

# 1 Articles in English

1. Transverse plasmon in two-dimensional electrons,  
Vidar Gudmundsson, Tadashi Toyoda and Yasushi Takahashi,  
*Phys. Lett.* **100A**, 91 (1984).
2. The plateau widths of the quantized Hall conductance,  
Tadashi Toyoda, Vidar Gudmundsson and Yasushi Takahashi,  
*Phys. Lett.* **102A**, 130 (1984).
3. Retarded transverse current-current response functions of a  
two-dimensional electron gas,  
Vidar Gudmundsson, Tadashi Toyoda and Yasushi Takahashi,  
*Physica* **127A**, 529 (1984).
4. The generalized dielectric function of the Tao Thouless superlattice  
model for the anomalous quantized Hall effects,  
Tadashi Toyoda, Vidar Gudmundsson and Yasushi Takahashi,  
*Phys. Lett.* **106A**, 275 (1984).
5. The f-sum rule and Tao Thouless theory for the  
anomalous quantized Hall effects,  
Tadashi Toyoda, Vidar Gudmundsson and Yasushi Takahashi,  
*Phys. Lett.* **108A**, 207 (1985).
6. A microscopic theory of the quantized Hall effects,  
Tadashi Toyoda, Vidar Gudmundsson and Yasushi Takahashi,  
*Physica* **132A**, 164 (1985).
7. Remarks on Laughlin's wavefunction for the anomalous quantized Hall effects,  
Tadashi Toyoda, Vidar Gudmundsson and Yasushi Takahashi,  
*Phys. Lett.* **113A**, 482 (1986).
8. Statistical model for inhomogeneities in a two-dimensional electron gas  
implying a background density of states between Landau levels,  
Rolf R. Gerhardts and Vidar Gudmundsson,  
*Phys. Rev. B* **34**, 2999 (1986).
9. A statistical model for inhomogeneities explaining the apparent density of states be-  
tween the Landau levels of a two-dimensional electron gas,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
"High Magnetic Field in Semiconductor Physics", ed. G. Landwehr, Springer Series  
in Solid State Sciences, Vol. **71**, 67 Springer-Verlag (1986).
10. Interpretation of experiments implying density of states between Landau levels of a  
2DEG by a statistical model for inhomogeneities,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
*Phys. Rev. B* **35**, 8005 (1987).
11. Magnetic field dependence of the gate voltage and current in a  
GaAs-heterostructure in the quantum Hall regime,  
Dieter Weiss, V. Mosser, Vidar Gudmundsson, Rolf R. Gerhardts  
and Klaus v. Klitzing,  
*Solid State Commun.* **62**, 89 (1987).
12. Interpretation of activated resistivity in the quantum Hall regime by a  
statistical model of inhomogeneities,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
*Phys. Rev. B* **37**, 10361 (1988)

13. Magnetic field effects in a confined two-dimensional electron gas:  
a comparison between continuum and lattice model,  
Vidar Gudmundsson, Rolf R. Gerhardts, Robert Johnston and Ludwig Schweitzer,  
*Z. Phys. B* **70**, 453 (1988).
14. Dielectric response of a two-dimensional electron gas in a  
quantizing magnetic field,  
Rolf R. Gerhardts and Vidar Gudmundsson,  
*Solid State Commun.* **67**, 845 (1988).
15. Screening properties of the two-dimensional electron gas  
in the quantum Hall regime,  
Ulrich Wulf, Vidar Gudmundsson and Rolf R. Gerhardts,  
*Phys. Rev. B* **38**, 4218 (1988).
16. Screening properties and density of states of a two-dimensional electron gas in the  
quantum Hall regime,  
Rolf R. Gerhardts, Vidar Gudmundsson and Ulrich Wulf,  
*Proceedings of ICPS-19*, 205, ed. W. Zawadski, Institute of Physics, Polish Academy  
of Sciences, (1988).
17. Density of states and Coulomb interactions in the integer quantum Hall effect,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
"High Magnetic Fields in Semiconductor Physics II", ed.  
G. Landwehr, *Springer Series in Solid State Sciences Vol. 87*, 14, Springer-Verlag  
(1988).
18. Screening of impurities in the quantum Hall regime,  
Vidar Gudmundsson,  
Spectroscopy of Semiconductor Microstructures, NATO ASI Series B **206**, 517 (1989)  
Plenum Press.  
Preprint
19. Oscillating impurity spectra caused by non-linear screening  
in the quantum Hall regime,  
Vidar Gudmundsson,  
*Solid State Commun.* **74**, 63 (1990).
20. A self-consistent model of magnetoplasmons in quantum dots with nearly parabolic  
confinement potentials,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
*Phys. Rev. B* **43**, 12098 (1991).
21. RPA-calculation of magnetoplasmons in quantum dots,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
"High Magnetic Fields in Semiconductor Physics III", ed. G. Landwehr, Springer  
Series in Solid State Sciences Vol. **101**, 343, Springer Verlag (1992).
22. Self-consistent model of magnetoplasmons in quantum dots,  
Vidar Gudmundsson and Rolf R. Gerhardts,  
*Proceedings of the 15th nordic semiconductor conference, Hämeenlinna Finland*, p.  
57, ed's: S. Fransila and R. Paananen. VTT (ISBN 951-47-6261-4) (1992).
23. Comparison of a Hartree, a Hartree-Fock, and an exact Treatment  
of Quantum Dot Helium,  
Daniela Pfannkuche, Vidar Gudmundsson and Peter A. Maksym,  
*Phys. Rev. B* **47**, 2244 (1993).

