).

[92] A.K. Savchenko, Y.Y. Proskuyakov, S.S. Safonov, L. Li, M. Pepper, **M.Y. Simmons**, D.A. Ritchie, E.H. Linfield, Z.D. Kvon, " Interactions in high mobility 2D electron and hole systems", Physica E 22, 218 (2004).

[93] A.C. Graham, K.J. Thomas, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "0.7 structure in quantum wires observed at crossings of spin polarised 1D subbands", Physica E 22, 264 (2004).

[94] C.T. Liang, O.A. Tkachenko, V.A. Tkachencko, T.G. Baksheyev, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Can the conductance step of a single mode ballistic constriction be lower than 2e2/h?", Physica E 22, 268 (2004).

[95] T.M. Chen, C.T. Liang, **M.Y. Simmons**, G.H. Kim and D.A. Ritchie, "Transport and quantum lifetime dependence on electron density in gated GaAs/AlGaAs heterostructures", Physica E 22, 312 (2004).

[96] M.G. Lin, C.P. Huang, C.T. Liang, C.G. Smith, **M.Y. Simmons** and D.A. Ritchie, "Mobility dependence on carrier density of a dilute GaAs electron gas in an in-plane magnetic field", Physica E 22, 324 (2004).

[97] M. Kataoka, C.J.B. Ford, **M.Y. Simmons** and D.A. Ritchie, "Kondo like behaviour as manifestation of many body interactions around a quantum anitodot", Physica E 22, 558 (2004).

[98] C.T. Liang, C.G. Smith, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Experimental evidence for screening effects from surface states in GaAs/AlGaAs based nanostructures", Physica E 22, 570 (2004).

[99] A. Usher, M. Zhu, A. J. Matthews, A. Potts, M. Elliott, W.G. Herrenden-Harker, D.A. Ritchie and **M.Y.Simmons**, "Equilibrium magnetisation measurements of two-dimensional electron systems", Physica E 22, 741 (2004).

2003

[100] S.R. Schofield, N.J. Curson, **M.Y. Simmons,** F.J. Ruess, T. Hallam, L. Oberbeck and R.G. Clark, "Atomically precise placement of single dopants in silicon", Phys. Rev. Lett. 91, 136104 (2003).

[101] **M. Y. Simmons**, S. R. Schofield, J. L. O'Brien, N. J. Curson, L. Oberbeck, T. Hallam and R. G. Clark, "The atomic scale fabrication of a solid-state silicon based quantum computer", invited review, Surface Science 532, 1209 (2003).

[102] A.C Graham, K.J. Thomas, M. Pepper, N.R. Cooper, **M.Y. Simmons** and D.A. Ritchie, "Interaction effects at crossing of spin- polarised 1D subbands", Phys. Rev. Lett. 91, 136404 (2003).

[103] L. Oberbeck, N.J. Curson, **M.Y. Simmons**, S.R. Schofield and R.G. Clark, "Challenges in surfaces for quantum computing", Surface Review and Letters, 10, 415 (2003).

[104] M. Kataoka, C.J.B. Ford, **M.Y, Simmons** and D.A. Ritchie, "Selective spin resolved edge-current injection in a quantum dot", Phys. Rev. B 68, 153305 (2003)

[105] L. Oberbeck, T. Hallam, N.J. Curson, **M.Y. Simmons** and R.G. Clark, "Epitaxial silicon growth with in the presence of hydrogen", Applied Surf. Sci. 212, 319 (2003).

[106] N.J. Curson, S.R. Schofield, **M.Y. Simmons**, L. Oberbeck and R.G. Clark, "Critical issues in the formation of atomic arrays of phosphorus in silicon for the fabrication of a solid-state quantum computer", Surface Science 532, 678 (2003).

[107] C.T. Liang, C.G. Smith, **M.Y. Simmons**, G.H. Kim, D.A. Ritchie and M. Pepper, "Spin dependent transport in a dilute GaAs 2DEG in an in-plane magnetic field", Physica E 18, 141 (2003).

[108] F. Pulizzi, D. Sanvitto, P.C.M. Christianen, A.J. Shields, S.N. Holmes, **M.Y. Simmons**, D.A. Ritchie, M. Pepper, J.C. Maan, "Optical imaging of trion diffusion and drift in GaAs quantum wells", Phys. Rev. B 68, 205304 (2003).

[109] Y.Y. Proskuryakov, A.K. Savchenko, S.S. Safonov, L. Li, M. Pepper, **M.Y Simmons**, D.A. Ritchie, E.H. Linfield and Z.D. Kvon, "Interactions in 2D electron and hole systems in the intermediate and ballistic regimes", J. Phys. A 36, 9249 (2003).

[110] G.W. Brown, H. Grube, M.E. Hawley, S.R. Schofield, N.J. Curson, **M.Y. Simmons** and R.G. Clark, "Scanning tunnelling microscopy imaging of charged defects on clean Si(100)2x1", J. Vac. Sci. Technol. A 21, 1506 (2003).

[111] M. Zhu, A. Usher, A.J. Matthews, A. Potts, M. Elliott, W.G. Herrenden-Harker, D.A. Ritchie and **M.Y. Simmons**, Phys. Rev. B 67, 155329 (2003).

[112] R.T Harley, M.A. Brand, A. Malinowski, O.Z. Karimov, P.A. Marsden, A.J. Sheilds, D. Sanvitto, D.A. Ritchie and **M.Y. Simmons**, "Ultra-fast spin evolution in a high mobility 2DEG", Physica E 17, 324 (2003).

[113] R.G. Clark, R. Brenner, T.M. Buehler, V. Chan, N.J. Curson, A.S. Dzurak, E. Gauja, H.S Goan, A.D. Greentree, T. Hallam, A.R. Hamilton, L.C.L. Hollenberg, D.N. Jamieson, J.C McCallum, G.J. Milburn, J.L. O'Brien, L. Oberbeck, C.I. Pakes, S.D. Prawer, D.J. Reilly, F.J. Ruess, S.R. Schofield, **M.Y. Simmons**, F.E. Stanley, R.P. Starrett, C. Wellard and C.Yang, "Progress in silicon based quantum computing", Phil. Trans. Royal Soc. 361, 1451 (2003).

2002

[114] Y.Y. Proskuryakov, A.K. Savchenko, S.S. Safonov, M. Pepper, **M.Y Simmons** and D.A. Ritchie, "Hole-hole interaction effect in the conductance of the two-dimensional hole gas in the ballistic regime", Physical Review Letters 89, 6406 (2002).

