Research publications (1985-2022)

1. "Angular Dependence of Magnetoresistance Fluctuations in Submicron $n^+\text{GaAs}$ Wires"
*Proceedings of The 18th International Conference on the Physics of Semiconductors*, Stockholm, 1986
Published: World Scientific Press 1591 (1986) (REFEREED)

2. "Universal Conductance Fluctuations in the Magnetoresistance of Submicron $n^+\text{GaAs}$ Wires"
Published: *Superlattices and Microstructures* 2 381 (1986) (REFEREED)

3. "Aperiodic Quantum Magnetoresistance Oscillations in Submicron $n^+\text{GaAs}$ Wires"
*Proceedings of The Application of High Magnetic Fields in Semiconductor Physics, Wurzburg, West Germany*, 1986
Published: Springer, Solid State Sciences 71 328 (1987) (REFEREED)

4. "Fourier Analysis of Universal Conductance Fluctuations in the Magnetoresistance of Submicron-size $n^+\text{GaAs}$ Wires"
*Proceedings of The International Symposium on GaAs and Related Compounds, Heraklion, Greece*, 1987
Published: The Institute of Physics Conference Series 91 573 (1988) (REFEREED)

5. "Universal Conductance Fluctuations in the Magnetoresistance of Submicron-size $n^+\text{GaAs}$ Wires and Laterally Confined $n^+\text{GaAs}/(\text{AlGa})\text{As}$ Heterostructures"
Proceedings of the "7th International Conference on Electronic Properties of Two Dimensional Systems", Santa Fe, USA, 1987
Published: *Surface Science* 196 52 (1988) (REFEREED)

6. "Electron Beam Lithography and Dry Etching Techniques for the Fabrication of Quantum Wires in GaAs and (AlGa)As Epilayer Systems"
*Proceedings of The International Conference on the Physics and Technology of Submicron Structures*, Mauterndorf, Austria, 1988

7. "Electron Heating in a Submicron-size $n^+\text{GaAs}$ Wire"
Proceedings of "The 3rd International Conference on Superlattices, Microstructures and Microdevices", Trieste, Italy, 1988
Published: *Superlattices and Microstructures* 5 575 (1988) (REFEREED)

8. "Aperiodic Conductance Fluctuations as a Probe of Changes in the Microscopic Scattering Configuration in $n^+\text{GaAs}:\text{Si}$ Wires"
*Proceedings of The 19th International Conference on Physics of Semiconductors*, Warsaw, Poland, 1988
Published: The Institute of Physics, Polish Academy of Sciences 1 83 (1988) (NON-REFEREED)
9. "Electrical Properties of Low Dimensional Semiconductors"
   **R.P. Taylor**

10. "Magnetoresistance Effects in Laterally Confined n'GaAs/(AlGa)As Heterostructures"
    Published: *Journal of Physics: Condensed Matter* 1 10413 (1989) (REFEREED)

11. "Conduction in n⁺GaAs Wires"
    Proceedings of "The Physics and Engineering of One and Zero Dimensional Semiconductors", NATO Summer School, Cadiz, Spain 1989
    Published: *NATO ASI Series B: Physics* 214 51 (1990) (REFEREED)

12. "Electronic Properties of Laterally Confined n‘GaAs/(AlGa)As Heterostructures"
    Published: *Surface Science* 228 269 (1990) (REFEREED)

13. "Magnetoresistance Oscillations in a 2DEG Subject to a One Dimensional Periodic Potential"
    Published: World Scientific Press 3 2423 (1990) (NON-REFEREED)

14. "Mesoscopic Charge Mapping by Conductance Fluctuations"
    Published: *Physica B* 165 and 166 865 (1990) (REFEREED)

15. "Temperature and Angular Dependence of Magnetoresistance Oscillations in a 2DEG Subjected to a Periodic Potential"
    Published: *Physica B* 165 and 166 867 (1990) (REFEREED)

16. "Temperature Dependence of Magnetoresistance Oscillations in a 2DEG Subjected to a Periodic Potential"
    Published: *Physical Review B* 42 9689 (1990) (REFEREED)

17. "Collimation Effects in Quantum Point Contacts"
    Published: *Physica B* 175 243 (1991) (REFEREED)

18. "Experimental Investigation of Quantum Point Contacts Separated by Open and Enclosed Regions"
Proceedings of "The International Symposium on Nanostructures and Mesoscopic Systems", Santa Fe, USA, 1991
Published: Superlattices and Microstructures 11 219 (1992) (REFEREED)

19. "Classical and Quantum Mechanical Transmission Effects in Submicron-Size Dots"
Published: Surface Science 263 247 (1992) (REFEREED)

20. "Low Frequency Noise in Multiple Quantum Point Contact Systems"
Published: Physical Review B 45 9149 (1992) (REFEREED)

21. "Non-linear Behaviour in the Magneto-transport through Continuous-gate and Split-gate Nanostructures"
Published: Canadian Journal of Physics 70 1001 (1992) (REFEREED)

22. "Quantum Interference Effects as a Characterisation Tool to Probe the Sidewalls of Submicron-size n^+GaAs Channels"
Published: Canadian Journal of Physics 70 1148 (1992) (REFEREED)

23. "Discrete Electron Effects in Lateral Quantum Islands"
Published: Canadian Journal of Physics 70 979 (1992) (REFEREED)

24. "The Effect of Coulomb Interactions on the Magnetoresistance Oscillations of Quantum Dots"
C. Dharma-Wardana, R.P. Taylor and A.S. Sachrajda
Published: Solid State Communications 84 631 (1992) (REFEREED)

25. "Aharonov-Bohm Oscillations in the Coulomb Blockade Regime"

26. "Magnetoo-conductance Oscillations in Quantum Dots"
C. Dharma-Wardana, A.S. Sachrajda and R.P. Taylor

27. "Transport Properties in a Quantum Dot in Magnetic Fields"
Published: Proceedings of Alloy Semiconductor Physics and Electronics (Japan) II-9 69 (1993) (REFEREED)

28. "Demonstration of Quantum Dots and Quantum Wires with Removable Impurities"

29. "Spin-controlled Resonances in the Magneto-transport in Quantum Dots"
30. "Fabrication of Nanostructures with Multi-level Architecture"  
Published: *Journal of Vacuum Science and Technology B* **11** 628 (1993) (REFEREED)

31. "Zero and Low Magnetic Field Characterisation of AlGaAs/GaAs Lateral Dots"  

32. "The Fabrication of Nanostructures with Addressable Submicron Schottky Gate and Ohmic Contacts"  
Published: Proceedings of "The International Semiconductor Device Research Symposium", Charlottesville, USA, 1993 (REFEREED)

33. "Investigation of Ohmic Contacts to AlGaAs/GaAs Heterojunctions"  

34. "Gate-induced Periodicities in High Quality Electron Systems in the Extreme Quantum Limit"  

35. "Artificial Impurities in Quantum Wires: From Classical to Quantum Behaviour"  

36. "Aharonov-Bohm Oscillations from Inter-edge State Scattering in Quantum Dots"  
C. Barnes, **R.P. Taylor**, A.S. Sachrajda and T. Sugano  

37. "Density of Electrons in Lateral Quantum Dots by Semiclassical Analysis"  
**R.P. Taylor**, A.S. Sachrajda, P.J. Kelly and D. Freedman  
Published: *Solid State Communications* **87** 579 (1994) (REFEREED)

38. "A Patterned Gate Architecture to Study High Quality AlGaAs/GaAs Heterostructures in the Extreme Quantum Limit"  
Published: *Semiconductor Science and Technology* **9** 1 (1994) (REFEREED)

39. "Australian National Pulsed Magnet Laboratory for Condensed Matter Physics Research"  
Published: *Physica B* **201** 565 (1994) (REFEREED)

40. "The Extreme Quantum Regime of 2D Electron and Hole Systems"
Published: Physica B 201 301 (1994) (REFEREED)

