

## A.P. Micolich – Publication List

- **Refereed Journal Publications**
- **Book Chapters**
- **Refereed Conference Proceedings**
- **Patents**
- **Other Publications – Abstracts, Unrefereed Conference Proceedings and Minor Papers**
- **Unpublished Theses**

### Publications submitted or in preparation

1. “Interplay between one-dimensional confinement and crystallographic anisotropy in ballistic hole quantum wires”  
O. Klochan, **A.P. Micolich**, L.H. Ho, A.R. Hamilton, K. Muraki and Y. Hirayama  
Submitted to *Physical Review Letters*.
2. “Digital video as a resource for teaching physics – A preliminary evaluation of effectiveness and some tips on how to do it better.”  
**A.P. Micolich**  
Submitted to *Proceedings of 2008 National Uniserve Conference*.
3. “The Reduced Effective Interaction Parameter in Closely Spaced Two-dimensional Hole Systems”  
L.H. Ho, **A.P. Micolich**, W.R. Clarke, O. Klochan and A.R. Hamilton  
Submitted to *AIP Conference Proceedings*.
4. “Radio-frequency reflectometry on macroscopic 2D samples”  
L.J. Taskinen, R.P. Starrett, T.P. Martin, **A.P. Micolich** and A.R. Hamilton  
Submitted to *Reviews of Scientific Instruments*.
5. “The use of a nearby 2D electron system to screen long-range Coulomb interactions”  
L.H. Ho, **A.P. Micolich**, A.R. Hamilton, O.P. Sushkov and I.S. Terekhov  
In preparation for *Physical Review B*.
6. “Electrical Properties of Tin-Antimony Thin Films on Plastic Substrates”  
A.P. Stephenson, U. Divakar, **A.P. Micolich**, B.J. Powell and P. Meredith  
In preparation for *Journal of Applied Physics*.

### Refereed Journal Publications

1. “The latent potential of *YouTube* – Will it become the 21<sup>st</sup> Century Lecturer’s Film Archive?”  
**A.P. Micolich**  
In Press for *CAL-laborate* October 2008 Issue (Accepted 3/7/08).
2. “Enhanced Zeeman splitting in  $\text{Ga}_{0.25}\text{In}_{0.75}\text{As}$  quantum point contacts”  
T.P. Martin, A. Szorkovszky, **A.P. Micolich**, A.R. Hamilton, C.A. Marlow, H. Linke, R.P. Taylor and L. Samuelson  
Published: *Applied Physics Letters* **93**, 012105 (2008).
3. “Effect of screening long-range Coulomb interactions on the metallic behavior in two-dimensional hole systems”  
L.H. Ho, W.R. Clarke, **A.P. Micolich**, R. Danneau, O. Klochan, M.Y. Simmons, A.R. Hamilton, M. Pepper and D.A. Ritchie  
Published: *Physical Review B – Rapid Communications* **77**, 201402 (2008).
4. “0.7 Structure and zero bias anomaly in ballistic hole quantum wires”  
R. Danneau, O. Klochan, W. R. Clarke, L. H. Ho, **A. P. Micolich**, M. Y. Simmons, A. R. Hamilton, M. Pepper and D. A. Ritchie  
Published: *Physical Review Letters* **100**, 016403 (2008).

5. "Ohmic Conduction of sub-10nm P-doped Si nanowires at cryogenic temperatures"  
F.J. Ruess, **A.P. Micolich**, W. Pok, K.E.J. Goh, A.R. Hamilton and M.Y. Simmons  
Published: *Applied Physics Letters* **92**, 052101 (2008).
6. "Quantum transport in one-dimensional GaAs hole systems"  
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  
Published: *International Journal of Nanotechnology* **5** (2), 318-330 (2008).
7. "The 0.7 anomaly in one-dimensional hole quantum wires"  
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  
Published: *Journal of Physics: Condensed Matter* **20**, 164205 (2008) – Invited review in special edition on the 0.7-feature in 1D systems.
8. "Impact of long- and short-range disorder on the metallic behaviour of two-dimensional systems"  
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  
Published: *Nature Physics* **4**, 55-59 (2007).
9. "An Improved Process for Fabricating High-Mobility Organic Molecular Crystal Field-Effect Transistors"  
**A.P. Micolich**, L.L. Bell, A.R. Hamilton  
Published: *Journal of Applied Physics* **102**, 084511 (2007).
10. "Authenticating Pollock Paintings with Fractal Geometry"  
R.P. Taylor, R. Guzman, T.P. Martin, G.D.R. Hall, **A.P. Micolich**, D. Jonas, B.C. Scannell, M.S. Fairbanks and C.A Marlow  
Published: *Pattern Recognition Letters* **28**, 695 (2007).  
  