24. Theory of quantum dot helium,  
 Daniela Pfannkuche, Peter A. Maksym and Vidar Gudmundsson,  
*Physica B* **189**, 6 (1993).
25. Far infrared response of quantum dots: from few electron excitations to magnetoplasmons,  
 Daniela Pfannkuche, Vidar Gudmundsson, Paweł Hawrylak and R. R. Gerhardts,  
*Solid State Electronics* **37**, 1221 (1994).
26. Screening of an impurity in a two dimensional electron gas within the Hartree and the Hartree-Fock approximation in the quantum Hall regime,  
 Vidar Gudmundsson and Gunnar Pálsson,  
*Phys. Rev. B* **49**, 13712 (1994).
27. Enhancement of the g-factor and the spin-density wave state in a confined 2DEG in the quantum Hall regime.  
 Vidar Gudmundsson and Gunnar Pálsson,  
*Physica Scripta T* **54**, 92 (1994). Proceedings of the 16th Nordic Semiconductor Meeting. Ed's H.P. Gislason and Vidar Gudmundsson.  
 Preprint
28. Far-infrared absorption of a confined two-dimensional electron gas with an imbedded Coulomb impurity,  
 Vidar Gudmundsson and Ágústa S. Loftsdóttir,  
*Phys. Rev. B* **50**, 17433 (1994).
29. Bernstein modes in quantum wires and dots,  
 Vidar Gudmundsson, Arne Brataas, Peter Grambow,  
 Bernd Meurer, Thomas Kurth and Detlef Heitmann,  
*Phys. Rev. B* **51**, 17744 (1995).
30. Spin effects in a confined 2DEG: Enhancement of the g-factor, spin-inversion states and their far-infrared absorption,  
 Vidar Gudmundsson and Juan José Palacios,  
*Phys. Rev. B* **52**, 11266 (1995),  
 (cond-mat/9508051).
31. Effects of screening on the Hofstadter butterfly,  
 Vidar Gudmundsson and Rolf R. Gerhardts,  
*Phys. Rev. B* **52**, 16744 (1995),  
 (cond-mat/9509064).
32. The Hofstadter energy spectrum for an interacting 2DEG,  
 Vidar Gudmundsson and Rolf R. Gerhardts,  
*Surface Science* **361/362**, 505 (1996),  
 (cond-mat/9508054).
33. The evolution of Bernstein modes in quantum wires with increasing deviation from parabolic confinement,  
 Arne Brataas, Vidar Gudmundsson, A. G. Mal'shukov and K. A. Chao,  
*J. Phys.: Condens. Matter* **8**, 4797 (1996),  
 (cond-mat/9605079).
34. Hofstadter-type energy spectra in lateral superlattices defined by periodic magnetic and electrostatic fields,  
 Rolf R. Gerhardts, Daniela Pfannkuche and Vidar Gudmundsson,  
*Phys. Rev. B* **53**, 9591 (1996),  
 (cond-mat/9601054).

35. Detection of compressible and incompressible states in quantum dots and antidots by far-infrared spectroscopy,  
 K. Bollweg, T. Kurth, D. Heitmann, V. Gudmundsson, E. Vasiliadou, P. Grambow and K. Eberl,  
*Phys. Rev. Lett.* **76** 2774 (1996).
36. Collective Excitations in Realistic Quantum Wires,  
 Arne Brataas, A. G. Mal'shukov, Vidar Gudmundsson, and K. A. Chao,  
*J. Phys.: Condens. Matter Lett.* **8**, L325 (1996),  
 (cond-mat/9605031).
37. Manifestation of the Hofstadter butterfly in far-infrared absorption,  
 Vidar Gudmundsson and Rolf R. Gerhardts,  
*Phys. Rev. B* **54**, 5223R (1996),  
 (cond-mat/9607015).
38. The effects of compressible and incompressible states on the FIR-absorption of quantum wires and dots in a magnetic field.  
 Vidar Gudmundsson, Arne Brataas, Christoph Steinebach, A. G. Mal'shukov, K. A. Chao, and Detlef Heitmann,  
*Physica Scripta T* **69**, 150 (1997),  
 (cond-mat/9606187).
39. Is the Hofstadter energy spectrum observable in far-infrared absorption?  
 Vidar Gudmundsson and Rolf R. Gerhardts,  
 Proceedings of the 12th International Conference on "High Magnetic Fields in Semiconductor Physics II", Ed's G. Landwehr and W. Ossau p. 335, World Scientific (1997),  
 (cond-mat/9608045).
40. Magnetoplasmon mode in connected quantum-wire pairs,  
 W. R. Frank, A. O. Govorov, J. P. Kotthaus, C. Steinebach, Vidar Gudmundsson, W. Hansen, and M. Holland,  
*Phys. Rev. B* **55**, R1950(R) (1997).
41. Spin-density and charge-density excitations in quantum wires,  
 Arne Brataas, A. G. Mal'shukov, Christoph Steinebach, Vidar Gudmundsson, and K. A. Chao,  
*Phys. Rev. B* **55**, 13161 (1997),  
 (cond-mat/9702236).
42. Far-infrared absorption of acoustic and optical magnetoplasmons in double-layered quantum wires,  
 Christoph Steinebach, Detlef Heitmann, and Vidar Gudmundsson,  
*Phys. Rev. B* **56**, 6742 (1997).
43. Magneto-optics of arrays of quantum dots and antidots ,  
 Vidar Gudmundsson and Sigurdur I. Erlingsson,  
*WOFE'97 Proceedings, IEEE Catalog No. 97TH8292*, 129 (1997).
44. The far-infrared absorption of a periodic 2DEG in the transition regime between weak and strong modulation,  
 Vidar Gudmundsson, Ingibjörg Magnúsdóttir, and Sigurdur I. Erlingsson,  
*Physica E* **1**, 235 (1998),  
 (cond-mat/9710219).