41. "Electron-Electron Interactions and the Magnetococonductance of Submicron Quantum Dots"
Proceedings of "The 10th International Conference on Electronic Properties of Two Dimensional Systems", Newport, USA, 1993
Published: Surface Science 305 527 (1994) (REFEREED)

42. "Anti-Collimation of Ballistic Electrons by a Potential Barrier"
P.T. Coleridge, R.P. Taylor, A.S. Sachrajda and J.A. Adams
Proceedings of "The 10th International Conference on Electronic Properties of Two Dimensional Systems", Newport, USA, 1993
Published: Surface Science 305 448 (1994) (REFEREED)

43. "Fabrication and Characterisation of Multi-level Lateral Nano-devices"
R.P. Taylor, Y. Feng, A.S. Sachrajda, J.A. Adams and M. Davies
Proceedings of "The 10th International Conference on Electronic Properties of Two Dimensional Systems", Newport, USA, 1993
Published: Surface Science 305 648 (1994) (REFEREED)

44. "Artificial Impurities in Quantum Wires: From Classical to Quantum Behaviour"
Published: Physical Review Letters 72 2069 (1994) (REFEREED)

45. "Magneto-Coulomb Oscillations"
Published: Physical Review B Rapid Communications 49 11488 (1994) (REFEREED)

46. "Magnetoresistance of a Nanoscale Antidot"
Published: Physical Review B 50 10856 (1994) (REFEREED)

47. "The Role of Surface Gate Technology for AlGaAs/GaAs Nanostructures"
R.P. Taylor
Published: Journal of Nanotechnology 5 183 (1994) (REFEREED)

48. "Physical and Electrical Characterisation of Ohmic Contacts to AlGaAs/GaAs Heterostructures"
Published: Journal of Applied Physics 76 7966 (1994) (REFEREED)

49. "Demonstration of Intricate Gate, Ohmic and Interconnect Metallisations for Nanostructure Construction"
Proceedings of "The 7th International Conference on Superlattices, Microstructures and Microdevices", Banff, Canada, 1994
Published: Superlattices and Microstructures 15 85 (1994) (REFEREED)

50. "A Tunable Ballistic Electron Cavity Exhibiting Geometry Induced Weak Localisation"
Proceedings of "The 7th International Conference on Superlattices, Microstructures
and Microdevices", Banff, Canada, 1994
Published: Superlattices and Microstructures 16 317 (1994) (REFEREED)

51. "Classically, the Strangest of Things, When Quantum Dots are Quantum Rings"
A. Delage, Y. Feng, P.J. Kelly, A.S. Sachrajda and R.P. Taylor
Proceedings of The 5th conference on Quantum Well and Superlattice Physics, LASE'93,
Los Angeles, USA, 1994
Published by the International Society for Optical Engineering 2139 353 (1995) (REFEREED)

52. "Artificial Impurities in Quantum Wires and Dots"
A.S. Sachrajda, Y. Feng, G. Kirczenow, R.P. Taylor, B.L. Johnson, P.J. Kelly, P. Zawadski
and P.T. Coleridge
Proceedings of the NATO Advanced Study Institute, Lucca, Italy, 1994

53. "Artificial Impurities in Quantum Wires"
A.S. Sachrajda, Y. Feng, R.P. Taylor, G. Kirczenow, B.L. Johnson, P. Zawadski
and P.T. Coleridge
Invited contribution, Proceedings of The 22nd International Conference on the
Physics of Semiconductors, Vancouver, Canada, 1994
Published: World Scientific (Ed. by D.Lockward) 2 1815 (1995) (INVITED & REFEREED)

54. "The Quantum Hall Effect and Inter-edge State Tunnelling Within a Barrier"
B.L. Johnson, A.S. Sachrajda, G. Kirczenow, Y. Feng, R.P. Taylor, L. Henning, J. Wang,
P. Zawadski and P.T. Coleridge
Published: Physical Review B 51 7650 (1995) (REFEREED)

55. "Classical and Weak Localisation Processes in a Tunable Ballistic Electron Cavity"

56. "Fabrication of Nanostructures with Submicron Schottky and Ohmic Contacts"
Published: Journal of Vacuum Science and Technology B 13 2875 (1995) (REFEREED)

57. "Lead-induced Transition to Chaos in Ballistic Mesoscopic Billiards"
and T. Sugano

58. "Transition From Chaotic to Regular Quantum Scattering in Mesoscopic Billiards
With Nominally Regular Geometry"
Y. Aoyagi, T. Sugano and Y. Ochiai
Hawaii, USA 1995
Published: Physica B 227 148 (1996) (REFEREED)

59. "Investigations of Electron Interference and Quantum Chaos in Ballistic Quantum Dots
with Square Geometry"
and T. Sugano
Proceedings of "The 7th Brazilian Workshop on Semiconductor Physics",
Rio de Janeiro, Brazil, 1995
Published: Brazilian Journal of Physics 26 1 (1996) (REFEREED)

60. "Geometry Induced Quantum Interference: a Continuous Evolution From Square
to Sinai Billiard


Proceedings of "NanoMes 96" (3rd International Symposium on Nanostructures and Mesoscopic Systems), Santa Fe, USA, 1996

Published: *Superlattices and Microstructures* **20** 297 (1996) (REFEREED)

61. "The Topological Transition from a Corbino Disc to Hall Bar Geometry"

A.S. Sachrajda, Y. Feng, **R.P. Taylor**, R. Newbury and P.T. Coleridge

Proceedings of "NanoMes 96" (3rd International Symposium on Nanostructures and Mesoscopic Systems), Santa Fe, USA, 1996

Published: *Superlattices and Microstructures* **20** 651 (1996) (REFEREED)

62. "The Role of Lead Openings in Regular Mesoscopic Billiards"


Invited presentation in the proceedings of "NanoMes 96" (3rd International Symposium on Nanostructures and Mesoscopic Systems), Santa Fe, USA, 1996

Published: *Superlattices and Microstructures* **20** 287 (1996) (REFEREED)

63. "The Transition from a Square to Sinai Billiard"


N. Zhu and H. Guo

Proceedings of The 23rd International Conference on Semiconductor Physics, Berlin, Germany, 1996


64. "The Use of Wide Ballistic Cavities to Investigate Local Weak Localisation Processes Induced by Geometric Scattering"


Published: *Semiconductor Science and Technology* **11** 1 (1996) (REFEREED)

65. "The Influence of Injection Properties on the Electron Scattering Dynamics of Ballistic Cavities"

**R.P. Taylor**, J.P. Bird and R. Newbury

Published: *The Journal of the Physical Society of Japan* **65** 2730 (1996) (REFEREED)

66. "Can Ohmic Spikes Define Quantum Systems?"


ISSN 1037-1214, page TM08, (1997) (UNREFEREED, EXTENDED ABSTRACT)

67. "Fractal Behaviour in the Magnetoresistance in a Sinai Billiard"

R. Newbury, **R.P. Taylor**, A.S. Sachrajda, Y. Feng, P.T. Coleridge, C. Dettmann and T.M. Fromhold


ISSN 1037-1214, page WM04, (1997) (UNREFEREED, EXTENDED ABSTRACT)

68. "Electron Behaviour In AlGaAs/GaAs Square Quantum Dots"

A.P. MicoliCh, **R.P. Taylor**, J.P. Bird and R. Newbury


ISSN 1037-1214, page TP20, (1997) (UNREFEREED, EXTENDED ABSTRACT)
69. "Aharonov-Bohm Oscillations in Quantum Dots: Precise Departures from $h/e$ Periodicity"
   Proceedings of "The 8th International Conference on Superlattices, Microstructures
   and Microdevices", Liege, Belgium, 1996
   Published: Superlattices and Microstructures 22 57 (1997) (REFEREED)

70. "Can Ohmic Spikes Define Quantum Systems?"
    R.P. Taylor, R. Newbury, A.S. Sachrajda, Y. Feng, P.T. Coleridge, J.P. McCaffrey,
    M. Davies and J.P. Bird
    Proceedings of "QDS'96" (1996 International Symposium on the Formation, Physics
    and Device Application of Quantum Dot Structures), Sapporo, Japan, 1996
    Published: Journal of Applied Physics 36 3964 (1997) (REFEREED)