This paper was the subject of a News Feature in the 9<sup>th</sup> Feb issue of *Nature* **439**, 648 (2006), and was also reported in the *New York Times* by R. Kennedy on 9<sup>th</sup> Feb. 2006.
11. "Reply to Jones-Smith and Mathur"  
R.P. Taylor, **A.P. Micolich** and D. Jonas  
Published: *Nature* **444**, E10-11 (2006).
12. "Superconductivity in Metal-mixed Ion-implanted Polymer Films"  
**A.P. Micolich**, E. Tavenner, B.J. Powell, A.R. Hamilton, M.T. Curry, R.E. Giedd and P. Meredith  
Published: *Applied Physics Letters* **87**, 155203 (2006).
13. "Conductance Quantization in Induced One-Dimensional Hole Systems"  
O. Klochan, R. Danneau, W.R. Clarke, **A.P. Micolich**, L.-H. Ho, A.R. Hamilton, K. Muraki and Y. Hirayama  
Published: *Applied Physics Letters* **89**, 092105 (2006).  
  
This paper was discussed in a News & Views article by K. Ensslin in *Nature Physics* **2**, 587 (2006).
14. "Zeeman spin-splitting anisotropy in ballistic hole quantum wires"  
R. Danneau, O. Klochan, W.R. Clarke, L.-H. Ho, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, M. Pepper, D.A. Ritchie and U. Zülicke  
Published: *Physical Review Letters* **97**, 026403 (2006).
15. "Conductance quantization and the  $0.7 \times 2e^2/h$  conductance anomaly in one-dimensional hole systems"  
R. Danneau, W.R. Clarke, O. Klochan, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, M. Pepper and D.A. Ritchie  
Published: *Applied Physics Letters* **88**, 012107 (2006). (Also available at cond-mat/0507592)  
  
This paper was discussed in a News & Views article by K. Ensslin in *Nature Physics* **2**, 587 (2006).
16. "Fabrication of induced two-dimensional hole systems on (311)A GaAs"  
W.R. Clarke, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, K. Muraki and Y. Hirayama  
Published: *Journal of Applied Physics* **99**, 023707 (2006).