[115] M. Kataoka, C.J.B. Ford, **M.Y. Simmons** and D.A. Ritchie, "Kondo effect in a quantum antidot", Physical Review Letters 89, 6803 (2002).

[116] M.A. Brand, A. Malinkowski, O.Z. Karimov, P.A. Marsden, R.T. Hartley, A.J. Shields, D. Sanvitto, D.A. Ritchie and **M.Y. Simmons**, "Precession and motional slowing of spin evolution in a high mobility two-dimensional electron gas", Physical Review Letters 89, 6601 (2002).

[117] D. Sanvitto, D.M. Whittaker, A.J. Shields, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Origin of the oscillator strength of the triplet state of a trion in a magnetic field", Physical Review Letters 89, 6805 (2002).

[118] L. Oberbeck, N.J. Curson, **M.Y. Simmons**, R. Brenner, A.R. Hamilton, S.R. Schofield and R.G. Clark, ""Encapsulation of phosphorus dopants in silicon for the fabrication of a quantum computer", Applied Physics Letters 81, 3197 (2002).

[119] **M.Y. Simmons**, A.R. Hamilton, C.E. Yasin, M. Pepper, D.A. Ritchie, K.W. West and L.N. Pfeiffer, "Localisation in strongly interacting 2D GaAs systems", (invited review) Phys. Stat. Solidi. 230, 81(2002).

[120] R. Crook, C.G. Smith, W.R. Tribe, S.J. O'Shea, **M.Y. Simmons** and D.A. Ritchie, "Quantum dot electron occupancy controlled by a scanning probe", Phys. Rev. B 12, 1301 (2002).

[121] R.Wirtz, R. Newbury, J.T. Nicholls, W.R. Tribe, **M.Y. Simmons** and M. Pepper, "Tuning the electron transport properties of a one-dimensional constriction using hydrostatic pressure", Phys. Rev. B 65, 233316 (2002).

[122] S.J. Geer, A.G. Davies, C.H.W. Barnes, K.R. Zolleis, **M.Y. Simmons**, and D.A.Ritchie, "Tunneling gap collapse and v=2 quantum Hall state in a bilayer electron system", Phys. Rev. B 66 5318 (2002).

[123] J.L. O'Brien, S.R. Schofield, **M.Y. Simmons**, R.G. Clark, A.S. Dzurak, N.J. Curson, B.E. Kane, N.S. McAlpine, M.E. Hawley, and G.W. Brown, "Scanning tunnelling microscope fabrication of arrays of phosphorus atom qubits for a silicon quantum computer", Smart Materials and Structures 11, 741 (2002).

[124] M.E. Hawley, G.W. Brown, **M.Y. Simmons** and R.G. Clark, "Fabricating a qubit array with a scanning tunnelling microscope", Los Alamos Science 27, 302 (2002).

[125] C.E. Yasin, **M.Y. Simmons**, A.R. Hamilton, N.E. Lumpkin, R.G. Clark, L.N. Pfeiffer and K.W. West, "The fate of quantum Hall extended states as B→ 0 and the possibility of a 2D metal", Physica E 12, 695 (2002).

[126] A.R. Hamilton, **M.Y. Simmons**, C.B. Hanna, J.C. Diaz-Velez, M. Pepper and D.A. Ritchie, "Exchange driven bilayer to monolayer charge transfer in an asymmetric double well", Physica E 12, 304 (2002).

[127] G.W. Brown, H. Grube, M.E. Hawley, S.R. Schofield, N.J. Curson, **M.Y. Simmons**, R.G. Clark, "Imaging charged defects on clean Si(100)2x1 with scanning tunnelling microscopy", J. Appl. Phys. 92, 820 (2002).

[128] R. Crook, C.G. Smith, **M.Y. Simmons** and D.A. Ritchie, "Imaging electrostatic micro-constrictions in long 1D wires", Physica E 12, 695 (2002).

[129] A.K. Savchenko, Y.Y. Proskuryakov, S.S. Safonov, M. Pepper, **M.Y Simmons**, D.A. Ritchie, A.G. Pogosov and Z.D. Kvon, "Fermi- liquid behaviour near the cross-over from metal to insulator in 2D systems", Phys. Stat. Solidi B 230, 89 (2002).

[130] A.K. Savchenko, Y.Y. Proskuryakov, S.S. Safonov, M. Pepper, **M.Y Simmons** and D.A. Ritchie, "Fermi-liquid behaviour of 2D electron and hole systems", Physica E 12, 595 (2002).

[131] D. Sanvitto, A.J. Shields, D.M. Whittaker, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Dynamic of spin triplet and spin trions in a GaAs quantum well", Phys. Stat. Solidi A 190, 809 (2002).

[132] K.J. Thomas, J.T. Nicholls, M. Pepper, **M.Y. Simmons**, and D.A. Ritchie, "Effect of temperature and magnetic field on the '0.7' structure in a ballistic 1D wire", Physica E 12, 708 (2002).

[133] Y.M. Cheng, T.Y. Huang, C.T. Liang, **M.Y. Simmons**, C.F. Huang, C.G. Smith, D.A. Ritchie and M. Pepper, "Experimental studies of composite fermion conductivity: dependence on carrier density", Physica E 12, 105 (2002).

[134] Y.M. Cheng, T.Y. Huang, C.H. Pao, C.T. Liang, **M.Y. Simmons**, C.G. Smith, D.A. Ritchie, M. Pepper, G.H. Kim and J.Y. Leem "Spin dependent transport in a 2DEG in a parallel magnetic field", Physica E 12, 412 (2002).

[135] M. Kataoka, C.J.B. Ford, G. Faini, D. Mailly, **M.Y. Simmons**, D.R. Mace, C.T. Liang and D.A. Ritchie, "Spin-splitting of Aharonov-Bohm oscillations in an antidot" Physica E 12, 782 (2002).

2001

[136] A.R. Hamilton, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "On the metallic behaviour in two dimensions", Physical Review Letters 87, 126802 (2001).

[137] J.L. O'Brien, S.R. Schofield, **M.Y. Simmons**, R.G. Clark, A.S. Dzurak, N.J. Curson, B.E. Kane, N.S. McAlpine, M.E Hawley and G.W. Brown, "Towards the fabrication of phosphorus qubits for a silicon quantum computer", Phys. Rev. B 64, 161401 (2001).