71. "Fractal Behaviour in the Magnetoresistance of Chaotic Billiards"
    R. Newbury, R.P. Taylor, A.S. Sachrajda, Y. Feng, P.T. Coleridge, C. Dettmann
    and T.M. Fromhold
    Proceedings of "QDS'96" (1996 International Symposium on the Formation, Physics and
    Device Application of Quantum Dot Structures), Sapporo, Japan, 1996

72. "The Role of Electron Phase Coherence in Quantum Transport Through Open Ballistic Cavities"
    R. Wirtz, Y. Ochiai, K. Ishibashi, Y. Aoyagi and T. Sugano
    Proceedings of "QDS'96" (1996 International Symposium on the Formation, Physics and
    Device Application of Quantum Dot Structures), Sapporo, Japan, 1996

73. "Self-similar Magnetoresistance in a Semiconductor Sinai Billiard"
    R.P. Taylor, R. Newbury, A.S. Sachrajda, Y. Feng, P.T. Coleridge, C. Dettmann, N. Zhu,
    H. Guo, A. Delage, P.J. Kelly and Z. Wasilewski

74. "Quantum Transport in Open Mesoscopic Cavities"
    J.P. Bird, R. Akis, D.K. Ferry, D.P. Piven, K. Connolly, R.P. Taylor, R. Newbury,
    D.M. Olatona, A.P. Micolich, R. Wirtz, Y. Ochiai, Y. Okubo, K. Ishibashi, Y. Aoyagi
    and T. Sugano
    Invited contribution to Chaos, Solitons and Fractals, Pergamon/ Elsevier Press,
    (Ed. N. Nakamura) 8 1299 (1997) (INVITED & REFEREED)

75. "Ohmic Contact Spike Arrays for Nanostructure Device Fabrication: Spike
    Distribution and Geometry Scattering of the Electron Wave Current"
    R. Newbury, R.P. Taylor, A.S. Sachrajda, P.T. Coleridge, Y. Feng,
    M. Davies and J.P. McCaffrey
    Proceedings of the Conference on Optoelectronic and Microelectronic Materials
    and Devices (COMMAD'96), Canberra, Australia, 1996

76. "Tunable Semiconductor Sinai Billiards"
    R.P. Taylor, R. Newbury, A.S. Sachrajda, Y. Feng and P.T. Coleridge
    Proceedings of the Conference on Optoelectronic and Microelectronic Materials
    and Devices (COMMAD'96), Canberra, Australia, 1996

77. "Correlation Analysis of Self-similarity in Semiconductor Billiards"
    Published: Physical Review B Rapid Communications 56 R12733 (1997) (REFEREED)

78. "Fractal Transistors"
Published: Semiconductor Science and Technology 12 1459 (1997) (REFEREED)

79. "Phase Breaking as a probe of the Intrinsic Level Spectrum of Open Quantum Dots"
   R. Newbury, P. Omling, Y. Aoyagi and T. Sugano
   Proceedings of "The 10th International Conference on Hot Carriers in Semiconductors",
   Berlin, Germany, 1997
   Published: Physica Status Solidi B 204 314 (1997) (REFEREED)

80. "Chaos in Modern Art?"
    R.P. Taylor
    Published: Physics World, 76 (November 1997) (COMMISSIONED)

81. "Correlation Analysis of Statistical and Exact Self-similarity in Billiards"
    Proceedings of "The New Zealand and Australian Institutes of Physics Annual Condensed
    Matter Physics Meeting", (Wagga‘98), Wagga, Australia, 1998
    ISSN 1037 1214, page TM11 (1998) (UNREFEREED, EXTENDED ABSTRACT)

82. "Fractional Brownian Statistics of Magneto-conductance Fluctuations"
    A.P. Micolich, R.P. Taylor, R. Newbury and J.P. Bird
    Proceedings of "The New Zealand and Australian Institutes of Physics Annual Condensed
    Matter Physics Meeting", (Wagga‘98), Wagga, Australia, 1998
    ISSN 1037 1214, page TP49 (1998) (UNREFEREED, EXTENDED ABSTRACT)

83. "Geometry-induced Fractal Behaviour in a Semiconductor Billiard"
    A.P. Micolich, R.P. Taylor, R. Newbury, J.P. Bird, R. Wirtz, C.P. Dettmann,
    Y. Aoyagi and T. Sugano
    Published: Journal of Physics: Condensed Matter 10 1339 (1998) (REFEREED)

84. "Fractals and Self-similarity in Mesoscopic Semiconductor Billiards"
    Published: Australian and New Zealand Physicist 35 151 (1998) (INVITED)

85. "Experimental and Theoretical Investigations of Clusters in the Magnetofingerprints of a
    Sinai Billiard"
    Proceedings of "The 2nd International Conference on Low Dimensional Structures and
    Devices", Lisbon, Portugal, 1997
    Published: Materials Science and Engineering B 51 212 (1998) (REFEREED)

86. "Self-similar Conductance Fluctuations in a Sinai Billiard with a Mixed Chaotic Phase
    Space: Theory and Experiment"
    Proceedings of "The 12th International Conference on the Electronic Properties
    of Two Dimensional Systems", Tokyo, Japan, 1997
    Published: Physica B 249-251 334 (1998) (REFEREED)

87. "Geometry-induced Fractal Behaviour: Fractional Brownian Motion in a Ballistic
    Mesoscopic Billiard"
    Proceedings of "The 12th International Conference on the Electronic Properties
    of Two Dimensional Systems", Tokyo, Japan, 1997
    Published: Physica B 249-251 343 (1998) (REFEREED)

88. "Wavefunction Scarring in Magneto-transport of Quantum Dots"
    Y. Ochiai, Y. Okuba, N. Sasaki, J.P. Bird, K. Ishibashi, Y. Aoyagi, T. Sugano, A.P. Micolich,

-9-
89. "Experimental and Theoretical Investigations of Electron Dynamics in a Semiconductor Sinai Billiard"
A.P. Micolich, **R.P. Taylor**, R. Newbury, C. Dettmann and T.M. Fromhold

90. "Scale Factor Mapping of Statistical and Exact Self-similarity in Billiards"
Proceedings of "The 2nd International Workshop on Surfaces and Interfaces of Mesoscopic Devices, Hawaii, USA, 1997
Published: *Semiconductor Science and Technology* **13** 1 (1998) (REFEREED)

91. "Exact and Statistical Self-similarity in Magneto-conductance Fluctuations: a Unified Picture"

92. "An Investigation of Current Injection Properties of Ohmic Spikes in Nanostructures"
Proceedings of "The 8th International Conference on Superlattices, Microstructures and Microdevices", Liege, Belgium, 1996
Published: *Superlattices and Microstructures* **24** (5) 337 (1998) (REFEREED)

93. "Mesoscopic Electron Transport"
**R.P. Taylor**,

94. "Splashdown"
**R.P. Taylor**
Published: *New Scientist* **2144** 30 (1998) (INVITED)

95. "Fractal Conductance Fluctuations in Mesoscopic Billiards: an Observation Over Three Orders of Magnitude"
*American Physical Society Bulletin*, Centennial Meeting program,
DP01.185 (1999) (UNREFEREED, EXTENDED ABSTRACT)

96. "Experimental Quantum Ratchets Based on Nanostructures"
H. Linke, P.E. Lindelof, A. Lofgren, R. Newbury, P. Omling, W. Sheng, A. Svensson, **R.P. Taylor** and Hongqi Xu
*American Physical Society Bulletin*, Centennial Meeting program,
DP01.185 (1999) (UNREFEREED, EXTENDED ABSTRACT)

97. "Fractal Magneto-conductance in Mesoscopic Billiards: Temperature and Size Dependence"
Proceedings of "The New Zealand and Australian Institutes of Physics Annual Condensed Matter Physics Meeting", (Wagga’99), Wagga, Australia, 1999
ISSN 1037-1214, Page TM8, (1999) (UNREFEREED, EXTENDED ABSTRACT)