17. "Interaction correction to the longitudinal conductivity and Hall resistivity in high quality two-dimensional GaAs electron and hole systems"  
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  
Published *Physical Review B (Rapid Communications)* **72**, 241310 (2005). (Also available at cond-mat/0403411).
18. "Evolution of the bilayer  $\nu = 1$  quantum Hall state under charge imbalance"  
W.R. Clarke, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, C.B. Hanna, J.R. Rodriguez, M. Pepper and D.A. Ritchie  
Published: *Physical Review B (Rapid Communications)* **71**, 081304 (2005).
19. "Three key questions on fractal conductance fluctuations: Dynamics, quantization and coherence"  
**A.P. Micolich**, R.P. Taylor, T.P. Martin, R. Newbury, T.M. Fromhold, A.G. Davies, H. Linke, W.R. Tribe, L.D. Macks, C.G. Smith, E.H. Linfield and D.A. Ritchie  
Published: *Physical Review B* **70**, 085302 (2004).
20. "The Dependence of Fractal Conductance Fluctuations on Soft-wall Profile in a Double-2DEG Billiard"  
**A.P. Micolich**, R.P. Taylor, A.G. Davies, T.M. Fromhold, H. Linke, L.D. Macks, R. Newbury, A. Ehlert, W.R. Tribe, E.H. Linfield and D.A. Ritchie  
Published: *Applied Physics Letters* **80**, 4381 (2002).
21. "The Construction of Jackson Pollock's Fractal Drip Paintings"  
R.P. Taylor, **A.P. Micolich** and D. Jonas  
Published: *Leonardo* **35**, 203 (2002).
22. "A Compact Fourth-Order Finite Difference Method for Solving Differential Equations"  
P.B. Wilkinson, T.M. Fromhold, C.R. Tench, R.P. Taylor and **A.P. Micolich**  
Published: *Physical Review E* **64**, 047701 (2001).
23. "Effects of Geometrical Ray Chaos on the Electromagnetic Eigenmodes of a Gradient Index Optical Cavity"  
P.B. Wilkinson, T.M. Fromhold, R.P. Taylor and **A.P. Micolich**  
Published: *Physical Review E* **64**, 026203 (2001).
24. "The Evolution of Fractal Patterns during a Classical-Quantum Transition"  
**A.P. Micolich**, R.P. Taylor, A.G. Davies, J.P. Bird, R. Newbury, T.M. Fromhold, A. Ehlert, H. Linke, L.D. Macks, W.R. Tribe, E.H. Linfield, D.A. Ritchie, J. Cooper, Y. Aoyagi and P.B. Wilkinson  
Published: *Physical Review Letters* **87**, 036802 (2001).
25. "Electromagnetic Wave Chaos in Gradient Refractive Index Optical Cavities"  
P.B. Wilkinson, T.M. Fromhold, R.P. Taylor and **A.P. Micolich**  
Published: *Physical Review Letters* **86**, 5466 (2001).
26. "Semiconductor Billiards – A Controlled Environment to Study Fractals"  
R.P. Taylor, **A.P. Micolich**, R. Newbury, T.M. Fromhold, A. Ehlert, A.G. Davies, L.D. Macks, C.R. Tench, J.P. Bird, H. Linke, W.R. Tribe, E.H. Linfield and D.A. Ritchie  
Published: *Physica Scripta* **T90**, 41 (2001).
27. "Chaos in Quantum Ratchets"  
H. Linke, T.E. Humphrey, R.P. Taylor, **A.P. Micolich** and R. Newbury  
Published: *Physica Scripta* **T90**, 54 (2001).
28. "The Construction of Pollock's Fractal Drip Paintings"  
R.P. Taylor, **A.P. Micolich** and D. Jonas  
In Press: *The Visual Mind Part 4: Art and Mathematics*

29. "An Investigation of Weierstrass Self-Similarity in a Semiconductor Billiard"  
**A.P. Micolich**, R.P. Taylor, R. Newbury, T.M. Fromhold and C.R. Tench  
Published: *Europhysics Letters* **49**, 417 (2000).
30. "Using Science to Investigate Jackson Pollock's Drip Paintings"  
R.P. Taylor, **A.P. Micolich** and D. Jonas  
Published: *Journal of Consciousness Studies* **7**, 137 (2000).
31. "Comment on Fractal Conductance Fluctuations in a Soft-wall Stadium and a Sinai Billiard"  
R.P. Taylor, **A.P. Micolich**, T.M. Fromhold and R. Newbury  
Published: *Physical Review Letters* **83**, 1074 (1999).
32. "Fractal Analysis of Pollock's Drip Paintings"  
R.P. Taylor, **A.P. Micolich** and D. Jonas  
Published: *Nature* **399**, 422 (1999).
33. "Exact and Statistical Self-Similarity in Magneto-Conductance Fluctuations: A Unified Picture"  
R.P. Taylor, **A.P. Micolich**, R. Newbury, J.P. Bird, T.M. Fromhold, J. Cooper, Y. Aoyagi and T. Sugano  
Published: *Physical Review B* (Brief Reports) **58**, 11107 (1998).
34. "Environmental Coupling and Phase Breaking in Open Quantum Dots"  
J.P. Bird, **A.P. Micolich**, H. Linke, D.K. Ferry, R. Akis, Y. Ochiai, Y. Aoyagi and T. Sugano  
Published: *Journal of Physics: Condensed Matter* **10**, L55 (1998).
35. "Experimental and Theoretical Investigations of Electron Dynamics in a Semiconductor Sinai Billiard"  
**A.P. Micolich**, R.P. Taylor, R. Newbury, C.P. Dettmann and T.M. Fromhold  
Published: *Australian Journal of Physics* **51**, 547 (1998).
36. "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).
37. "Fractal Transistors"  
R.P. Taylor, **A.P. Micolich**, R. Newbury, C.P. Dettmann and T.M. Fromhold  
Published: *Semiconductor Science and Technology* **12**, 1459 (1997).
38. "Correlation Analysis of Self-Similarity in Semiconductor Billiards"  
R.P. Taylor, **A.P. Micolich**, R. Newbury and T.M. Fromhold  
Published: *Physical Review B* (Rapid Communications) **56**, R12733 (1997).
39. "Quantum Transport in Open Mesoscopic Cavities"  
J.P. Bird, R. Akis, D.K. Ferry, D.P. Pivin Jr., K.M. 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  
Published: *Chaos, Solitons and Fractals* **8**, 1299 (1997).