[138] D. Sanvitto, D. Pulizzi, A.J. Shields, P.C.M. Christianson, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Observation of charged transport by negatively charged excitons", Science 5543, 837 (2001).

[139] G.H. Kim, **M.Y. Simmons**, C.T. Liang, D.A. Ritchie, A.C. Churchill, H.S. Sim, G. Ihm, and N. Kim, "Method of determining potential barrier heights at submonolayer AlAs/GaAs heterointerfaces", Phys. Rev. B 64, 165313 (2001).

[140] C.T. Liang, C.G. Smith, **M.Y. Simmons**, D.A. Ritchie, "Spin dependent transport in a dilute 2D GaAs system", Phys. Rev B 64, 233319 (2001).

[141] Y.Y. Proskuryakov, A.K. Savchenko, S.S. Safonov, M. Pepper, **M.Y Simmons** and D.A. Ritchie, "Fermi-liquid behaviour of the low density 2D hole gas at large rs", Physical Review Letters 86, 4895 (2001).

[142] A.S. Dzurak, **M.Y. Simmons**, A.R. Hamilton, R.G. Clark, R. Brenner, T.M. Buehler, N.J. Curson, E. Gauja, R.P. Mckinnon, L.D. Macks, M. Nitic, J.L. O'Brien, L. Oberbeck, D.J. Reilly, S.R. Schofield, F.E. Stanley, D.N. Jamieson, S. Prawer, C. Yang and G.J. Milburn, 'Construction of a silicon-based solid state quantum computer ', Quantum Information and computation 1, 82 (2001).

[143] R. Crook, C.G. Smith, **M.Y. Simmons**, D.A. Ritchie, "Imaging random telegraph signal sites near a quasi 1D electron system", Journal of Physics C13, L249 (2001).

[144] O.A. Tkachenko, V.A. Tkachenko, D.G. Baksheyev, C.T. Liang, **M.Y. Simmons**, C.G. Smith, D.A. Ritchie, G.H. Kim and M. Pepper, "Coulomb charging in an open quantum dot device", J. Phys. C 13, 9515 (2001).

[145] **M.Y. Simmons**, A.R. Hamilton, M. Pepper, E.H. Linfield, P.D. Rose, D.A. Ritchie, "Localisation two dimensional systems", Physica E 11, 161(2001).

[146] C.T. Liang, **M.Y. Simmons**, C.G. Smith, G.H. Kim, D.A. Ritchie and M. Pepper, "Coulomb charging effects in an open quantum dot device at B=0", Jpn. J. Appl. Phys. 40, 1936 (2001).

[147] A.R. Hamilton, **M.Y. Simmons**, M. Pepper, E.H. Linfield, P.D. Rose, D.A. Ritchie, "Localisation and the metal-insulator transition in 2D", Physica B 296, 21(2001).

[148] D. Sanvitto, R.A. Hogg, A.J. Shields, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Formation and recombination dynamics of charged excitons in a GaAs quantum well", Phys. Stat. Solidi B 227, 297 (2001).

[149] A.T. Sellwood, C.G. Smith, E.H. Linfield, **M.Y. Simmons** and D.A. Ritchie, "Scanning non-invasive voltage probe operating at 4.2K", Rev. Sci. Instru. 72, 2100 (2001).

[150] C.T. Liang, Y.M. Cheng, C.F. Huang, **M.Y. Simmons**, D.A. Ritchie, G.H. Kim, J.Y. Leem, Y.H. Chang and Y.F. Chen, "Quantum magneto-transport in 2D GaAs electron systems and SiGe hole gases", J. Phys. Chem. Solids 62, 1789 (2001).

[151] J.L. O'Brien, S.R. Schofield, **M.Y. Simmons**, R.G. Clark, A.S. Dzurak, N.J. Curson, B.E. Kane, N.S. McAlpine, M.E. Hawley and G.W. Brown, 'Nanoscale phosphorus atom arrays created using STM for the fabrication of a silicon based quantum computer', BioMEMS and Smart Nanostructures 4590, 299 (2001).

[152] C.T. Liang, M. Pepper, **M.Y. Simmons**, C.G. Smith and D.A. Ritchie, "Transport in a modulated 1D channel", Ch. J. Physics 39, 533 (2001).

[153] G.H. Kim, H.S. Sim, **M.Y. Simmons**, C.T. Liang and D.A. Ritchie, "Effective potential calculation of a 2D system containing a 1D AlAs monolayer", J. Korean Soc. 39, S11 (2001).

2000

[154] **M.Y. Simmons**, A.R. Hamilton, M. Pepper, E.H. Linfield, P.D. Rose, D.A. Ritchie, "Weak localisation, hole-hole interactions and the metal-insulator transition in two dimensions", Physical Review Letters 84, 2489 (2000).

[155] C.T. Liang, **M.Y. Simmons**, C.G. Smith, G.H. Kim, D.A. Ritchie and M. Pepper, "Multi-layered gated lateral quantum dot devices", Appl. Phys. Letters 76, 1134 (2000).

[156] C.T. Liang, M. Pepper, **M.Y. Simmons**, C.G. Smith and D.A. Ritchie, "Spin-dependent transport in a quasi-ballistic quantum wire", Phys. Rev. B 61, 9952 (2000).

[157] R. Crook, C.G. Smith, **M.Y. Simmons**, D.A. Ritchie, "Imaging cyclotron orbits and scattering sites in a high mobility two-dimensional electron gas", Physical Review B 62, 5174 (2000).

[158] R. Kaur, A.J. Shields, J.L. Osborne, **M.Y. Simmons** and D.A. Ritchie, "Electron density dependence of the excitonic absorption threshold of GaAs", Physical Review B 62, R4817 (2000).

[159] K.J. Thomas, J.T. Nicholls, M. Pepper, W.R. Tribe, **M.Y. Simmons**, and D.A. Ritchie, "Spin properties of low density one dimensional wires", Physical Review B 61, R13365 (2000).

[160] N.J. Appleyard, J.T. Nicholls, M. Pepper, W.R. Tribe, **M.Y. Simmons**, and D.A. Ritchie, "Direction-resolved transport and possible many-body effects in one-dimensional thermopower", Physical Review B 62, R16275 (2000).