98. "Physical Realisation of Weierstrass Scaling in Soft-wall Antidot Billiards"
Proceedings of "The New Zealand and Australian Institutes of Physics Annual Condensed Matter Physics Meeting", (Wagga'99), Wagga, Australia, 1999
ISSN 1037-1214, Page WP14, (1999) (UNREFEREED, EXTENDED ABSTRACT)

99. "Examination of the 0.7(2e2/h) Feature in the Quantised Conductance of a Quantum Point Contact: Varying the Effective g-Factor with Hydrostatic Pressure"
Proceedings of "The New Zealand and Australian Institutes of Physics Annual Condensed Matter Physics Meeting", (Wagga'99), Wagga, Australia, 1999
ISSN 1037-1214, Page WP10, (1999) (UNREFEREED, EXTENDED ABSTRACT)

100. "Unification of Exact and Statistical Self-similarity in Semiconductor Billiards"
Y. Aoyagi and T. Sugano
Proceedings of The 24th International Conference on the Physics of Semiconductors, Jerusalem, Israel, 1998
Published: World Scientific (available on CDROM, Chapter 7, A14 (1999)) (UNREFEREED)

101. "Physical Realisation of Weierstrass Scaling using a Quantum Interferometer"
Proceedings of "The 11th International Conference on Superlattices, Microstructures and Microdevices", Hurgarda, Egypt, 1998
Published: *Superlattices and Microstructures* 25 207 (1999) (REFEREED)

102. "Temperature Dependence of the Fractal Dimension of Magneto-conductance Fluctuations in a Mesoscopic Semiconductor Billiard"
Proceedings of "The 11th International Conference on Superlattices, Microstructures and Microdevices", Hurgarda, Egypt, 1998
Published: *Superlattices and Microstructures* 25 157 (1999) (REFEREED)

103. "Scale Factor Mapping of Self-similarity in Semiconductor Billiards"

104. "Temperature Dependent Fractal Electron Transmission in Mesoscopic Billiards"

105. "Physical Realisation of Weierstrass Scaling in a Soft-wall Antidot Billiard"

106. "Observation of Fractal Conductance Fluctuations over Three Orders of Magnitude"
Published: *Australian Journal of Physics*, 52 887 (1999) (REFEREED)

107. "Chaotic Ray Dynamics and Fast Optical Switching in Micro-cavities with a Graded Refractive Index"
108. "Voltage and Temperature Limits for the Operation of a Quantum Dot Ratchet"
Published: Physica B 272 484 (1999) (REFEREED)

109. "Comment on Fractal Conductance Fluctuations in a Soft Wall Stadium and a Sinai Billiard"
Published: Physical Review Letters 83 (5) 1074 (1999) (REFEREED)

110. "Experimental Tunnelling Ratchet"
Published: Science 286 2314 (1999) (REFEREED)

111. "Greater Neuronal Cell Density Occurs in Females in the Language-associated Planum Temporale"
Published: Proceedings of the Australian Neuroscience Society 10 53
(UNREFEREED, EXTENDED ABSTRACT)

112. "Fractal Analysis of Pollock's Drip Paintings"
R.P. Taylor, A.P. Micolich and D. Jonas
Published: Nature 399 422 (1999) (REFEREED)

113. "Fractal Expressionism: A Scientific Analysis of Jackson Pollock's Drip Paintings"
R.P. Taylor, A.P. Micolich and D. Jonas
Published: Pass Magazine (University of Cambridge, http://www.pass.maths.org.uk

R.P. Taylor, A.P. Micolich and D. Jonas
Published: The Physicist 36 (3) 93 (1999) (cover picture and feature article) (INVITED)

115. "Fractal Expressionism: A Scientific Analysis of Jackson Pollock's Drip Paintings"
R.P. Taylor, A.P. Micolich and D. Jonas
Published: Physics World, 25 (October 1999) (cover picture and feature article) (INVITED)

116. "Tunnelling Ratchets"
T.E. Humphrey, H. Linke, A. Lofgren, R. Newbury, P. Omling, A. Sushkov and R.P. Taylor
American Physical Society Bulletin, 45 861, 2000 (UNREFEREED, EXTENDED ABSTRACT)

117. "Tunnelling Ratchets"
T. E. Humphrey, H. Linke, A. Löfgren, R. Newbury, P. Omling, A. Sushkov, and R.P. Taylor
(UNREFEREED, EXTENDED ABSTRACT)

118. "A Physical Explanation for the Origin of Self-similar Magnetoconductance Fluctuations in Semiconductor Billiards"
119. "Temperature and Size Dependence of Fractal MCF in Semiconductor Billiards"
Published: Microelectronics Engineering 51-52 241 (2000) (REFEREED)

120. "An Investigation of Weierstrass Self-similarity in a Semiconductor Billiard"
Published: Europhysics Letters 49 417 (2000) (REFEREED)

121. "Using Science to Investigate Jackson Pollock's Drip Paintings"
R.P. Taylor, A.P. Micolich and D. Jonas
Published: Invited contribution to "Art and the Brain", Journal of Consciousness Studies 7 (8-9) 137 (2000) (INVITED & REFEREED)

122. " Jackson Pollock: Nature, Chaos and Fractals"
R.P. Taylor
Published: Thesis, Art Theory, University of New South Wales (1999) (REFEREED)

123. "Stacked Billiards: Examining the Effect of Soft-wall Potential Profile on Fractal Conductance Fluctuations"
American Physical Society Bulletin, 2001 (UNREFEREED, EXTENDED ABSTRACT)

124. "The Evolution of Fractal Patterns During a Classical-Quantum Transition"
American Physical Society Bulletin, 2001 (UNREFEREED, EXTENDED ABSTRACT)

125. "Semiconductor Billiards: a Controlled Environment to Study Fractals"
Published: Physica Scripta T90 41 (2001) (REFEREED)

126. "Electron Tunnelling Ratchets"
Published: Springer Proceedings in Physics Physics of Semiconductors, 87 1009-1012 (2001) (INVITED & REFEREED)

127. "Chaos in Quantum Ratchets"
H. Linke, T.E. Humphrey, R.P. Taylor and R. Newbury
Published: Physica Scripta T90 54 (2001) (REFEREED)

128. "Electromagnetic Wave Chaos in Gradient Refractive Index Optical Cavities"
Published: Physical Review Letters 86 5466 (2001) (REFEREED)

129. "The Evolution of Fractal Patterns during a Classical-Quantum Transition"
Published: Physical Review Letters 87 036802 (2001) (REFEREED)
Published: Physical Review E 64 047701-1-4 (2001) (REFEREED)

131. “Effects of Geometric Wave Chaos on the Electromagnetic Eigenmodes of Gradient-index Optical Cavity”
Published: Physical Review E 64 026203 (2001) (REFEREED)

132. “Semiconductor Billiards: a Controlled Environment to Study Fractals”
Invited contribution to the Nobel Foundation book Y2K Quantum Chaos,
Published: World Scientific (Singapore) (ISBN 981 02 4711-7) and The Royal Swedish Academy of Sciences, 41 (2001) (INVITED)

133. “Architect Reaches for the Clouds”
R.P. Taylor
Published: Nature 410 18 (2001) (COMMISIONED)

134. “From Science To Art and Back”
R.P. Taylor
Published: Science on line: http://nextwave.sciencemag.org/cgi/content/full/2001/04/25/1 (2001) (INVITED CAREER ESSAY)

135. “Fractals: A Resonance Between Art and Nature”

136. “The Dependence of Fractal Conductance Fluctuations on Soft-wall Profile in a Double-2DEG Billiard”
Published: Physica E 12 841 (2002) (REFEREED)

Proceedings of “The 10th International Conference on Modulated Semiconductor Structures”, Linz, Austria, July 2001