### Book Chapters

1. "A Review of Fractal Conductance Fluctuations in Ballistic Semiconductor Devices"  
R.P. Taylor, R. Newbury, **A.P. Micolich**, T.M. Fromhold, H. Linke, A.G. Davies, J.P. Bird, T.P. Martin and C.A. Marlow  
Invited chapter in the book *Electron Transport in Quantum Dots*, Ed. J.P. Bird  
Published: Kluwer Academic/Plenum (2003). ISBN: 1-4020-7459-X

### Refereed Conference Proceedings

1. "The effect of temperature and gas flow on the physical vapour growth of mm-scale rubrene crystals for organic FETs"  
A.R. Ullah, **A.P. Micolich**, J.W. Cochrane and A.R. Hamilton  
Published: *Proceedings of SPIE* **6800**, doi 10.1117/12.759015 (2008).

2. "Single particle and momentum relaxation times in two-dimensional electron systems"  
S.J. MacLeod, T.P. Martin, **A.P. Micolich** and A.R. Hamilton  
Published: *Proceedings of SPIE* **6800**, doi 10.1117/12.759655 (2008).
3. "Conductance quantization in induced one-dimensional hole systems"  
O. Klochan, W. R. Clarke, R. Danneau, **A. P. Micolich**, L. H. Ho, A. R. Hamilton, K. Muraki and Y. Hirayama  
Published: *American Institute of Physics Conference Proceedings* **893**, 681 (2007).
4. "Anisotropic Zeeman splitting in ballistic one-dimensional hole systems"  
R. Danneau, O. Klochan, W.R. Clarke, L.H. Ho, **A.P. Micolich**, M.Y. Simmons, A.R. Hamilton, M. Pepper, D.A. Ritchie and U. Zülicke  
Published: *American Institute of Physics Conference Proceedings* **893**, 699 (2007)
5. "Ballistic Transport in One-dimensional Bilayer Hole Systems"  
R. Danneau, W.R. Clarke, O. Klochan, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, M. Pepper and D.A. Ritchie  
Proceedings of the "16<sup>th</sup> International Conference on the Electronic Properties of Two-Dimensional Systems (EP2DS-16)", Albuquerque, New Mexico, U.S.A., 10<sup>th</sup> – 15<sup>th</sup> July 2005.  
Published: *Physica E* **34**, 550 (2006).
6. "Fabrication and characterization of a 2D hole system in a novel (311)A GaAs SISFET"  
W.R. Clarke, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, K. Muraki and Y. Hirayama  
Proceedings of the "5<sup>th</sup> International Conference on Low-Dimensional Structures and Devices", Cancun, Mexico, 12<sup>th</sup> - 17<sup>th</sup> December 2004.  
Published: *Microelectronics Journal* **36**, 327 (2005).
7. "Stability of the bilayer  $\nu = 1$  quantum Hall state under charge imbalance"  
W.R. Clarke, **A.P. Micolich**, A.R. Hamilton, M.Y. Simmons, M. Pepper, D.A. Ritchie  
Proceedings of the "15<sup>th</sup> International Conference on the Electronic Properties of Two-Dimensional Systems (EP2DS-15)", Nara, Japan, 13<sup>th</sup> – 18<sup>th</sup> July 2003.  
Published: *Physica E* **22**, 40 (2004).
8. "Generic Fractal Behaviour of Ballistic Devices"  
R.P. Taylor, R. Newbury, **A.P. Micolich**, A.G. Davies, T.M. Fromhold, H. Linke, L.D. Macks, W.R. Tribe, E.H. Linfield, D.A. Ritchie and T.P. Martin  
Proceedings of "2002 Conference on Optoelectronic and Microelectronic Materials and Devices"  
Sydney, Australia, 11<sup>th</sup> – 13<sup>th</sup> December 2002.  
Published: *Proceedings of The 2002 Conference on Optoelectronic and Microelectronic Materials and Devices*, 394, Ed. M. Gal, Spinning Head Publications ISBN 0-7803-7571-8 (2003)
9. "Fractal Transport Behaviour in Coupled Dot Systems"  
Y. Ochiai, L. Lin, N. Aoki, Y. Iwase, K. Ishibashi, **A.P. Micolich**, R.P. Taylor and J.P. Bird  
Published: Proceedings of "Localization 2002" Tokyo (2003).
10. "Geometry Independence of Fractal Ballistic Processes"  
R.P. Taylor, T.P. Martin, **A.P. Micolich**, H. Linke, A.G. Davies, T.M. Fromhold, R. Newbury, E.H. Linfield and C.A. Marlow  
Proceedings of "Fourth International Symposium on Nanostructures and Mesoscopic Systems"  
Tempe, Arizona U.S.A, 17<sup>th</sup> – 21<sup>st</sup> February 2003.  
Published: *Physica E* **19**, 225 (2003).
11. "Fractal Conductance Fluctuations in Single- and Double-layer Billiards"  
R.P. Taylor, **A.P. Micolich**, H. Linke, A.G. Davies, T.M. Fromhold, R. Newbury, L.D. Macks, W.R. Tribe, E.H. Linfield, D.A. Ritchie, T. Martin and C. Marlow  
Proceedings of "The 26<sup>th</sup> International Conference on the Physics of Semiconductors"  
Edinburgh, Scotland, 29<sup>th</sup> July – 2<sup>nd</sup> August 2002.  
Published: *Institute of Physics Conference Series* **171** (2003) (available on CD)