45. Far-Infrared Spectroscopy of Quantum Wires and Dots,  
Breaking Kohn's Theorem,  
Detlef Heitmann, Karsten Bollweg, Vidar Gudmundsson,  
Thomas Kurth, and Siegfried P. Riege,  
*Physica E* **1**, 204 (1998),  
(Preprint)
46. The FIR-absorption of short period quantum wires and  
the transition from one to two dimensions,  
Andrei Manolescu and Vidar Gudmundsson,  
*Phys. Rev. B* **57**, 1668 (1998),  
(cond-mat/9710198).
47. Far-infrared-active collective modes of short-period  
arrays of quantum dots and antidots,  
Vidar Gudmundsson,  
*Phys. Rev. B* **57**, 3989 (1998),  
(Preprint)
48. Collective modes and the far-infrared absorption of the two-dimensional electron gas  
in a periodic quantizing magnetic field,  
Andrei Manolescu and Vidar Gudmundsson,  
*Superlattices and Microstructures* **23**, 1169 (1998),  
(cond-mat/9711186)..
49. Manifestation of the magnetic depopulation of one-dimensional subbands in the op-  
tical absorption of acoustic magnetoplasmons in side-gated quantum wires,  
C. Steinebach, T. Kurth, D. Heitmann, and V. Gudmundsson,  
*Physica B* **249-251**, 617 (1998),  
(cond-mat/9711161).
50. Electron-Spin Resonance in a Quantum Dot,  
R. H. Blick, V. Gudmundsson, R. J. Haug, K. von Klitzing, and K. Eberl,  
*Phys. Rev. B* **57**, R12685 (1998).
51. Collective intersubband spin-density excitations in a quantum wire in a  
magnetic field,  
Arne Brataas, Vidar Gudmundsson, A. G. Mal'shukov, and K. A. Chao,  
*J. Phys.: Condens. Matter* **10**, 4267 (1998)
52. Far-infrared absorption of interaction-induced ground states  
of two weakly coupled quantum wires,  
C. Steinebach, D. Heitmann, and Vidar Gudmundsson,  
*Phys. Rev. B* **58**, 13944 (1998).
53. Memorization of short-range potential fluctuations in Landau levels,  
Andrei Manolescu and Vidar Gudmundsson,  
*Phys. Rev. B* **59**, 5426 (1999),  
(cond-mat/9809072).
54. Influence of the shape of quantum dots on their far-infrared absorption,  
Ingibjörg Magnúsdóttir and Vidar Gudmundsson,  
*Phys. Rev. B* **60**, 16591 (1999),  
(cond-mat/9907216).
55. Spectroscopy of few-electron quantum dots,  
D. Heitmann V. Gudmundsson, L. Rolf, C. Schüller,