138. “The Dependence of Fractal Conductance Fluctuations on Semiconductor Billiard Parameters”
Proceedings of “The 12th International Conference on Nonequilibrium Carrier Dynamics in Semiconductors (HCIS-12)”
Published: Physica B 314 477 (2002) (REFEREED)

139. “Quantum Ratchets Act as Quantum Heat Pumps”
Proceedings of the 12th International Conference on Nonequilibrium Carrier Dynamics in Semiconductors (HCIS-12).
Published: Physica B 314 464 (2002) (REFEREED)
140. "Quantum Ratchets and Quantum Heat Pumps"

141. “The Dependence of Fractal Conductance Fluctuations on Soft-wall Profile in a Double-layer Billiard”

142. "Reversible Quantum Brownian Heat Engines for Electrons"
T.E. Humphrey, R. Newbury, **R.P Taylor** and H. Linke

143. “Dependence of Fractal conductance Fluctuations on Semiconductor Billiard Parameters”
Published: “15th Biennial Congress”, Australian Institute of Physics, 367 (2002) (REFEREED)

144. "Pollock's Fractals Unite Art and Science"
**R.P. Taylor**
*American Scientist*, June/July Issue 2002 (UNREFEREED, EXTENDED ABSTRACT)

145. "The Construction of Pollock’s Fractal Drip Paintings"
**R.P.Taylor**, A.P.Micolich and D.Jonas
Published: *Leonardo* **35** 203-7 (2002) (REFEREED)

146. “Spotlight on a Visual Language”
**R.P. Taylor**

147. “Fractal Design Strategies For Enhancement of Knowledge Work Environments”
J.A. Wise and **R.P. Taylor**

148. "Order in Pollock's Chaos"
**R.P. Taylor**
Published: *Scientific American*, **287** 116-121 December 2002 (COMMISSIONED)

149. “Ordine nel caos di Pollock”
**R.P. Taylor**
Published: *Le Scienze*, **413** 88 (2002) (INVITED)

150. “Fractal Conductance Fluctuations in “Hard-wall” InGaAs/InP Billiards”
C. Marlow, **R.P. Taylor**, H. Linke and T. Martin
Published: Bulletin of the American Physical Society **48** 101 (2003) (UNREFEREED, EXTENDED ABSTRACT)

151. “Fractal conductance Fluctuations in single and double-layer billiards”
Proceedings of “The 26th International Conference on the Physics of Semiconductors”,
152. “A Review of Fractal Conductance Fluctuations in Ballistic Semiconductor Devices”

153. “Generic Fractal Behaviour of Ballistic Devices”

154. “Geometry Independence of Fractal Ballistic Processes”
Published: *Physica E* 19 225 (2003) (REFEREED)

155. “The Influence of Confining Wall Profile on Quantum Interference Effects in Etched GaInAs/InP Billiards”
Published: *Superlattices and Microstructures*, 34 179 (2003) (REFEREED)

156. “Surviving Conduction Symmetries in Non-linear Response”
C.A. Marlow, A. Lofgren, I. Shorubalko, R.P. Taylor, L. Samuelson and H. Linke,
Published: *Superlattices and Microstructures* 34 173 (2003) (REFEREED)

157. "Fractal Expressionism - Where Art Meets Science"
R.P. Taylor

158. "Pollock's Fractals "
R.P. Taylor
Published: Letter, *Scientific American*, 6th April 2003 (INVITED)

159. "Second Nature: Fractured Magic from Pollock to Gehry"
R.P. Taylor

160. "Second Nature: Fractured Magic from Pollock to Gehry"
R.P. Taylor

161. “Universal Aesthetic of Fractals”
B. Spehar, C.W.G. Clifford, B.R. Newell and R.P. Taylor

162. “The Visual Complexity of Pollock's Dripped Fractals”

163. “Three Key Questions on Fractal Conductance Fluctuations: Dynamics, Quantization and Coherence”

164. “Three Key Questions on Fractal Conductance Fluctuations: Dynamics, Quantization and Coherence”

165. “Symmetry of Two Terminal Nonlinear Electric Conduction”

166. “Fractal Dimension of Landscape Silhouette as a Predictor of Landscape Preference”

167. "Pollock, Mondrian and Nature: Recent Scientific Investigations"
**R.P. Taylor**

168. "Splatter Matters: How to Tell a Real Pollock from a Fake"
**R.P. Taylor**

169. “Evidence for mechanical copying and enlarging in Jan van Eyck’s Portrait of Niccolo Albergati”,
**R.P. Taylor**, Side-bar to D. Stork’s article, “Optics and Realism in Renaissance Art”, *Scientific American*, December 2004

170. “Feel the Fascination of Fractals”

171. “Levy Flights”
**R.P. Taylor**

172. “Fractal Study of Coupling Transitions in Ballistic Quantum Dot Arrays”

173. “Preserved Symmetries of Non-linear Electronic Conduction”

174. “Perceptual and Physiological Response to the Visual Complexity of Fractals”
Published: *The Journal of Nonlinear Dynamics, Psychology, and Life Sciences*, 9 89 (2005)
175. “Fractal Aesthetics”
   **R.P. Taylor**

176. “Fractals: A Resonance Between Art and Nature”
   **R.P. Taylor, B. Newell, B. Spehar and C. Clifford**

177. “Alla Ricerca Di Arte Frattale Che Riduce Lo Stress: Di Jackson Pollock A Frank Gehry”
   **R.P. Taylor**

178. “Fractal Aesthetics II”
   **R.P. Taylor**

179. “Fractal Aesthetics III”
   **R.P. Taylor**

180. “Fractal Aesthetics IV”
   **R.P. Taylor**

181. “Jackson Pollock’s Fractal Patterns: Authenticating Art with Nature’s Geometry”
   **R.P. Taylor**
   Published: proceedings of International Conference on Art and Mathematics, University of Colorado, Boulder, USA, June 5th-10th, 2005 (INVITED)

   Proceedings of “2nd International Conference on Advanced Materials and Nanotechnology” Queenstown, New Zealand, 6-11th February, 2005.

183. “Fractal patterns and attention restoration - Evaluations of real and artificial landscape silhouettes”
   **C.M. Hagerhall, T. Laike, Thorbjörn, R.P. Taylor, M. Kuller, LU Rikard and T. Martin.**

184. “Series Summation of Fractal Fluctuations in Electron Billiard Arrays”
   Published: *Physica E* 34 600-603 (2006) (REFEREED)

185. “Self-Propelled Film-boiling Liquids”
186. "Experimental Investigation of the Breakdown of the Onsager-Casimir Relations"
C. A. Marlow, R.P. Taylor, M. Fairbanks, I. Shorubalko, and H. Linke,

187. "Experimental Investigation of the Breakdown of the Onsager-Casimir Relations"
C. A. Marlow, R.P. Taylor, M. Fairbanks, I. Shorubalko, and H. Linke,
Published: Virtual Journal of Nanoscale Science and Technology, American Institute

188. "Symmetry of Magnetocconductance Fluctuations of Quantum Dots in the Nonlinear
Response Regime."
A. Lofgren, C. A. Marlow, T.E. Humphrey, I. Shorubalko, R.P. Taylor, P. Omling, R. Newbury,
P.E. Lindelof, and H. Linke,
Published: Physical Review B 73, 235321 (2006) (REFEREED)

189. “A Unified Model of Electron Quantum Interference For Ballistic and Diffusive
Semiconductor Devices”
C.A. Marlow, R.P. Taylor, T.P. Martin, B.C. Scannell, H. Linke, M.S. Fairbanks,
I. Shorubalko, L. Samuelson, T.M. Fromhold, C.V. Brown, B. Hackens, S. Faniel,
C. Gustin, V. Bayot, X. Wallart, S. Bollaert and A. Cappy
Published: Physical Review B 73 195318-1-7 (2006) (REFEREED)

190. “Non-linear Effects on Quantum Interference in Electron Billiards”
C.A. Marlow, R.P. Taylor, M. Fairbanks and H. Linke
Proceedings of “The 14th International Conference on Non-equilibrium Carrier Dynamics
in Semiconductors” Chicago, USA, July 24th-29th, 2005
Published: Springer Proceedings in Physics series, 110, ISBN 978-3-540-36587

191. "The Breakdown of the Onsager-Casimir Relations in Electron Billiards"
C. A. Marlow, M. Fairbanks, R.P. Taylor, I. Shorubalko, and H. Linke,
Published: Proceedings of the 28th International Conference on the Physics of Semiconductors
July 24th-28th, 2006 (UNREFEREED).