12. "Dependence of Fractal Conductance Fluctuations on Semiconductor Billiard Parameters"  
**A.P. Micolich**, R.P. Taylor, R. Newbury, J.P. Bird, T.M. Fromhold, A.G. Davies, L.D. Macks, A. Ehlert, H. Linke, W.R. Tribe, E.H. Linfield, D.A. Ritchie, J. Cooper and Y. Aoyagi.  
 Proceedings of "The 15<sup>th</sup> Biennial Congress of the Australian Institute of Physics"  
 Sydney, Australia, 8<sup>th</sup> – 11<sup>th</sup> July 2002.  
 Published: *AIP Congress 2002 CD-ROM*, ISBN 0-9598064-4-X, 367 (2002).
  
13. "The Dependence of Fractal Conductance Fluctuations on Semiconductor Billiard Parameters"  
**A.P. Micolich**, R.P. Taylor, R. Newbury, J.P. Bird, T.M. Fromhold, A.G. Davies, L.D. Macks, A. Ehlert, H. Linke, W.R. Tribe, E.H. Linfield, D.A. Ritchie, J. Cooper, Y. Aoyagi and P.B. Wilkinson  
 Proceedings of "The 12<sup>th</sup> International Conference on Hot Carriers in Semiconductors"  
 Santa Fe, New Mexico, U.S.A., 27<sup>th</sup>-31<sup>st</sup> August 2001.  
 Published: *Physica B* **314**, 477 (2002).
  
14. "Pumping Heat with Quantum Ratchets"  
 T.E. Humphrey, H. Linke, R.P. Taylor, **A.P. Micolich** and R. Newbury  
 Proceedings of "The 12<sup>th</sup> International Conference on Hot Carriers in Semiconductors"  
 Santa Fe, New Mexico, U.S.A., 27<sup>th</sup>-31<sup>st</sup> August 2001.  
 Published: *Physica B* **314**, 464 (2002).
  