[161] R. Crook, C.G. Smith, **M.Y. Simmons**, D.A. Ritchie, "One dimensional probability density observed using scanning gate microscopy", J. Phys. C12, L735 (2000).

[162] R. Crook, C.G. Smith, C.H.W. Barnes, **M.Y. Simmons**, D.A. Ritchie, "Imaging diffraction-limited electronic collimation from a non-equilibrium one-dimensional ballistic constriction", J. Phys. C 12, L167 (2000).

[163] N.J. Appleyard, J.T. Nicholls, W.R. Tribe, **M.Y. Simmons** and M. Pepper, "Thermopower of one-dimensional devices – measurement and applications", Physica E 6, 534 (2000).

[164] D. Sanvitto, R.A. Hogg, A.J. Shields, D.M. Whittaker, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Rapid radiative decay of charged excitons", Physical Review B 62, R13294 (2000).

[165] M. Kataoka, C.J.B. Ford, G. Faini, D Mailly, **M.Y. Simmons**, D.R. Mace, C.T. Liang and D.A. Ritchie, "Coulomb blockade of tunnelling through compressible rings around an antidot", Phys. Rev. B 62, 4817 (2000).

[166] D.S. Kainth, D. Richards, H.P. Hughes, **M.Y. Simmons** and D.A. Ritchie, "Electron correlations in an electron bilayer at finite temperature: Landau damping of the acoustic plasmon", J. Phys. C 12, 439 (2000).

[167] A. Malinowski, R.S. Britton, T. Grevatt, R.T. Harley, D.A. Ritchie and **M.Y. Simmons**, "Spin relaxation in GaAs/AlGaAs quantum wells", Physical Review B 62, 13034 (2000).

[168] K.J. Thomas, J.T. Nicholls, W.R. Tribe, **M.Y. Simmons**, A.G. Davies, D.A. Ritchie and M. Pepper, "Bonding and antibonding states in strongly coupled ballistic one-dimensional wires", Physica E 6, 581 (2000).

[169] R. Crook, C.G. Smith, C.H.W. Barnes, **M.Y. Simmons** and D.A. Ritchie, "Imaging electron and conduction band hole trajectories through one and two series constrictions", Physica E 6, 234 (2000).

[170] C.T. Liang, **M.Y. Simmons**, C.G. Smith, G.H. Kim, D.A. Ritchie and M. Pepper, "Evidence for charging effects in an open dot at zero magnetic field", Physica E 6, 418 (2000).

[171] M. Kataoka, C.J.B. Ford, G. Faini, D. Mailly, **M.Y. Simmons**, D.R. Mace, C.T. Liang and D.A. Ritchie, "Detection of Coulomb charging around an antidot in the quantum Hall regime" Physica E 6, 495 (2000).

[172] S.A. Nield, J.T. Nicholls, W.R. Tribe, **M.Y. Simmons** and D.A. Ritchie, "Independent contacts to a double-electron gas using mesoscopic surface gates", J. Appl. Physics 87, 4036 (2000).

[173] R. Kaur, A.J. Shields, J.L. Osborne, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Electron density dependence of the excitonic absorption threshold of GaAs", Phys. Stat. Solidi 178, 465 (2000).

[174] A.J. Matthews, J.P. Watts, M. Zhu, A. Usher, M. Elliott, W.G. Herrenden-Harker, P.R. Morris, **M.Y. Simmons**, and D.A. Ritchie, "Current breakdown of the integer and fractional quantum Hall effects detected by torque magnetometry", Physica E 6, 140 (2000).

[175] A. Corchia, C.M. Ciesla, D.D. Arnone, E.H. Linfield, **M.Y. Simmons**, and M. Pepper, "Crystallographic orientation dependence of bulk optical rectification", Journal of Modern Optics 47, 1837 (2000).

[176] **M.Y. Simmons**, A.R. Hamilton, M. Pepper, E.H. Linfield and D.A. Ritchie, "Is there a metallic state in 2 dimensions?", Australian Journal of Physics 53, 513 (2000).

[177] A.R. Hamilton, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "Influence of inversion symmetry on the metallic behaviour in a dilute two-dimensional hole system", Australian Journal of Physics 53, 523 (2000).

[178] A. Corchia, R. McLaughlin, C.M. Ciesla, M.B. Johnston, D.D. Arnone, E.H. Linfield, A.G. Davies, **M.Y. Simmons**, and M. Pepper, "Enhanced THz emission from (100) GaAs in the presence of a magnetic field", Tech. Digest. CLEO TOPS 39, 554 (2000).

1999

[179] **M.Y. Simmons** and A.R. Hamilton, "Real metals, 2D or not 2D", Nature 400, 6746 (1999).

[180] A.R. Hamilton, **M.Y. Simmons**, M. Pepper, E.H. Linfield, P.D. Rose and D.A. Ritchie, "Re-entrant insulator-metal-insulator transition at B=0 in a two-dimensional hole gas", Physical Review Letters 82, 1542 (1999).

[181] C.T. Liang, **M.Y. Simmons**, C.G. Smith, D.A. Ritchie, M. Pepper, "Fabrication and transport properties of clean long one-dimensional quantum wires formed in modulation-doped GaAs/AlGaAs heterostructures", Appl. Phys. Letters, 75, 2975 (1999).

[182] M. Kataoka, C.J.B. Ford, G. Faini, D. Mailly, **M.Y. Simmons**, D.R. Mace, C.T. Liang and D.A. Ritchie, "Detection of Coulomb charging around an antidot in the quantum Hall regime" Physical Review Letters 83, 160 (1999).

[183] R.H. Harrell, K.S. Physkin, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Fabrication of high-quality 1 and 2DEGs in undoped GaAs", Appl. Phys. Letters 74, 2328 (1999).

[184] C.T. Liang, **M.Y. Simmons**, C.G. Smith, G.H. Kim, D.A. Ritchie, M. Pepper, "Spin-dependent transport in a clean one-dimensional channel", Phys. Rev. B 60, 10687 (1999).

[185] K.J. Thomas, J.T. Nicholls, **M.Y. Simmons**, M. Pepper, and D.A. Ritchie, "Controlled wave-function mixing in strongly coupled one-dimensional layers", Phys. Rev. B 59, R12252 (1999).

[186] R.A. Hogg, D. Sanvitto, A.J. Shields, **M.Y. Simmons**, D.A. Ritchie, M. Pepper, "Carrier dynamics and recombination processes of charged excitons in a GaAs/AlGaAs quantum well", Physica B 272, 412 (1999).