192. "The Search for Stress-Reducing Art: Fractal Geometry from Jackson Pollock to Frank Gehry"
R.P. Taylor
Published: Invited chapter to the book Mathematics and Culture V, 239-246,

193. "Reduction of Physiological Stress Using Fractal Art and Architecture"
R.P. Taylor
Published: Leonardo 39, 245 (2006). (INVITED AND REFEREED),

194. “A Concrete Example”
J.P. Boon, J. Casti, C. Djerassi, J. Johnson, A. Lovett, T. Norretranders,
V. Patera, C. Sommerer, R.P. Taylor and S. Thurner

195. “Personal Reflections on Pollock’s Fractal Paintings”
R.P. Taylor
Published: invited essay, special edition of the Journal History, Science and Health,

196. “Reflexoes Pessoais Sobre as Pinturas Fractais de Jackson Pollock”
R.P. Taylor
Published: invited essay, Historia, Ciencias, Saude-Manguinhos
197. “Pollock’s Patterns: Recent Developments”

198. “Revisiting Pollock’s Poured Paintings”
   R.P. Taylor, A.P. Micolich and D. Jonas

199. “Positive Impacts of Fractal Patterns on Human Physiology – Key Experiments”
   R.P. Taylor, Technical document
   Published: Fractals Research (2006), ISBN: 0-9791874-0-0

   R.P. Taylor, book (limited printed edition)

201. “Semantic Evaluations of Silhouettes with Different Fractal Dimensions”
   C.M. Hagerhall, T. Laike, R.P. Taylor, M. Küller, R. Küller and T.P Martin

202. “Authenticating Pollock Paintings with Fractal Geometry”
   M.S. Fairbanks and C.A Marlow
   Published: Pattern Recognition Letters 28 695 (2007) (INVITED AND REFEREED)

203. "Blood Sweat and Electronics"
   R.P. Taylor

204. "Quantum Conductance Fluctuations in Nano-scale Devices”
   Proceedings of “3rd International Conference on Advanced Materials and Nanotechnology”

205. “Non-linear Characteristics in the Magnetococonductance of Electron Billiards”
   M. Fairbanks, C.A. Marlow, R.P. Taylor, and H. Linke
   Proceedings of “3rd International Conference on Advanced Materials and Nanotechnology”

206. “Confinement Properties of a GaInAs/InP Quantum Point Contact”
   Published: Physical Review B 77 155309 (2008) (REFEREED)

207. “Carrier Density in a GaInAs/InP heterostructure”
   Published: Physica E (Electronic properties of low dimensional semiconductors and nanostructures) 40 (5) 1754-1756 (2008) (REFEREED)

208. “Enhanced Zeeman Splitting in GaInAs Quantum Point Contacts”
   and R.P. Taylor

209. “Enhanced Zeeman Splitting in GaInAs Quantum Point Contacts”
   and R.P. Taylor
R.P. Taylor, and J.C. Sprott,

211. “Buckley Trees and their Enhanced Fractal Complexity”
R.P. Taylor

212. “Investigation of EEG Response to Fractal Patterns”
C.M. Hagerhall, T. Laike, R.P. Taylor, M. Küller, R. Küller and T.P Martin
Published: Perception 37 (10) 1488-1494 (2008) (REFEREED).

213. “Artistic, Scientific and Historical Investigations of the Poured Paintings called The Painting”
R.P. Taylor
Technical document
Published: Fractals Research (2008), ISBN: 0-9791874-3-5

214. “Dimensional Interplay Analysis of ‘Poured’ Paintings: Background Information.”
R.P. Taylor
Technical Document
Published: Fractals Research (2008), ISBN: 0-9791874-4-3

RP Taylor, B Spehar, CWG Clifford, BR Newell

216. “Chaotic Scattering in Nano-electronic Systems – From Billiards to Clusters”
Published: International Journal of Nanotechnology, 408 6 (2009) (INVITED and REFEREED)

217. “Electronic Transport in Quasi-1D DNA-Templated Nanoparticle Arrays”
M.S. Fairbanks, G.J. Kearns, B.C. Scannell, A. Loftus, J.E. Hutchision, R.P. Taylor
Published: Proceeding of the APS Meeting (2009)

218. “Comment on “Drip Paintings and Fractal Analysis”

219. “Chaotic Electronic Transport of Nanocluster Wires”
Published: Proceeding of the APS Meeting (2009)

D. Della-Bosca and R.P. Taylor

221. “Emergence of Patterns from Nature’s Chaos, Through Parallels Between Edward Lorenz and Yves Klein”
R.P. Taylor

222. “Reflecting the Impossible”
R.P. Taylor
223. “Fractals in Nano-devices”  
R.P. Taylor,  
Published: The Nano-Experts Series, The One-Line Journal of Nanotechnology  

224. “Investigation of Electron Wave Hybridization in GaInAs/InP Arrays”  

225. “Fractal Electronic Circuits Assembled From Nanoclusters”  
M.S. Fairbanks, D. McCarthy, S.A. Brown, R.P. Taylor  
Proceedings of “4th International Conference on Advanced Materials and Nanotechnology”  

226. “Measuring Hybridization in GaInAs/InP Electron Billiard Arrays”  
Published: Physica E 42 1205-1207 (2010), conference proceedings of EP2DS (REFEREED)  

B.C. Scannell, B. Van Dusen and R.P. Taylor  

228. “Field Orientation Dependence of the Zeeman Spin Splitting in InGaAs Quantum Point Contacts”  

229. “Across The Cultural Divide”  
R.P. Taylor  
Review of the book “The Neural Imagination” by Irving Massey,  


231. “Multifractal and Statistical Comparison of Painting Techniques of Adults and Children”  
M. Fairbanks, J. Mureika and R.P. Taylor  
Published: SPIE Proceedings of Electronic Imaging, special edition on  
“Computer Vision and Image Analysis of Art” Ed. D.G. Stork, J. Coddington  
and A. Bentkowska-Kafel, 7531 7531001-6 (DOI: 10.1117/12.840411) (2010) (REFEREED)  

232. “Simulations of fractal electronic circuits”  
R. Montgomery, M.S. Fairbanks, SA. Brown, R.P. Taylor  
Published: Proceeding of the APS Meeting (2010)  

233. “The Crop Circle Evolves”  
R.P. Taylor  
Published: Nature 465 693 (2010). (COMMISSIONED INVITATION)  

R.P Taylor  
Finalist of the Northwest Perspectives essay contest  

235. “Artistic Forms and Complexity”  
J.P. Boon, J. Casti and R.P. Taylor  
Published: The Journal of Nonlinear Dynamics, Psychology, and Life Sciences  
15, 265-283 (2011) (REFEREED)
236. “Physics – Principles and Applications”
D.C. Giancoli, Edited by R.P. Taylor and S. Macklavzina

237. “Mood Swings”
R.P. Taylor
Published: Science 329 1149 (2010) (INVITED AND COMMISSIONED)

R.P. Taylor
Published: The Journal of Nonlinear Dynamics, Psychology, and Life Sciences 15 129-135 (2011)
(INVITED)

239. “Scaling Analysis of Spatial and Temporal Patterns: From the Human Eye to the Foraging Albatross”
M.S. Fairbanks and R.P. Taylor
Published: Chapter to the book “Non-linear Dynamical Analysis for the Behavioral Sciences Using Real Data”, published by CRC Press, Taylor and Francis Group (Boca Raton)

R.P. Taylor, review article
Published: Physics World 22-27 May 2011 (INVITED AND COMMISSIONED)

241. “Fractal Architecture Across Cultures and Continents”
R.P. Taylor

242. “Benoit Mandelbrot’s Fractal World”
R.P. Taylor
Published: Physics Today, 63-64, May 2011 (INVITED AND COMMISSIONED)

R.P. Taylor,

244. “NSF Program Benefits Schools in Need”
R. Parthasarathy, R.P. Taylor et al
Published: Science, commentary, 322 173-174 (2011).