15. "The Dependence of Fractal Conductance Fluctuations on Soft-wall Profile in a Double-2DEG Billiard"  
**A.P. Micolich**, R.P. Taylor, A.G. Davies, T.M. Fromhold, R. Newbury, A. Ehlert, L.D. Macks, W.R. Tribe, H. Linke, E.H. Linfield and D.A. Ritchie  
 Proceedings of "The 14<sup>th</sup> International Conference on the Electronic Properties of Two-Dimensional Systems", Prague, Czech Republic, 30<sup>th</sup> July - 3<sup>rd</sup> August 2001.  
 Published: *Physica E* **12**, 841 (2002).
  
16. "Discrete Energy Level Spectrum Dependence of Fractal Conductance Fluctuations in Semiconductor Billiards"  
**A.P. Micolich**, R.P. Taylor, R. Newbury, J.P. Bird, T.M. Fromhold, A.G. Davies, L.D. Macks, A. Ehlert, H. Linke, W.R. Tribe, E.H. Linfield, D.A. Ritchie, J. Cooper, Y. Aoyagi and P.B. Wilkinson  
 Proceedings of "The 10<sup>th</sup> International Conference on Modulated Semiconductor Structures"  
 Linz, Austria, 23<sup>rd</sup>-27<sup>th</sup> July 2001.  
 Published: *Physica E* **13**, 683 (2002).
  
17. "Temperature and Size Dependence of Fractal MCF in Semiconductor Billiards"  
**A.P. Micolich**, R.P. Taylor, J.P. Bird, R. Newbury, H. Linke, Y. Aoyagi and T. Sugano  
 Proceedings of "The 3<sup>rd</sup> International Conference on Low Dimensional Structures and Devices"  
 Antalya, Turkey, 15-17<sup>th</sup> September 1999.  
 Published: *Microelectronic Engineering* **51-52**, 241 (2000).
  
18. "A Physical Explanation for the Origin of Self-Similar Magneto-Conductance Fluctuations in Semiconductor Billiards"  
 C.R. Tench, T.M. Fromhold, M.J. Carter, R.P. Taylor, **A.P. Micolich** and R. Newbury  
 Proceedings of "The 9<sup>th</sup> International Conference on Modulated Semiconductor Structures"  
 Fukuoka, Japan, 12-16<sup>th</sup> July 1999.  
 Published: *Physica E* **7**, 726 (2000).
  
19. "Chaotic Ray Dynamics and Fast Optical Switching in Micro-cavities with a Graded Refractive Index"  
 P.B. Wilkinson, T.M. Fromhold, C.R. Tench, R.P. Taylor, **A.P. Micolich** and R. Newbury  
 Proceedings of "The 11<sup>th</sup> International Conference on Hot Carriers in Semiconductors"  
 Kyoto, Japan, 19-23<sup>rd</sup> July 1999.  
 Published: *Physica B* **272**, 484 (1999).