C. Steinebach, and E. Ulrichs,  
*Acta Physica Polonica A* **96**, 545 (1999).

56. Finite-size effects in the magnetization of periodic mesoscopic systems,  
Sigurdur I. Erlingsson, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **6**, 763 (2000),  
(cond-mat/9908259).
57. Magnetization in short-period mesoscopic electron systems,  
Vidar Gudmundsson, Sigurdur I. Erlingsson, and Andrei Manolescu,  
*Phys. Rev. B* **61**, 4835 (2000),  
(cond-mat/9910479v2).
58. Magnetization of noncircular quantum dots,  
Ingibjörg Magnúsdóttir and Vidar Gudmundsson  
*Phys. Rev. B* **61**, 10229 (2000),  
(cond-mat/9909423).
59. Hysteresis effect due to the exchange Coulomb interaction in  
short-period superlattices in tilted magnetic fields,  
Andrei Manolescu and Vidar Gudmundsson,  
*Phys. Rev. B* **61**, R7858 (2000),  
(cond-mat/0002008).
60. Origin of Landau oscillations observed in scanning tunneling  
spectroscopy on n-InAs(110),  
M. Morgenstern, D. Haude, V. Gudmundsson, Chr. Wittneven,  
R. Dombrowski, and R. Wiesendanger,  
*Phys. Rev. B* **62**, 7257 (2000).
61. Low temperature scanning tunneling spectroscopy  
on InAs(110),  
M. Morgenstern, D. Haude, V. Gudmundsson, Chr. Wittneven,  
R. Dombrowski, and R. Wiesendanger,  
*J. Electr. Spectro. Rel. Phen.* **109**, 127 (2000).
62. Nonlocality of the exchange interaction probed by  
scanning tunneling spectroscopy,  
M. Morgenstern, V. Gudmundsson, R. Dombrowski  
Chr. Wittneven, and R. Wiesendanger,  
*Phys. Rev. B* **63**, 201301(R) (2001).
63. Far-Infrared Excitations below the Kohn Mode:  
Internal Motion in a Quantum Dot  
Roman Krahne, Vidar Gudmundsson, Christian Heyn, and Detlef Heitmann,  
*Phys. Rev. B* **63**, 195303 (2001),  
(cond-mat/0102005).
64. Enhanced magnetization at integer quantum Hall states  
I. Meinel, D. Grundler, D. Heitmann, A. Manolescu,  
V. Gudmundsson, W. Wegscheider, and M. Bichler,  
*Phys. Rev. B* **64**, 121306(R) (2001).
65. Inter-Dot Interaction in an Array of Elliptical Quantum Dots,  
Roman Krahne, Vidar Gudmundsson, Christian Heyn, and Detlef Heitmann,  
*Physica E* **12/1-4**, 892 (2001),  
(preprint).

66. Hartree-Fock dynamics in highly excited quantum dots  
 Antonio Puente, Llorenç Serra, and Vidar Gudmundsson  
*Phys. Rev. B* **64**, 235324 (2001),  
 (cond-mat/0108428).
67. Excitations below the Kohn Mode; FIR-Absorption in Quantum Dots,  
 Vidar Gudmundsson, Roman Krahne, Christian Heyn, and Detlef Heitmann,  
*Physica Scripta* **T101**, 136 (2002).
68. From single dots to interacting arrays,  
 Vidar Gudmundsson, Andrei Manolescu, Roman Krahne, and Detlef Heitmann,  
 “*Nano-Physics and Bio-Electronics; A new Odyssey*”, edited by T. Chakraborty, F. Peeters, and U. Sivan, Elsevier Co, ISBN/ISSN: 0-444-50993-3 0444509933, 213- (2002),  
 (cond-mat/0110323).
69. Far infrared spectroscopy of tailored quantum wires, quantum dots, and antidot arrays,  
 D. Heitmann, V. Gudmundsson, M. Hochgräfe, R. Krahne, and D. Pfannkuche  
*Physica E* **14**, 37 (2002).
70. Characterization of Bernstein modes in quantum dots,  
 Manuel Valín-Rodríguez, Antonio Puente, Llorenç Serra,  
 Vidar Gudmundsson, Andrei Manolescu,  
*European Physical Journal B* **28**, 111 (2002),  
 (cond-mat/0205345).
71. Orbital and spin magnetization of a confined electronic system in the transition between a quantum dot and a ring,  
 Gabriel Vasile, Vidar Gudmundsson, and Andrei Manolescu,  
 Physics of Semiconductors 2002, Proceedings of the 15th International Conference on High Magnetic Fields in Semiconductor Physics, Oxford, 5-9 August 2002, Institute of Physics Conference Series 171, A-11, Editors; A. R. Long and J. H. Davies, IOP (Bristol - Philadelphia) (2003).  
 (cond-mat/0207361).
72. The orbital magnetization of single and double quantum dots in a tight binding model,  
 A. Aldea, V. Moldoveanu, M. Nita, A. Manolescu, V. Gudmundsson, B. Tanatar,  
*Phys. Rev. B* **67**, 035324 (2003),  
 (cond-mat/0207307).
73. Non-adiabatic current generation in a finite width semiconductor ring,  
 Vidar Gudmundsson, Chi-Shung Tang, Andrei Manolescu,  
*Phys. Rev. B* **67**, 161301(R) (2003),  
 (cond-mat/0301020).
74. Impurity and spin effects on the magneto-spectroscopy of a THz-modulated nanostructure,  
 Vidar Gudmundsson, Chi-Shung Tang, Andrei Manolescu,  
*Phys. Rev. B* **68**, 165343 (2003),  
 (cond-mat/0304571).
75. Non-adiabatic Current Excitation in Quantum Rings,  
 S. S. Gylfadottir, V. Gudmundsson, C. S. Tang, and A. Manolescu,  
*Physica Scripta* **T114**, 41 (2004),  
 (cond-mat/0309661).