245. “Look What Cropped Up”
R.P. Taylor
Published: Tilth, 22 16 (2011) (COMMISSIONED)

246. “Perceptual and Physiological Responses to Jackson Pollock’s Fractals”
R.P. Taylor, B. Spehar, P. van Donkelaar, C. Hagerhall,
Published: Chapter in the book “Art and the Brain” published in the series Frontiers
in Human Neuroscience, 5 1-13 (2011) (INVITED, REFEREED).

247. “Physics, Perception and Physiology of Jackson Pollock’s Fractals”
R.P. Taylor
Published: i-Perception, 2 (4) 284 ISSN: 20141-6695 (2011) (REFEREED).

B. Spehar and R.P. Taylor
Published: Perception, 40 122-123 (2011) (REFEREED).

249. “Social Mood, Deep History and the Elliot Waves Principle”
J. Casti, J. Meyer and R.P. Taylor
George Musser
I contributed photographic images for this on-line article for *Scientific American* July 2011 (http://www.scientificamerican.com/article.cfm?id=livio-the-unreasonable-beauty-of-mathematics)

251. “Coming Soon to a Field Near You: The Physics of Crop Circle Formation”
**R.P. Taylor**
Published: *Physics World* 24 26-31 August 2011 (INVITED AND COMMISSIONED)

252. “Fractal Electronic Devices: Simulation and Implementation”
M.S. Fairbanks, D. McCarthy, S. Scott, S.A. Brown, **R.P. Taylor**
Published: *Nanotechnology* 22 365304 (2011) (REFEREED)

253. “The Transience of Virtual Fractals”
**R.P. Taylor**


J. Mureika and **R.P. Taylor**
Published: Special Issue on "Image Processing for Art Investigation", *Signal Processing* 93 573-578 (2013) (REFEREED)

256. “Fractal Expressionism: the Art and Science Behind Jackson Pollock’s Paintings”
**R.P. Taylor**, book
To be published by *World Scientific* (INVITED AND COMMISSIONED)

257. “Probing the Sensitivity of Electron Wave Interference to Scattering-Induced Disorder in Solid-state Devices”
Published: *Physical Review B* 85 195319 (2012) (REFEREED)

258. “Impact of Small-angle Scattering on Ballistic Transport in Quantum Dots”
Andrew M. See, Ian Pilgrim, Billy C. Scannell, Rick Montgomery, Oleh Klochan Martin Aagesen, Poul-Erik Lindelof, Ian Farrer, David A. Ritchie, **R. P. Taylor**, Alex R. Hamilton and Adam P. Micolich

259. “Is it the Boundaries or Disorder that Dominates Electron Dynamics in Semiconductor billiards?”

Published: the proceedings of the International Conference on Semiconductor Physics (2013) (REFEREED).

261. “A Fractal Comparison of Escher and Koch Tesselations”
B. van Dusen, B.C. Scannell and **R.P. Taylor**
262. “Human EEG Responses to Exact and Statistical Fractal Patterns”  
C. Hagerhall, T. Laike, R.P. Taylor, M. Kuller, E. Marcheschi, C. Bodyton  
Published: IAPS (2012) (REFEREED).

B. van Dusen and R.P. Taylor  

264. “Making Quantum Devices with Electrical Properties that are Robust to Thermal Cycling Using AlGaGaAs HIGFET Structures”  
A.M. See, I. Pilgrim, B.C. Scannell, R. Montgomery, O. Klochan  
Published in the Proceeding of the APS Meeting 1 20012 (2013)

265. “Stimulating Creativity by Integrating Research and Teaching Across the Academic Disciplines”  
R.P. Taylor  
Published in the Proceeding of the APS Meeting (2013)

266. “Neural Stimulation via Fractal Electrodes”  
Published in the Proceeding of the APS Meeting, 1 31012 (2013)

I. Pilgrim, B.C. Scannell, A.M. See, R.D. Montgomery, P.K. Morse, M.S. Fairbanks, C.A. Marlow  
Published in the Proceeding of the APS Meeting, 1 23008 (2013)

268. “Fractals in Art and Nature: Why Do We Like Them?”  
B. Spehar and R.P. Taylor  
Published: SPIE, special edition on Human Vision and Electronic Imaging, 8651 865118 (2013)  

269. “A Fascination with Fractals”  
R.P. Taylor  
Published: Invited feature article, Physics World, 37-41, September 2013. (INVITED)

270. “The Fractalist”  
R.P. Taylor  
Published: Invited Review, Physics Today, 2013. (INVITED)

271. “General Physics Study Guide”  
R.P. Taylor  
Published: Prentice Hall, 2013.

R.L. Chamousis, L. Chang, W.J. Watterson, R. Montgomery, R.P. Taylor, A.J. Moule,  
S.E. Shaheen, B. Ilan, J. van de Lagemaat and F.E. Osterloh  
Published: Papers of the American Chemical Society, 245 (2013). (REFEREED).

273. “The Fractal Clock”  
R. Downing and R.P. Taylor  
Published: The Journal of Nonlinear Dynamics, Psychology, and Life Sciences, 18 109 (2014)  
(INVITED)

274. “Creative Confluence”  
M.M.M. Lowcre et al, “Organic Creativity and the Physics Within”  
275. “Fractal Images Induce Fractal Pupil Dilations”


278. “The effects of visual scene complexity on human visual cortex”
A.J. Bies, J. Wekselblatt, C. Boydston, R.P. Taylor and M.E. Sereno
Published: Society for Neuroscience, 2015 [Abstract]

279. “An Edgy Image Statistic: Semi-Automated Edge Extraction and Fractal Box-Counting Algorithm Allows for Quantification of Edge Dimension In the Natural Scenes”
A.J. Bies, R.P. Taylor, and M.E. Sereno

280. “Human Physiological Benefits of Viewing Nature: EEG Response to Exact and Statistical Fractal Patterns”
C.M. Hagerhall, T. Laike, M. Küller, E. Marcheschi, C. Boydston and R.P. Taylor

281. “Fractal Interconnects for Neuroelectronic Interfaces and Implants using the Same”
R.P. Taylor and S.A. Brown,
U.S. Patent no. 12/931978, issued July 2015

282. “Temporal Structure of Human Gaze Dynamics is Invariant During Free Viewing”
C.A. Marlow, I.V. Viskontas, A. Matlin, C. Boydston, A. Boxer and R.P. Taylor

B. Spehar, S. Wong, S. van de Klundert, J. Lui, C.W.G. Clifford and R.P. Taylor

284. “General Physics Study Guide (Edition 2)”
R.P. Taylor
Published: Prentice Hall, 2015.

N. Street, A. Forsythe, R.G. Reilly, R.P. Taylor, C. Boydston and M.S. Helmy,

286. “The Aesthetic Response to Exact Fractals Driven by Physical Complexity”
A. Bies, D.R. Blanc-Golhammer, C.R. Boydston, R.P. Taylor and M.E. Sereno

287. “Taxonomy of Variations in Aesthetic Response to Fractal Patterns”
B Spehar, N. Walker and R.P. Taylor
288. “General Physics Study Guide (Edition 3)”
   **R.P. Taylor**
   Published: *Prentice Hall*, 2016.