20. "Observation of Fractal Conductance Fluctuations over Three Orders of Magnitude"  
R.P. Taylor, **A.P. Micolich**, R. Newbury, T.M. Fromhold, and C.R. Tench  
Proceedings of "The 8<sup>th</sup> Gordon Godfrey Workshop on Condensed Matter Physics"  
Sydney, Australia, 1998.  
Published: *Australian Journal of Physics* **52**, 887 (1999).
21. "Physical Realisation of Weierstrass Scaling using a Quantum Interferometer"  
**A.P. Micolich**, R.P. Taylor, T.M. Fromhold, C.R. Tench and R. Newbury  
Proceedings of "The Conference on Optoelectronic and Microelectronic Materials and Devices"  
Perth, Australia, 1998.  
Published: *IEEE Optoelectronic and Microelectronic Materials and Devices*, ISBN 0-7803-4513-4, 468,  
(1999).
22. "The Temperature Dependent Fractal Dimension of Magneto-Conductance Fluctuations in Semiconductor  
Billiards"  
**A.P. Micolich**, R.P. Taylor, J.P. Bird, R. Newbury, Y. Aoyagi and T. Sugano  
Proceedings of "The Conference on Optoelectronic and Microelectronic Materials and Devices"  
Perth, Australia, 1998.  
Published: *IEEE Optoelectronic and Microelectronic Materials and Devices*, ISBN 0-7803-4513-4, 471,  
(1999).
23. "Scale Factor Mapping of Self-Similarity in Semiconductor Billiards"  
R.P. Taylor, **A.P. Micolich**, R. Newbury, T.M. Fromhold, C.R. Tench, J.P. Bird and J. Cooper  
Proceedings of "The Conference on Optoelectronic and Microelectronic Materials and Devices"  
Perth, Australia, 1998.  
Published: *IEEE Optoelectronic and Microelectronic Materials and Devices*, ISBN 0-7803-4513-4, 475,  
(1999).
24. "Temperature Dependence of the Fractal Dimension of Magneto-Conductance Fluctuations in a  
Mesoscopic Semiconductor Billiard"  
**A.P. Micolich**, R.P. Taylor, J.P. Bird, R. Newbury, Y. Aoyagi and T. Sugano  
Proceedings of "The 11<sup>th</sup> International Conference on Superlattices, Microstructures and Microdevices"  
Hurgada, Egypt, 1998.  
Published: *Superlattices and Microstructures* **25**, 157 (1999).
25. "Physical Realisation of Weierstrass Scaling using a Quantum Interferometer"  
**A.P. Micolich**, R.P. Taylor, T.M. Fromhold, C.R. Tench and R. Newbury  
Proceedings of "The 11<sup>th</sup> International Conference on Superlattices, Microstructures and Microdevices"  
Hurgada, Egypt, 1998.  
Published: *Superlattices and Microstructures* **25**, 207 (1999).
26. "Exact and Statistical Self-Similarity in Semiconductor Billiards"  
R.P. Taylor, **A.P. Micolich**, T.M. Fromhold, C.R. Tench, R. Newbury, J.P. Bird, J. Cooper, Y. Aoyagi and  
T. Sugano  
Proceedings of "The 24<sup>th</sup> International Conference on the Physics of Semiconductors"  
Jerusalem, Israel, 1998.  
Published: World Scientific, *ICPS-24 CD*, Chapter VII, A14, (1999).
27. "Scale Factor Mapping of Statistical and Exact Self-Similarity in Billiards"  
**A.P. Micolich**, R.P. Taylor, J.P. Bird, R. Newbury, T.M. Fromhold, J. Cooper, Y. Aoyagi and T. Sugano  
Proceedings of "The 2<sup>nd</sup> International Workshop on Surfaces and Interfaces of Mesoscopic Devices"  
Hawaii, USA, 1997.  
Published: *Semiconductor Science and Technology* **13**, A41 (1998).
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## Patents

1. "Plastic Superconducting Material"  
E. Tavenner, **A.P. Micolich**, P. Meredith, B.J. Powell and R.E. Giedd  
Preliminary Australian Patent Application, Number 2004903516, Filed 29<sup>th</sup> June 2004.

## Other Publications – Abstracts, Unrefereed Conference Proceedings and Minor Papers

1. "Comment on "Drip Paintings and Fractal Analysis" by K. Jones-Smith, H. Mathur and L.M. Krauss (arXiv:0710.4917v2 [cond-mat.stat-mech])"  
**A.P. Micolich**, B.C. Scannell, M.S. Fairbanks, T.P. Martin and R.P. Taylor  
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2. "The Melanins – A Class of Bio-organic Conductor"  
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Proceedings of the "2004 International Conference on Synthetic Metals", Wollongong, Australia, 28<sup>th</sup> June – 2<sup>nd</sup> July 2004.

3. "Stacked Billiards: Examining the Effect of Soft-wall Potential Profile on Fractal Conductance Fluctuations"  
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6. "Fractal Expressionism: A Scientific Analysis of Jackson Pollock's Drip Paintings"  
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8. "Temperature Saturation of Fractal Magneto-Conductance Fluctuations"  
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9. "Fractal Conductance Fluctuations in Mesoscopic Billiards: An Observation Over Three Orders of Magnitude"  
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10. "Fractal Magneto-Conductance in Mesoscopic Billiards: Temperature and Size Dependence"  
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18. "Electron Behaviour in AlGaAs/GaAs Square Quantum Dots"  
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