[187] J. Cunningham, V.I. Talyanskii, J.M. Shilton, M. Pepper, **M.Y. Simmons**, D.A. Ritchie, "Single-electron acoustic charge transport by two counterpropagating surface acoustic wave beams" Phys. Rev. B 60, 4580 (1999).

[188] C.H.W. Barnes, A.G. Davies, K.R. Zolleis, **M.Y. Simmons**, D.A. Ritchie, "Intrinsic coupling mechanisms between two-dimensional electron systems in double quantum well structures", Phys. Rev. B 59, 7669 (1999).

[189] D.S. Kainth, D. Richards, A.S. Bhatti, **M.Y. Simmons**, D.A. Ritchie, "Angle-resolved Raman spectroscopy of the collective modes in an electron bilayer", Phys. Rev. B 59, 2095 (1999).

[190] I.S. Millard, N.K. Patel, C.L. Foden, A.R. Hamilton, **M.Y. Simmons** and D.A. Ritchie, "Anomalous integer quantum Hall states in coupled double quantum wells and the effect of Landau level broadening", J. Phys. C 11, 3711 (1999).

[191] R.H. Harrell, K.S. Physkin, D.A. Ritchie, **M.Y. Simmons** and M. Pepper, "Very high quality 2DEGs formed without dopantS in GaAs/AlGaAs", J. Cryst. Growth 202, 159 (1999).

[192] **M.Y. Simmons**, A.R. Hamilton, M. Pepper, E.H. Linfield, P.D. Rose, D.A. Ritchie, A.K. Savchenko and T.G. Griffiths, "Metal-insulator transition in a dilute two dimensional GaAs/AlGaAs hole gas", Physical Review Letters 80, 1292 (1998).

[193] C.T. Liang, **M.Y. Simmons**, C.G. Smith, G.H. Kim, D.A. Ritchie and M. Pepper, "Spin splitting and Coulomb charging in a quantum dot formed in a clean one-dimensional channel with two tuneable barriers", Physical Review Letters 81, 3507 (1998).

[194] N.J. Appleyard, J.T. Nicholls, **M.Y. Simmons**, W.R. Tribe and M. Pepper, "Thermopower for a 2D electron gas using 1D thermopower", Physical Review Letters 81, 3491 (1998).

[195] J.P. Watts, A. Usher, A.J. Matthews, M. Zhu, M. Elliott, W.G. Herrenden-Harker, P.R. Morris, **M.Y. Simmons**, D.A. Ritchie, "Current breakdown of the fractional quantum Hall effect through contact-less detection of induced currents", Physical Review Letters 81, 4405 (1998).

[196] A.J. North, E.H. Linfield, **M.Y. Simmons**, and D.A. Ritchie, "Electron reflection and interference in the GaAs/AlAs-Al Schottky collector resonant tunneling diode", in Phys. Rev. 57, R1849 (1998).

[197] D.S. Kainth, D. Richards, H.P. Hughes, **M.Y. Simmons**, D.A. Ritchie, "Temperature dependant Landau damping of the acoustic plasmon in a bilayer system", Phys. Rev. B 57, R14999 (1998).

[198] **M.Y. Simmons**, A.R. Hamilton, T.G. Griffiths, A.K. Savchenko, D.A. Ritchie and M. Pepper, "Metal-insulator transition in an ultra low density (rs~23) two-dimensional GaAs/AlGaAs hole gas", Physica B 251, 705 (1998).

[199] A.R. Hamilton, **M.Y. Simmons**, T.G. Griffiths, A.K. Savchenko, D.A. Ritchie and M. Pepper, "Many body interactions and insulating phases in bilayer two dimensional hole gases", Physica B 251, 819 (1998).

[200] J.L. Osborne, A.J. Shields, **M.Y. Simmons**, N.R. Cooper, D.A. Ritchie and M. Pepper. "Excitonic recombination processes in spin polarised 2DEGs", Phys. Rev. B 58, R4227 (1998).

[201] D.S. Kainth, D. Richards, H.P. Hughes, **M.Y. Simmons**, D.A. Ritchie, "Temperature dependant Landau damping of the acoustic plasmon in a bilayer system", Phys. Rev. B 57, R2065 (1998).

[202] K.J. Thomas, J.T. Nicholls, N.J. Appleyard, **M.Y. Simmons**, M. Pepper, D.R. Mace, W.R. Tribe and D.A. Ritchie, "Interaction effects in a 1D constriction", Phys. Rev. B 87, 4846 (1998).

[203] J.L. Osborne, A.J. Shields, **M.Y. Simmons**, N.R. Cooper, D.A. Ritchie and M. Pepper. "Excitons, Spin-waves and Skyrmions in the Optical Spectra of a two dimensional electron gas", Solid State Electronics 42, 1169 (1998).

[204] A.J. Shields, J.L. Osborne, **M.Y. Simmons**, N.R. Cooper, D.A. Ritchie and M. Pepper. "Electron coupling effects on negatively charged excitons in GaAs double quantum wells", Solid State Electronics 42, 1569 (1998).

[205] A.G. Davies, C.H.W. Barnes, K.R. Zolleis, **M.Y. Simmons** and D.A. Ritchie, "Probing the transition from insulating to metallic behaviour using bi-layer electron systems", Physica B 258, 417 (1998).

[206] C.H.W. Barnes, A.G. Davies, K.R. Zolleis, **M.Y. Simmons**, D.A. Ritchie, "A study of the relative strengths of spin-pseudospin phases in a strongly coupled double quantum well systems", Physica B 258, 130 (1998).

[207] S.A.J. Wiegers, M. Specht, E.D. Bibow, L.P. Levy, S. Melinte, E. Grivei, V. Bayot, **M.Y. Simmons**, D.A. Ritchie, M. Shayegan, A. Cavanna, B. Etienne, G. Martinez and P. Wyder "Magnetization in an incompressible two-dimensional electron gas", Physica B 258, 16 (1998).

[208] J.L. Osborne, A.J. Shields, **M.Y. Simmons**, N.R. Cooper, C.L. Foden, D.A. Ritchie, M. Pepper, "Magneto-optical studies of excitonic state in a 2DEG around □=1", Physica B 251, 538 (1998).

[209] J.D. Franklin, C.J.B. Ford, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Non-equilibrium transport along an edge of variable slope in the FQ Hall regime", Physica B 251, 405 (1998).