289. “Spatial Localization Accuracy Varies with the Fractal Dimension of the Environment”,
   A. W. Juliani, A.J. Bies, C. Boydston, **R.P. Taylor**, M.E. Sereno
   Published: *Vision Sciences Society Annual Meeting*, 2016 [Abstract]

290. “Percepts from Noise Patterns: The Role of Fractal Dimension in Object Pareidolia”

291. “Navigation Performance in Virtual Environments Varies with Fractal Dimension of Landscape”
   A. W. Juliani, A.J. Bies, C.R. Boydston, **R.P. Taylor**, and M.E. Sereno

292. “Relationship Between Fractal Dimension and Scaling Decay Rate in Computer-generated Fractals”
   A.J. Bies, C.R. Boydston, **R.P. Taylor**, and M.E. Sereno

293. “Fractal Fluency: An Intimate Relationship Between the Brain and Processing of Fractal Stimuli”
   **R.P. Taylor** and B. Spehar

294. “Fractal Interconnects as a Generic Interface to Neurons”
   W.J. Watterson, S. Moslehi, J.H. Smith, R.D. Montgomery and **R.P. Taylor**

295. “Seeing Shapes in Seemingly Random Patterns: Fractal Analysis of Rorschach Ink Blots”

296. “Fractal Patterns in Nature and Art are Aesthetically Pleasing and Stress-Reducing”
   **R.P. Taylor**
   Published: *Smithsonian*, March 31st 2017 (INVITED).

297. “Fractal Electrodes as a Generic Interface for Stimulating Neurons”
   W.J. Watterson, R.D. Montgomery and **R.P. Taylor**

298. “Biological Mechanisms and Neurophysiological Responses to Sensory Impact from Nature”
   C. Hagerhall, **R.P. Taylor**, G. Cerwen, G. Watts, M. van den Bosch, D. Press and S. Minta

299. “General Physics Study Guide (Edition 4)”
   **R.P. Taylor**
   Published: *Prentice Hall*, 2017.

300. “The Implications of Fractal Fluency for Bioinspired Architecture”
    **R.P. Taylor**, A.W. Juliani, A.J. Bies, B. Spehar, and M.E. Sereno,
“Modelling the Improved Visual Acuity Using Photodiode Based Retinal Implants Featuring Fractal Electrodes”
W.J. Watterson, R.D. Montgomery and R.P. Taylor

“An Eye for Nature”
R.P. Taylor

“The Artist Who Walked on the Moon”
R.P. Taylor

“Fractal Analysis of Time Series Data Sets: Methods and Challenges”
I. Pilgrim and R.P. Taylor

“A Factor Analytic Approach reveals variability and Consistency in Perceived Complexity Ratings of Landscape Photographs”
A. Bies, W. Tate, R.P. Taylor and M Sereno

“Perceived Complexity and Aesthetic Responses to Landscape Photographs”
W. Tate, R.P. Taylor, M Sereno and A. Bies

“Fractals in Architecture: The Visual Interest and Mood Response to Projected Fractal Light Patterns in Interior Spaces”
B. Abboushi, I. Elzeyadi, R.P. Taylor and M. Sereno
Published: *The Journal of Environmental Psychology*, 61 57-70 (2018)

“Perceptual Responses to Fractal Light Patterns”
B. Abboushi, I. Elzeyadi, R.P. Taylor and M. Sereno

“Nature’s Fractal Similarities: Integrating Art and Science”
R.P. Taylor

“A Fractal Epistemology for Scientific Psychology”
R.P. Taylor

“Using Science to Generate and Tune Fractal Aesthetics”
B. Van Dusen, B. Spehar, M. Sereno and R.P. Taylor
Published: Chapter to the book *Armchair and Paintbrush: An Eternal Philosophico-Artistic Tango* (Springer) 2019 (INVITED)

“Francis O’Connor and Jackson Pollock’s Fractals”
R.P. Taylor

“Investigating Visual Interest and Mood Response to Light Patterns in Architectural Renderings”
B. Abboushi, I. Elzeyadi, R.P. Taylor and M. Sereno
Published: Sustainable Urban Environments: Research, Design and Planning for the Next 50 Years (2019)

314. “Relaxing Floors: Fractal Fluency for the Built Environment”
Published: The Journal of Nonlinear Dynamics, Psychology, and Life Sciences, 24 127-141 (2020)

Published: PLOS ONE 1-13 (https://doi.org/10.1371/journal.pone.0229945) (2020)

316. “The Role of an Aluminum Underlayer on the Biocompatibility and Mechanical Integrity of Vertically Aligned Carbon Nanotubes for Interfacing with Retinal Neurons”

317. “Machine Learning and Fractal Analysis Process for Classifying Motion”
S. Roach, C. Boydston and R.P. Taylor
US Patent filed: April 2020

318. “The Perception of Composite Fractal Environments”
Emily Owen, Kelly Robles, Richard Taylor and Margaret E. Sereno

319. “Physical Guidance of In Vitro Retinal Neurons Using Zig-zag Surface Patterns”
S. Moslehi, W.J. Watterson, C. Rowland, J.H. Smith, M-T Perez, R.P. Taylor
Published: American Journal of Biomedical Science and Research (AJBSR), 11(4) (2020).

Published: Journal of the Illuminating Engineering Society (LEUKOS) 17 (4), 321-337 (2020)
DOI: 10.1080/15502724.2020.1785309

321. “A Shared Fractal Aesthetic Across Development”
Published: Nature: Humanities and Social Science Communications, (2020)
7:158 | https://doi.org/10.1057/s41599-020-00648-y

322. “How Neurons Exploit Fractal Geometry to Maximize Physical Connectivity”
Published in Nature: Scientific Reports, 11, 2332 (2021) https://doi.org/10.1038/s41598-021-81421-2

R.P. Taylor

324. “Investigation of Fractal Carbon Nanotube Networks for Biophilic Neural Sensing Applications”
Published: Nanomaterials 11, 636 (2021) https://doi.org/10.3390/nano11030636

325. “Aesthetics and Psychological Effects of Fractal Based Design”
R.P. Taylor, B. Spehar and M.E. Sereno
Published: Frontiers Environmental Psychology, special edition on Biophilic Design Rationale: Theory, Methods, and Applications, 12, 699962 (2021) [https://doi.org/10.3389/fpsyg.2021.699962]

326. “Working with Fractals: A Resource for Practitioners of Biophilic Design”
Published: Report, Terrapin Bright Green, New York (2021)

327. “Fractal Fluency in the Built Environment”
S. Stadlober, A. Lesjak, R.P. Taylor, M. Lesjak
Published: Fractals Research (2021), Book ISBN: 978-0-9791874-8-3 0-9791874-8-6

A.A. Brielmann, N.H Buras, N.A. Salingaros, R.P. Taylor

329. “Controlled Assembly of Retinal Cells on Fractal and Euclidean Electrodes”
S. Moslehi, C. Rowland, J.H. Smith, W.J. Watterson, D. Miller, C. Niell, B. Aleman, M. Perez, R.P. Taylor
To be published in PLOS One.

330. “Motherwell’s Journey”
R.P. Taylor
To be published in Oregon Quarterly.

331. “Investigating Fractal Analysis as a Diagnostic Tool that Probes the Connectivity of Hippocampal Neurons”
Accepted for publication in Frontiers in Physiology.

332. “Fractal Fluency: Processing of Fractal Stimuli Across Sight, Sound and Touch”
R.P. Taylor and B. Spehar

333. “Fractal Herding as a Biocompatible Approach to Stimulating and Sensing Retinal Signals”

334. “Fractal Resonance: Maximizing Connectivity Between Implant Electrodes and Neurons”
C. Rowland, S. Moslehi, J.H. Smith, W.J. Watterson, R.D. Montgomery and R.P. Taylor,

335. “Fractal Shifts and Aesthetic Rifts: Climate Change and Emotional Well-being”
R. York and R.P. Taylor
Submitted to Climatic Change

336. “Fractal Analysis of Orthodox Iconography using the Kolmogorov Complexity”

337. “Comparisons of retinal neuronal and glial cell interactions with fractal and grid-shaped electrodes”

Draft manuscript written, to be submitted to Scientific Reports.
“The Art of Balance: Scaling Analysis of Poured Paintings Generated by Adults and Children”
M.S. Fairbanks, J. Mureika and R.P. Taylor,
Manuscript in preparation, to be submitted to Leonardo