76. Coherent electronic transport in a multimode quantum channel with Gaussian-type scatterers,  
 Jens Hjorleifur Bardarson, Ingibjorg Magnusdottir, Gudny Gudmundsdottir,  
 Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **70**, 245308,(2004),  
 (cond-mat/0408435),  
 (High resolution preprint version).
77. Net current generation in a 1D quantum ring at zero magnetic field,  
 Sigridur Sif Gylfadottir, Marian Nita, Vidar Gudmundsson, Andrei Manolescu,  
*Physica E* **27**, 278 (2005),  
 (cond-mat/0402582).
78. Multi-mode transport through a quantum nanowire with two embedded dots,  
 Vidar Gudmundsson, Gudny Gudmundsdottir, Jens Hjorleifur Bardarson,  
 Ingibjorg Magnusdottir, Chi-Shung Tang, Andrei Manolescu,  
*The European Physical Journal B* **45**, 339 (2005),  
 (cond-mat/0411378),  
 (High resolution preprint version).
79. Transport through a quantum ring, a dot and a barrier  
 embedded in a nanowire in magnetic field,  
 Vidar Gudmundsson, Yu-Yu Lin, Chi-Shung Tang, Valeriu Moldoveanu,  
 Jens Hjorleifur Bardarson, and Andrei Manolescu,  
*Phys. Rev. B* **71**, 235302 (2005),  
 (cond-mat/0412402),  
 (High resolution preprint version).
80. The Fano regime of one-dot Aharonov-Bohm interferometers,  
 Valeriu Moldoveanu, Mugurel Tolea, Vidar Gudmundsson, Andrei Manolescu,  
*Phys. Rev. B* **72**, 085338 (2005),  
 (cond-mat/0501381).
81. A state with negative binding energy induced by  
 coherent transport in a quantum wire,  
 Vidar Gudmundsson, Chi-Shung Tang, and Andrei Manolescu,  
*Phys. Rev. B* **72**, 153306 (2005),  
 (cond-mat/0506009),  
 (High resolution preprint version).
82. Tuning of coupling modes in laterally parallel double open quantum dots,  
 Chi-Shung Tang, Wing Wa Yu, and Vidar Gudmundsson,  
*Phys. Rev. B* **72**, 195331 (2005),  
 (cond-mat/0507721),  
 (High resolution preprint version).
83. Magnetotransport in a double quantum wire: Modeling using a  
 scattering formalism built on the Lippmann-Schwinger equation,  
 Vidar Gudmundsson and Chi-Shung Tang,  
*Phys. Rev. B* **74**, 125302 (2006),  
 (cond-mat/0606480),  
 (High resolution preprint version).
84. Coherent magnetotransport spectroscopy in an edge-blocked  
 double quantum wire with window and resonator coupling,  
 Chi-Shung Tang and Vidar Gudmundsson,  
*Phys. Rev. B* **74**, 195323 (2006),

(cond-mat/0608027),  
(High resolution preprint version).

85. Transient regime in non-linear transport through many-level quantum dots,  
Valeriu Moldoveanu, Vidar Gudmundsson, and Andrei Manolescu,  
*Phys. Rev. B* **76**, 085330 (2007),  
(cond-mat/0703179).
86. Non-adiabatic transport in a quantum dot turnstile,  
Valeriu Moldoveanu, Vidar Gudmundsson, and Andrei Manolescu,  
*Phys. Rev. B* **76**, 165308 (2007),  
(arXiv:0706.0968).
87. Time-dependent magnetotransport of a wave packet in a quantum wire  
with embedded quantum dots,  
Gunnar Thorgilsson, Chi-Shung Tang, and Vidar Gudmundsson,  
*Phys. Rev. B* **76**, 195314 (2007),  
(arXiv:0708.0103).
88. Transient magnetotransport through a quantum wire,  
Vidar Gudmundsson, Gunnar Thorgilsson, Chi-Shung Tang, and Valeriu Moldoveanu,  
*Phys. Rev. B* **77**, 035329 (2008),  
(arXiv:0710.3289).
89. Coherent switching by detuning a side-coupled quantum-dot system,  
Omar Valsson, Chi-Shung Tang, and Vidar Gudmundsson,  
*Phys. Rev. B* **78**, 165318 (2008),  
(arXiv:0807.4865).
90. Geometrical effects and signal delay in time-dependent transport at the nanoscale,  
Valeriu Moldoveanu, Andrei Manolescu, and Vidar Gudmundsson,  
*New Journal of Physics* **11**, 073019 (2009),  
(arXiv:0807.4015).
91. Time-dependent transport via the generalized master equation  
through a finite quantum wire with an embedded subsystem,  
Vidar Gudmundsson, Cosmin Gainar, Chi-Shung Tang, Valeriu Moldoveanu, and  
Andrei Manolescu,  
*New Journal of Physics* **11**, 113007 (2009),  
(arXiv:0903.3491).
92. Coherent magnetotransport and time-dependent transport  
through split-gated quantum constrictions,  
Kristinn Torfason, Chi-Shung Tang, and Vidar Gudmundsson,  
*Phys. Rev. B* **80**, 195322 (2009),  
(arXiv:0907.5262).
93. Theoretical investigation of modulated currents in open nanostructures,  
Valeriu Moldoveanu, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **80**, 205325 (2009),  
(arXiv:0909.0815).
94. Coulomb interaction and transient charging of excited states in open nanosystems,  
Valeriu Moldoveanu, Andrei Manolescu, Chi-Shung Tang, and Vidar Gudmundsson,  
*Phys. Rev. B* **81**, 155442 (2010),  
(arXiv:1001.0047).