[210] S.A.J. Wiegers, M. Specht, L.P. Levy, **M.Y. Simmons**, D.A. Ritchie, A. Cavanna, B. Etienne, G. Martinez, and P. Wyder, "Magnetisation and incompressibility of a high mobility 2D electron gas in the IQHE", Physica B 251, 115 (1998).

[211] A.J. Daneshvar, C.J.B. Ford, A.R. Hamilton, **M.Y. Simmons**, M. Pepper, and D.A. Ritchie, "Enhanced g-factors of a one dimensional gas", Physica B 251, 166 (1998).

[212] A.J. Shields, J.L. Osborne, D.M. Whittaker, **M.Y. Simmons**, F.M. Bolton, D.A. Ritchie and M. Pepper, "Charged excitons under applied electric and magnetic fields", Physica B 251, 584 (1998).

[213] K.R. Zolleis, A.G. Davies, C.H.W. Barnes, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Onset of subband locking in double quantum well structures as a signature of wavefunction delocalisation", Physica B 251, 850 (1998).

[214] I.M. Castleton, A.G. Davies, J.E. Frost, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Closely separated one dimensional quantum wires: Coupled ballistic conduction and compressibility measurements", Physica B 251, 157 (1998).

[215] H.D.M. Davies, J.C. Harris, R.L. Brockland, J.F. Ryan, A.J. Turberfield, **M.Y. Simmons**, and D.A. Ritchie., "Skyrmion-hole excitations at n=1 studied by photoluminescence spectroscopy", Physica B 251, 544 (1998).

[216] C.T. Liang, J.E.F. Frost, **M.Y. Simmons**, D.A. Ritchie, and M. Pepper, "Experimental evidence for a MIT and geometric effect in a half filled Landau level", Physica E 2, 78(1998).

[217] A.J. Shields J.L. Osborne, **M.Y. Simmons**, D.M. Whittaker, F.M. Bolton, D.A. Ritchie and M. Pepper, "Stark effect of negatively and positively charged excitons in semiconductor quantum wells", Physica E 2, 87 (1998).

[218] D.S. Kainth, D. Richards, H.P. Hughes, **M.Y. Simmons**, D.A. Ritchie, "Raman scattering study of the plasmon modes in bilayer systems", Physica E 2, 834 (1998).

[219] K.J. Thomas, J.T. Nicholls, **M.Y. Simmons**, M. Pepper, D.R. Mace and D.A. Ritchie, "Nonlinear transport in a single mode one dimensional electron gas", Philosophical Magazine B 77, 1213 (1998).

1997

[220] **M.Y. Simmons**, A.R. Hamilton, A. Kurobe, S.J. Stevens, D.A. Ritchie and M. Pepper, "Fabrication of high mobility in-situ back-gated (311)A hole gas heterojunctions", Appl. Phys. Letters 70, 2750 (1997).

[221] A.J. Daneshvar, C.J.B. Ford, **M.Y. Simmons**, A.R. Hamilton and M. Pepper, "Enhanced g-factors of a 1D hole gas with quantised conductance", Physical Review Letters 79, 3387 (1997).

[222] S.A.J. Wiegers, M. Spect, L.P. L'evy, **M.Y. Simmons**, A. Cavanna, B. Etienne, G. Martinez, and P. Wyde, "Magnetization and energy gaps of a high mobility 2D electron gas in the quantum limit", Physical Review Letters 79, 3238 (1997).

[223] A.J. Shields, F.M. Bolton, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "Electric field induced ionisation of negatively charged excitons in quantum wells", Phys. Rev. B 55, R1970 (1997).

[224] A.J. Daneshvar, C.J.B. Ford, A.R. Hamilton, **M.Y. Simmons** and M. Pepper, "Enhanced g-factors of a one dimensional hole gas with quantised conductance", Phys. Rev. B 55, R13409 (1997).

[225] A.J. Shields, J.L. Osborne, D.M. Whittaker, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "Negatively charged excitons in coupled double quantum wells", Phys. Rev. B 55, R1318 (1997).

[226] N. Garro, L. Pugh, R.T. Phillips, V. Drouot, **M.Y. Simmons**, B. Kardynal and D.A. Ritchie, "Resonant Rayleigh scattering by excitonic states laterally confined in the interface roughness of GaAs/AlGaAs single quantum wells", Phys. Rev. B 55, R13752 (1997).

[227] I.S. Millard, N.K. Patel, C.L. Foden, **M.Y. Simmons**, D.A. Ritchie, G.A.C. Jones and M. Pepper, "Observation of magnetic breakdown in coupled double quantum wells", Phys. Rev. B 55, R13401 (1997).

[228] I.S. Millard, N.K. Patel, C.L. Foden, E.H. Linfield, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Effect of finite quantum well width on the compressibility of a two-dimensional electron gas", Phys. Rev. B 55, 6715 (1997).

[229] C.T. Liang, J.E.F. Frost, **M.Y. Simmons**, D.A. Ritchie, and M. Pepper, "Experimental evidence of a metal-insulator transition in a half filled Landau level", Solid State Communications 102, 327 (1997).

[230] N.K. Patel, I.S. Millard, C. Foden, E.H. Linfield, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Compressibility studies of two-dimensional electron gases", Superlattices and Microstructures 21, 125 (1997).

[231] D.M. Whittaker, A.J. Shields, **M.Y. Simmons** and D.A. Ritchie, "X- singlet and triplet states at high magnetic fields" Physica Stat. Solidi A 164, 339 (1997).

[232] N. Garro, R.T. Phillips, A. Cantarero, **M.Y. Simmons** and D.A. Ritchie, "Resonant Rayleigh scattering by confined two-dimensional excitonic states", Physica Stat. Solidi B 204, 45 (1997).

[233] **M.Y. Simmons**, A.R. Hamilton, A. Kurobe, S.J. Stevens, D.A. Ritchie and M. Pepper, "The Physics and fabrication of in-situ back-gated (311)A hole gas heterojunctions", Microelectronics Journal 28, 795 (1997).

1996

[234] K.J. Thomas, J.T. Nicholls, **M.Y. Simmons**, M. Pepper, D.R. Mace, and D.A. Ritchie, "Possible spin polarisation in a one-dimensional electron-gas", Physical Review Letters 77, 135 (1996).

