

I have written 69 papers. I am currently working on three papers which hopefully will be completed soon. In brackets the number of citations are mentioned. Publication #56 has the highest number of citations 67, sources of citations are Google scholar. I have been the lead and/or corresponding author in most of the publications. Applied Physics Letters, Carbon, Physical Review Applied, Nanotechnology, Euro Physics Letters, Scientific Reports and Phys. Rev. B (Rapid Communication) are some of the most highly rated journals in my field and I have a publication in each of them. Total number of citations received by my papers is 726 (source: Google scholar) with an h-index= 16 (hirsch index: 16 papers with ≥ 16 citations) and citations/author ~ 340 .

Book

1. Electron transport and quantum interference at the mesoscopic scale Colin Benjamin LAP LAMBERT Academic Publishing (8 July 2016)

Papers in arXiv undergoing peer review

1. Josephson quantum spin thermodynamics, Subhajit Pal, Colin Benjamin, arXiv:2105.01726.
2. Probing helical vs chiral character of topological superconductors via non-local Hanbury-Brown and Twiss correlations, Tusaradri Mohapatra, Subhajit Pal, Colin Benjamin, arXiv:2103.14920.
3. Magic angle twisted bilayer graphene as a highly efficient quantum Otto engine, Ayush Singh, Colin Benjamin, arXiv:2103.13172.
4. Nash equilibrium mapping vs Hamiltonian dynamics vs Darwinian evolution for some social dilemma games in the thermodynamic limit, Arjun Krishnan U M, Colin Benjamin, arXiv:2103.00295.
5. A thermodynamic probe of the topological phase transition in a Floquet topological insulator, Abhishek Kumar, Colin Benjamin, arXiv:2012.02172.
6. Exciting odd frequency equal spin-triplet correlations at metal-superconductor interfaces, Subhajit Pal, Colin Benjamin, arXiv:2011.06906.
7. Generating highly entangled states via discrete-time quantum walks with Parrondo sequences, B. Varun Govind, Colin Benjamin, arXiv:2008.00909.

8. Testing quantum speedups in exciton transport through a photosynthetic complex using quantum stochastic walks, Pratyush K. Sahoo, Colin Benjamin, arXiv:2004.02938.
9. Is the essence of a quantum game captured completely in the original classical game?, Nilesh Vyas, Colin Benjamin, arXiv:1701.08573.

Published Papers

10. Order from chaos in quantum walks on cyclic graphs, Abhisek Panda, Colin Benjamin, Phys. Rev. A 104, 012204 (2021).
11. Entanglement and quantum strategies reduce congestion costs in quantum Pigou networks, Naini Dudhe, Colin Benjamin, Physica A 574, 126013 (2021).
12. Thermodynamic susceptibility as a measure of cooperative behavior in social dilemmas, Colin Benjamin, Aditya Dash, Chaos 30, 093117 (2020), Impact Factor-2.8, Citations-1.
13. Shot Noise as a probe for the pairing symmetry of Iron pnictide superconductors, Colin Benjamin, Tusaradri Mohapatra, EPL(Euro Phys. Lett.), 132 (2020) 47002, Impact Factor-2.0.
14. Stability of Majorana bound states in the presence of spin-flip scattering, Subhajit Pal, Colin Benjamin, Physica E 126, 114389 (2021), Impact Factor-3.57.
15. Disordered contacts can localize helical edge electrons, Arjun Mani, Colin Benjamin, J. Phys.: Condens. Matter 31, 34LT01 (2019).
16. Disordered contacts can localize chiral edge electrons, Arjun Mani, Colin Benjamin, Journal of Physics and Chemistry of Solids 139, 109313 (2020).
17. Quantized Josephson phase battery, Subhajit Pal, Colin Benjamin, EPL (Euro Physics Letters) 126, 57002 (2019), Impact Factor-2.0, Citations-8.
18. Optimal quantum refrigeration in strained graphene, Arjun Mani, Colin Benjamin, J. Phys. Chem. C 123, 22858 (2019).
19. Entanglement renders free riding redundant in the thermodynamic limit, Shubhayan Sarkar, Colin Benjamin, Physica A 521, 607 (2019).
20. Quantum Nash equilibrium in the thermodynamic limit, Shubhayan Sarkar, Colin Benjamin, Quantum Information Processing 18: 122 (2019).
21. Triggers for cooperative behavior in the thermodynamic limit: a case study in Public goods game, Shubhayan Sarkar, Colin Benjamin, Chaos 29, 053131 (2019).