95. Correlated time-dependent transport through a 2D quantum structure,  
 Vidar Gudmundsson, Chi-Shung Tang, Olafur Jonasson, Valeriu Moldoveanu, and  
 Andrei Manolescu,  
*Phys. Rev. B* **81**, 205319 (2010),  
 (arXiv:1002.1556).
96. Dynamic correlations induced by Coulomb interactions in coupled quantum dots,  
 Valeriu Moldoveanu, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **82**, 085311 (2010),  
 (arXiv:1005.3860).
97. Time-dependent magnetotransport in an interacting double quantum wire with window coupling,  
 Nzar Rauf Abdullah, Chi-Shung Tang, and Vidar Gudmundsson,  
*Phys. Rev. B* **82**, 195325 (2010),  
 (arXiv:1008.4053).
98. Non-adiabatic generation of a pure spin current in a 1D quantum ring with spin-orbit interaction,  
 Marian Niță, D. C. Marinescu, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **83**, 155427 (2011),  
 (arXiv:1012.4952).
99. Time-dependent magnetotransport in semiconductor nanostructures via the generalized master equation,  
 Vidar Gudmundsson, Chi-Shung Tang, Cosmin Mihai Gainar,  
 Valeriu Moldoveanu, and Andrei Manolescu,  
*Computer Physics Communications* **182**, 46 (2011),  
 (arXiv:1002.1579).
100. Magnetotransport in a time-modulated double quantum point contact system,  
 Chi-Shung Tang, Kristinn Torfason, and Vidar Gudmundsson,  
*Computer Physics Communications* **182**, 65 (2011),  
 (arXiv:1002.1551).
101. Turnstile pumping through an open quantum wire,  
 Cosmin Mihai Gainar, Valeriu Moldoveanu, Andrei Manolescu,  
 and Vidar Gudmundsson,  
*New Journal of Physics* **13**, 013014 (2011),  
 (arXiv:1004.4052).
102. Electronic charge and spin density distribution in a quantum ring with spin-orbit and Coulomb interactions,  
 Csaba Daday, Andrei Manolescu, D. C. Marinescu, Vidar Gudmundsson,  
*Phys. Rev. B* **84**, 115311 (2011),  
 (arXiv:1106.3697).
103. Coulomb effects on the spin polarization of quantum rings,  
 Andrei Manolescu, Csaba Daday, and Vidar Gudmundsson,  
*Nanosystems: Physics, Chemistry, Mathematics*, **2**, 29 (2011).
104. Nonlinear interference in a mean-field quantum model,  
 Gilbert Reinisch and Vidar Gudmundsson,  
*The European Physical Journal B* **84**, 699 (2011),  
 (arXiv:1007.2408).

105. Quantum magneto-electrodynamics of electrons embedded in a photon cavity,  
 Olafur Jonasson, Chi-Shung Tang, Hsi-Sheng Goan, Andrei Manolescu,  
 and Vidar Gudmundsson,  
*New Journal of Physics*, **14**, 013036 (2012),  
 (arXiv:1109.4594).
106. Time-dependent transport of electrons through a photon cavity,  
 Vidar Gudmundsson, Olafur Jonasson, Chi-Shung Tang,  
 Hsi-Sheng Goan, and Andrei Manolescu,  
*Phys. Rev. B* **85**, 075306 (2012),  
 (arXiv:1109.4728).
107. Nonlinear Schroedinger-Poisson Theory for Quantum-Dot Helium  
 Gilbert Reinisch and Vidar Gudmundsson,  
*Physica D* **241**, 902 (2012),  
 (arXiv:0906.4650).
108. Generalized Master equation approach to mesoscopic time-dependent transport,  
 Kristinn Torfason, Andrei Manolescu, Valeriu Moldoveanu, Vidar Gudmundsson,  
*J. Phys.: Conf. Ser.* **338**, 012017 (2012),  
 (arXiv:1109.2301).
109. Reduction of ballistic spin scattering in a spin-FET using stray electric fields,  
 G. A. Nemnes, A. Manolescu and V. Gudmundsson,  
*J. Phys.: Conf. Ser.* **338**, 012012 (2012).
110. Nonadiabatic generation of spin currents in a quantum ring  
 with Rashba and Dresselhaus spin-orbit interactions,  
 Marian Nita, D. C. Marinescu, Bogdan Ostahie,  
 Andrei Manolescu, Vidar Gudmundsson,  
*J. Phys.: Conf. Ser.* **338**, 012013 (2012),  
 (arXiv:1109.2572).
111. Excitation of collective modes in a quantum flute,  
 Kristinn Torfason, Andrei Manolescu, Valeriu Moldoveanu,  
 and Vidar Gudmundsson,  
*Phys. Rev. B* **85**, 245114 (2012),  
 (arXiv:1202.0566).
112. Persistent charge and spin currents in a 1D ring with Rashba and Dresselhaus spin-orbit interactions by excitation with a terahertz pulse,  
 Marian Niță, D. C. Marinescu, Andrei Manolescu, Bogdan Ostahie,  
 and Vidar Gudmundsson,  
*Physica E* **46**, 12 (2012),  
 (arXiv:1111.2949).
113. Nonperturbative Approach to Circuit Quantum Electrodynamics,  
 Olafur Jonasson, Chi-Shung Tang, Hsi-Sheng Goan,  
 Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. E* **86**, 046701 (2012),  
 (arXiv:1203.5980).
114. Coulomb Interaction Effects on the Spin Polarization and Currents  
 in Quantum Wires with Spin Orbit Interaction,  
 Anton Heidar Thorolfsson, Andrei Manolescu, D. C. Marinescu,  
 and Vidar Gudmundsson,  
*Nanoscale Systems: Mathematical Modeling, Theory and Applications* **1**, 23 (2012).