[235] A.R. Hamilton, **M.Y. Simmons**, F.M. Bolton, N.K. Patel, I.S. Millard, J.T. Nicholls, D.A. Ritchie, and M. Pepper, "Fractional quantum hall-effect in bilayer 2-dimensional hole-gas systems", Phys. Rev. B 54, R5259 (1996).

[236] B. Brosh, **M.Y. Simmons**, S.N. Holmes, A.R. Hamilton, D.A. Ritchie and M. Pepper, "Probing the band-structure of a 2-dimensional hole gas-using a one-dimensional superlattice" Phys. Rev. B 54, R14273 (1996).

[237] J.E.F. Frost, C.T. Liang, D.R. Mace, **M.Y. Simmons**, D.A. Ritchie, and M. Pepper, "Ballistic composite fermions in semiconductor nanostructures", Phys. Rev. B 53, R9602 (1996).

[238] A.G. Davies, C.H.W. Barnes, K.R. Zolleis, J.T. Nicholls, **M.Y. Simmons** and D.A. Ritchie, "Hybridisation of single and double layer behaviour in a double quantum well structure", Phys. Rev. B 54, R17331 (1996).

[239] C.T. Liang, C.G. Smith, D.R. Mace, J.T. Nicholls, J.E.F. Frost, **M.Y. Simmons**, A.R. Hamilton, D.A. Ritchie, and M. Pepper, "Measurements of a composite fermion split-gate device", Phys. Rev. B 53, R7596 (1996).

[240] I.S. Millard, N.K. Patel, **M.Y. Simmons**, E.H. Linfield, D.A. Ritchie, G.A.C. Jones and M. Pepper, "Compressibility studies of double-electron and double hole gas systems", Appl. Phys. Letters 68, 3323 (1996).

[241] V. Chabasseur-Molyneux, J.E.F. Frost, **M.Y. Simmons**, D.A. Ritchie and M. Pepper, "Transport through an array of small ohmic contacts alloyed to the 2-dimensional electron-gas of a GaAs/AlGaAs heterostructure", Appl. Phys. Letters 68, 3434 (1996).

[242] R.T. Phillips, G.C. Nixon, T. Fujita, **M.Y. Simmons** and D.A. Ritchie, "Excitonic trions in undoped GaAs quantum-wells", Solid State Communications 98, 287 (1996).

[243] I.S. Millard, N.K. Patel, **M.Y. Simmons**, A.R. Hamilton, D.A. Ritchie and M. Pepper, "Integer quantum hall states in coupled double-electron gas systems at mismatched carrier densities", J. Phys. C 8, 1311 (1996).

[244] A.J. Shields, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "Evolution of GaAs quantum-well excitons with excess electron-density and magnetic-field" Solid-state Electronics 40, 275 (1996).

[245] A.J. Shields, J.L. Osborne, **M.Y. Simmons**, D.A. Ritchie, and M. Pepper, "Comparison of optical and transport measurements of electron densities in GaAs/AlxGa1-xAs quantum-wells", Semiconductor Science and Technology 11, 890 (1996).

[246] I.S. Millard, N.K. Patel, E.H. Linfield, P.D. Rose, **M.Y. Simmons**, D.A. Ritchie, G.A.C. Jones, and M. Pepper, "Negative transconductance in parallel conducting systems controlled by device geometry and magnetic-field", Semiconductor Science and Technology 11, 483 (1996).

[247] E.T.M. Kernohan, R.T. Phillips, B.H. Bairamov, D.A. Ritchie and **M.Y. Simmons**, "Raman-scattering line shapes in GaAs and InP", Solid State Communications 100, 263 (1996).

[248] J.M. Shilton, D.R. Mace, V.I. Talyanskii, Y. Galperin, **M.Y. Simmons**, M. Pepper and D.A. Ritchie, "On the acoustoelectric current in a one-dimensional channel", J. Phys. C 8, 1337 (1996).

[249] A.J. Shields, M. Pepper, **M.Y. Simmons** and D.A. Ritchie, "Magneto optical spectroscopy of neutral and negatively charged excitons in GaAs quantum-wells", Surface Science 362, 451 (1996).

[250] C.H.W. Barnes, D.R. Mace, G. Faini, D. Mailly, **M.Y. Simmons**, C.J.B. Ford, and M. Pepper, "Detection of the oscillation of the Fermi energy of a 2DEG", Surface Science 362, 608 (1996).

[251] C.T. Liang, C.G. Smith, D.R. Mace, J.T. Nicholls, J.E.F. Frost, **M.Y. Simmons**, A.R. Hamilton, D.A. Ritchie and M. Pepper, "Measurements of a composite fermion split-gate" Surface science 362, 71 (1996).

[252] J.D.F. Franklin, I. Zailer, C.J.B. Ford, P.J. Simpson, J.E.F. Frost, D.A. Ritchie, **M.Y. Simmons**, M. Pepper, "The Aharonov-Bohm effect in the fractional quantum hall regime", Surface Science 362, 17 (1996).

[253] A.J. Shields, M. Pepper, D.A. Ritchie and **M.Y. Simmons**, "Influence of excess electrons and magnetic fields on Mott-Wannier excitons in GaAs quantum wells", Advances in Physics 44, 47 (1996).

1995

[254] A.J. Shields, M. Pepper, **M.Y. Simmons**, and D.A. Ritchie, "Spin-triplet negatively charged excitons in GaAs quantum wells", Phys. Rev. B 52, R7841 (1995).

[255] A.J. Shields, J.L Osborne, **M.Y. Simmons**, M. Pepper, and D.A. Ritchie, "Magneto-optical spectroscopy of positively charged excitons in GaAs quantum wells" Phys. Rev B 52, R5523 (1995).

[256] R. Taboryski, B. Brosh, **M.Y. Simmons**, D.A. Ritchie, C.J.B. Ford, and M. Pepper "Magneto-thermopower oscillations in a lateral superlattice", Phys. Rev. B 51, R17243 (1995).

[257] A.J. Shields, M. Pepper, D.A. Ritchie, **M.Y. Simmons**, and G.A.C. Jones, "Quenching of excitonic optical transitions by excess electrons in GaAs quantum wells", Phys. Rev. B 51, R18049 (1995).

[258] D.R. Mace, C.H.W. Barnes, G. Faini, D. Mailly, **M.Y. Simmons**, C.J.B. Ford and M. Pepper, "General picture of quantum hall transitions in quantum anti-dots" Phys. Rev. B 52, R8672 (1995).