22. Spin flip scattering engendered quantum spin torque in a Josephson junction, Subhajit Pal, Colin Benjamin, *Proceedings of the Royal Society A* 475: 20180775 (2019).
23. Emergence of Cooperation in the thermodynamic limit, Shubhayan Sarkar, Colin Benjamin, *Chaos, Solitons & Fractals* 135, 109762 (2020).
24. Designing a quantum spin heat engine and refrigerator in strained graphene with giant thermoelectric figure of merit, Arjun Mani, Colin Benjamin, *Scientific Reports* 9: 6018 (2019).
25. Are thermal fluctuations the sole reason for finite longitudinal resistance in quantum anomalous Hall experiments? A. Mani, Colin Benjamin, *J. Phys.: Condens. Matter* 30, 37LT01 (2018).
26. Yu-Shiba-Rusinov bound states induced by a spin flipper in the vicinity of a s-wave superconductor, S. Pal, Colin Benjamin, *Scientific Reports* 8: 11949 (2018).
27. Characterizing a high spin magnetic impurity via Andreev reflection spectroscopy, Subhajit Pal, Colin Benjamin, *European Physical Journal B* 91: 190 (2018).
28. Playing a true Parrondo's game with a three state coin on a quantum walk, Jishnu Rajendran, Colin Benjamin, *EPL (Euro Phys. Lett.)* 122, 40004 (2018). This article has been featured in PHYS.ORG, see Parrondo's paradox with a three-sided coin by Lisa Zyga, Phys.org feature.
<https://phys.org/news/2018-07-parrondo-paradox-three-sided-coin.html>
29. Tuning the $0 - \pi$ Josephson junction with a high spin molecule: Role of tunnel contacts, exchange coupling, electron-electron interactions and high spin states, Subhajit Pal, Colin Benjamin, *Scientific Reports* 8: 5208 (2018)
30. Helical thermoelectrics and refrigeration, Arjun Mani, Colin Benjamin, *Phys. Rev. E* 97, 022114 (2018)
31. Implementing Parrondo's paradox with two coin quantum walks, Jishnu Rajendran, Colin Benjamin, *Royal Society open science* 5, 171599 (2018). This article on seeing a genuine Parrondo's paradox with quantum walks, alongwith the article on "Playing a true Parrondo's game with a three state coin on a quantum walk" by Jishnu and me and published in *EPL (Euro Phys. Lett.)* 122, 40004 (2018) has been featured in Live Science, a website devoted to the science geek, see Weird Paradox Says 2 Losses Equals a Win. And It Could Lead to Fast Quantum Computers by Marcus Woo at <https://www.livescience.com/63142-parrondos-paradox-quantum-computing.html>
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39. Adiabatically twisting a magnetic molecule to generate pure spin currents in graphene, Firoz Islam and Colin Benjamin, J. Phys.: Condens. Matter 28 035305 (2015), Citations-1
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41. Strain designed Josephson π junction qubits with topological insulators, Colin Benjamin, EPL (Europhysics Letters) 110, 50003 (2015), Citations: 2
42. Persistent currents in absence of magnetic field in graphene nano rings: The ambiguous role of inter-valley scattering, Colin Benjamin and A. M. Jayannavar, Applied Physics Letters 104, 053112 (2014), Citations-2
43. How to detect a genuine quantum pump effect in graphene?, Colin Benjamin, Applied Physics Letters 103, 043120 (2013), Citations-9
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49. Controllable π -junction in a Josephson quantum-dot device with molecular spin, Colin Benjamin, T. Jonckheere, A. Zazunov and T. Martin, Eur. Phys. J. B 57, 279 (2007), Citations-32
50. Crossed Andreev reflection as a probe for the pairing symmetry of Ferromagnetic-Superconductors, Colin Benjamin, Phys. Rev. B (Rapid Communication) 74, 180503(R)(2006), Citations-17
51. Detecting a true quantum pump effect, Colin Benjamin, Eur. Phys. J. B 52, 403 (2006), Citations-11
52. Non-local pure spin current injection via quantum pumping and crossed Andreev reflection, Colin Benjamin and Roberta Citro, Phys. Rev. B 72, 085340 (2005), Citations-24
53. Resolving the order parameter of high-Tc superconductors through quantum pumping spectroscopy, Colin Benjamin, Phys. Rev. B 71, 174512 (2005), Citations-2
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62. Wave attenuation model for dephasing and measurement of conditional times, A. M. Jayannavar and Colin Benjamin, Pramana J. Phys. 59, 385 (2002), Citations-2
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Conference papers

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Unpublished Paper

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Work in Progress

70. Noise cross-correlations as a probe of Majorana bound states, Colin Benjamin .
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72. Full counting statistics of the current magnification effect, Colin Benjamin.

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