115. Symmetric excitation and de-excitation of a cavity QED system,  
 Olafur Jonasson, Chi-Shung Tang, Hsi-Sheng Goan,  
 Andrei Manolescu, and Vidar Gudmundsson,  
*The European Physical Journal B* **86**, 291 (2013),  
 (arXiv:1207.6797).
116. Magnetic-field influenced non-equilibrium transport through a quantum ring  
 with correlated electrons in a photon cavity,  
 Thorsten Arnold, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **87**, 035314 (2013),  
 (arXiv:12079.2888).
117. Stepwise introduction of model complexity in a generalized master equation  
 approach to time-dependent transport,  
 Vidar Gudmundsson, Olafur Jonasson, Thorsten Arnold,  
 Chi-Shung Tang, Hsi-Sheng Goan, and Andrei Manolescu,  
*Fortschritte der Physik* **61**, no 2-3, 305 (2013),  
 (arXiv:1203.3048).
118. Thermoelectric Current and Coulomb-Blockade Plateaus in a Quantum Dot,  
 Kristinn Torfason, Andrei Manolescu, Sigurdur I. Erlingsson,  
 and Vidar Gudmundsson,  
*Physica E* **53**, 178 (2013),  
 (arXiv:1303.3160).
119. Snaking states on a cylindrical surface in a perpendicular magnetic field,  
 Andrei Manolescu, Tomas Orn Rosdahl, Sigurdur Erlingsson, Llorens Serra,  
 and Vidar Gudmundsson,  
*The European Physical Journal B* **86**, 445 (2013),  
 (arXiv:1305.5577).
120. Electron transport through a quantum dot assisted by cavity photons,  
 Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*The Journal of Physics: Condensed Matter* **25**, 465302 (2013),  
 (arXiv:1308.4536).
121. Impact of a circularly polarized cavity photon field on the charge and spin flow  
 through an Aharonov-Casher ring,  
 Thorsten Arnold, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **60**, 170 (2014),  
 (arXiv:1311.3235).
122. Coherent Nonlinear Quantum Model for Composite Fermions,  
 Gilbert Reinisch, Vidar Gudmundsson, and Andrei Manolescu,  
*Physics Letters A* **378**, 1566 (2014),  
 (arXiv:1306.6869).
123. Effects of geometry and linearly polarized cavity photons on the charge and spin  
 currents in a quantum ring with spin-orbit interactions,  
 Thorsten Arnold, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*The European Physical Journal B* **87**, 113 (2014),  
 (arXiv:1310.5870).
124. Excitation of radial collective modes in a quantum dot: Beyond linear response,  
 Vidar Gudmundsson, Sigtryggur Hauksson, Arni Johnsen, Gilbert Reinisch, Andrei  
 Manolescu, Christophe Besse, and Guillaume Dujardin,  
*Annalen der Physik* **526**, 235 (2014),  
 (arXiv:1311.3252).

125. Spin and impurity effects on flux-periodic oscillations in core-shell nanowires,  
Tomas Orn Rosdahl, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **90**, 035421 (2014),  
(arXiv:1404.1798).
126. Delocalization of electrons by cavity photons in transport through a quantum dot molecule,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **64**, 254 (2014),  
(arXiv:1403.0382).
127. Cavity-photon-switched coherent transient transport in a double quantum waveguide,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Journal of Applied Physics* **116**, 233104 (2014),  
(arXiv:1410.4890).
128. Excitation spectra of a quantum ring embedded in a photon cavity,  
Thorsten Arnold, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Journal of Optics* **17**, 015201 (2015),  
(arXiv:1410.0174).
129. Coherent transient transport of interacting electrons through a quantum waveguide switch,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*The Journal of Physics: Condensed Matter* **27**, 015301 (2015),  
(arXiv:1408.1007).
130. Signature of snaking states in the conductance of core-shell nanowires,  
Tomas Orn Rosdahl, Andrei Manolescu, Vidar Gudmundsson,  
*Nano Letters* **15**, 254 (2015),  
(arXiv:1409.3429).
131. Double-finger-gate controlled spin-resolved resonant quantum transport in the presence of a Rashba-Zeeman gap,  
Chi-Shung Tang, Shu-Ting Tseng, Vidar Gudmundsson, Shun-Jen Cheng,  
*The Journal of Physics: Condensed Matter* **27**, 085801 (2015),  
(arXiv:1407.2369).
132. Coupled collective and Rabi oscillations triggered by electron transport through a photon cavity,  
Vidar Gudmundsson, Anna Sitek, Pei-yi Lin, Nzar Rauf Abdullah, Chi-Shung Tang, and Andrei Manolescu,  
*ACS Photonics* **2**, 930 (2015),  
(arXiv:1502.06242).
133. Electron localization and optical absorption of polygonal quantum rings,  
Anna Sitek, Llorenç Serra, Vidar Gudmundsson, and Andrei Manolescu,  
*Phys. Rev. B* **91**, 235429 (2015),  
(arXiv:1503.09186).
134. Symmetry dependent electron localization and optical absorption of polygonal quantum rings,  
Anna Sitek, Vidar Gudmundsson, and Andrei Manolescu,  
*Transparent Optical Networks (ICTON)*, 17th International Conference on, 5-9 July (2015),  
(arXiv:1505.00207).