[259] J.M. Shilton, D.R. Mace, V.I. Talayanskii, M. Pepper, **M.Y. Simmons**, A.C. Churchill, and D.A. Ritchie, "Effect of spatial dispersion on acoustoelectric current in high mobility two dimensional electron gas", Phys. Rev. B 51, R14770 (1995).

[260] A.G. Davies, E.E. Mitchell, R.G. Clark, P.E. Simmonds, D.A. Ritchie, **M.Y. Simmons**, M. Pepper, and G.A.C. Jones, "Magneto-photoluminescence of the 2DHG in p-type GaAs" Phys. Rev. B 51, R7357 (1995).

[261] K.J. Thomas, **M.Y. Simmons**, J.T. Nicholls, D.R. Mace, M. Pepper, and D.A. Ritchie, "Ballistic transport in one-dimensional constrictions formed in deep two dimensional electron gases", Appl. Phys. Lett. 67, 109 (1995).

[262] **M.Y. Simmons**, A.C. Churchill, G.H. Kim, A.R. Hamilton, A. Kurobe, D.R. Mace, D.A. Ritchie, and M. Pepper, "The growth of high mobility heterostructures on (311)B GaAs" Journal of Microelectronics 26, 897 (1995).

[263] J.E.F. Frost, C.T. Liang, D.R. Mace, **M.Y. Simmons**, M. Pepper, and D.A. Ritchie, "Reflection of edge states in the fractional quantum hall regime" Solid State Communications 96, 327 (1995).

[264] V.I. Talayanskii, D.R. Mace, **M.Y. Simmons**, M. Pepper, A.C. Churchill, J.E.F. Frost, D.A. Ritchie, and G.A.C. Jones, "The propagation of low frequency edge excitations in the IQHE regime" J. Phys. C 7, L435 (1995).

[265] J.M. Shilton, D.R. Mace, V.I. Talayanskii, **M.Y. Simmons**, M. Pepper, A.C. Churchill, and D.A. Ritchie, "Experimental study of the acoustoelectric effects in GaAs-AlGaAs heterostructures", J. Phys. C 7, 7675 (1995).

1994

[266] V.I. Talayanskii, **M.Y. Simmons**, J.E.F. Frost, M. Pepper, A.C. Churchill, D.A. Ritchie, and G.A.C. Jones, "Experimental investigation of the damping of low frequency edge magnetoplasmons in GaAs/AlGaAs heterostructures" Phys. Rev. B 50, R1583 (1994).

[267] A.C. Churchill, G.H. Kim, **M.Y. Simmons**, D.A. Ritchie, and G.A.C. Jones, "Electron focusing in 2-dimensional electron gases grown on (311)B substrates" Phys. Rev. B 50, R17636 (1994).

[268] Zailer, J.E.F. Frost, C.J.B. Ford, M. Pepper, **M.Y. Simmons**, D.A. Ritchie, J.T. Nicholls and G.A.C. Jones "Phase coherence, interference, and conductance quantisation in a confined two dimensional hole gas" Phys. Rev. B 49, R5101 (1994).

[269] A.C. Churchill, G.H. Kim, A. Kurobe, **M.Y. Simmons**, M. Pepper, D.A. Ritchie, and G.A.C. Jones, "Anisotropic magneto-transport in 2-dimensional electron gases on (311)B GaAs substrates" J. Phys. C 6, 6131 (1994).

[270] **M.Y. Simmons**, D.A. Ritchie, I. Zailer, A.C. Churchill, and G.A.C. Jones, "Optimisation of high mobility two dimensional hole gases" J. Vac. Sci. Technol. B 12, 1296 (1994).

1993

[271] J.E.F. Frost, **M.Y. Simmons,** M. Pepper, A.C. Churchill, D.A. Ritchie, and G.A.C. Jones, "Temperature limits for ballistic quantisation in a GaAs/AlGaAs one-dimensional constriction" J. Phys. C 5, L559 (1993).

1992

[272] **M.Y. Simmons**, H.M. Al-Allak, A.W. Brinkman and K. Durose, "Electrical and optical characterisation of epitaxial ZnTe/CdTe/CdS and ZnTe/CdTe/GaAs p-i-n solar cells", J. Crystal Growth 117, 959 (1992).

[273] A.W. Brinkman, H.M. Al-Allak, G.R. Awan, P.D. Brown, K. Durose, C. Ercelebi, **M.Y. Simmons** and J. Woods, "Epitaxial CdTe-based solar cells", International Journal of Solar Energy 12, 233 (1992).

1991

[274] **M.Y. Simmons**, P.D. Brown, and K. Durose, "MOVPE growth and characterisation of CdTe on CdS single crystal substrates", J. Crystal Growth 107, 664 (1991).

[275] K. Durose, P.D. Brown, **M.Y. Simmons**, H.M. Al-Allak and A.W. Brinkman, "Microstructural and electrical properties of epitaxial ZnTe/CdTe/CdS p-i-n solar cells and related materials", Inst. Physics Conf. Series 117, 533 (1991).

[276] P.D. Brown, H. Kelly, P.A. Clifton, J.T. Mullins, **M.Y. Simmons**, K. Durose, A.W. Brinkman, T.D. Golding and J. Dinan, "TEM studies of Cd-Zn-Te based superlattices and epitaxial layers", Long wavelength semiconductor devices, materials and processes, 77, 427 (1991).

Patents

[277] "The Single Molecule Array on Silicon Substrate for Quantum Computer", Patent Number WO 02/18266 A1, 24 August 2001.
J.L. O'Brien, S.R. Schofield, **M.Y. Simmons**, R.G. Clark and A.S. Dzurak.

[278] "Substituted Donor Atoms in Silicon Crystal for Quantum Computer", Patent Number WO 03/018465 A1, 20 August 2002.
S.R. Schofield, N.J. Curson, **M.Y. Simmons**, L. Oberbeck, R.G. Clark and A.S. Dzurak.

[279] "Nanoscale Products", Patent Number PRO/114370, August 2003.
F.J. Ruess, L.Oberbeck, **M.Y. Simmons**, K.E.J. Goh and T.Hallam.

[280] "Atomic-scale devices", Patent PRO/136760, February 2008.
M. Fuchsle, A. Fuhrer, B. Weber, T.C.G. Reusch, W. Pok, F.J. Ruess and **M.Y. Simmons**.