135. Cavity-photon controlled thermoelectric transport through a quantum wire,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*ACS Photonics* **3**, 249 (2016),  
(arXiv:1507.06574).
136. Cavity-photon contribution to the effective interaction of electrons in parallel quantum dots,  
Vidar Gudmundsson, Anna Sitek, Nzar Rauf Abdullah, Chi-Shung Tang,  
and Andrei Manolescu,  
*Annalen der Physik* **528**, 394 (2016),  
(arXiv:1505.03181).
137. Multi-domain electromagnetic absorption of triangular quantum rings,  
Anna Sitek, Gunnar Thorgilsson, Vidar Gudmundsson, and Andrei Manolescu,  
*Nanotechnology* **27**, 225202 (2016),  
(arXiv:1511.05596).
138. Conductance oscillations of core-shell nanowires in transversal magnetic fields,  
Andrei Manolescu, George Alexandru Nemnes, Anna Sitek, Tomas Orn Rosdahl,  
Sigurdur Ingi Erlingsson, and Vidar Gudmundsson,  
*Phys. Rev. B* **93**, 205445 (2016),  
(arXiv:1601.01477).
139. Competition of static magnetic and dynamic photon forces in electronic transport through a quantum dot,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*The Journal of Physics: Condensed Matter* **28**, 375301 (2016),  
(arXiv:1512.00392).
140. Optical switching of electron transport in a waveguide-QED system,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **84**, 280 (2016),  
(arXiv:1602.04979)
141. Electronic states in core-shell quantum rings,  
Anna Sitek, Gunnar Thorgilsson, Vidar Gudmundsson, and Andrei Manolescu,  
Transparent Optical Networks (ICTON), 18th International Conference on, July 10-14, pp. 1-4. (2016).
142. Regimes of radiative and nonradiative transitions in transport through an electronic system in a photon cavity reaching a steady state,  
Vidar Gudmundsson, Thorsteinn H. Jonsson, Maria Laura Bernodusson, Nzar Rauf Abdullah, Anna Sitek, Hsi-Sheng Goan, Chi-Shung Tang, and Andrei Manolescu,  
*Annalen der Physik* **529**, No. 1-2, 1600177 (2017),  
(arXiv:1605.08248)
143. In-gap corner states in core-shell polygonal quantum rings,  
Anna Sitek, Mugurel Tolea, Marian Nita, Llorenç Serra, Vidar Gudmundsson, Andrei Manolescu,  
*Scientific Reports* **7**, 40197 (2017),  
(arXiv:1607.02107)
144. Spin magneto-transport in a Rashba–Dresselhaus quantum channel with single and double finger gates,  
Chi-Shung Tang, Jia-An Keng, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physics Letters A* **381**, 1529 (2017),  
(arXiv:1612.05899)

145. Time-dependent current into and through multilevel parallel quantum dots in a photon cavity,  
 Vidar Gudmundsson, Nzor Rauf Abdullah, Anna Sitek, Hsi-Sheng Goan, Chi-Shung Tang, and Andrei Manolescu,  
*Phys. Rev. B* **95**, 195307 (2017),  
 (arXiv:1611.09453)
146. Efficient determination of the Markovian time-evolution towards a steady-state of a complex open quantum system,  
 Thorsteinn H. Jonsson, Andrei Manolescu, Hsi-Sheng Goan, Nzor Rauf Abdullah, Anna Sitek, Chi-Shung Tang, and Vidar Gudmundsson,  
*Computer Physics Communications* **220**, 81 (2017),  
 (arXiv:1610.03223)
147. Controlled Coulomb effects in core-shell quantum rings,  
 Anna Sitek, Miguel Urbaneja Torres, Kristinn Torfason, Vidar Gudmundsson, Andrei Manolescu,  
*19th International Conference on Transparent Optical Networks (ICTON)*, 1-4 (2017),  
 (arXiv:1704.06136)
148. Majorana states in prismatic core-shell nanowires,  
 Andrei Manolescu, Anna Sitek, Javier Osca, Llorenç Serra, Vidar Gudmundsson, Tudor D. Stanescu,  
*Phys. Rev. B* **96**, 125435 (2017),  
 (arXiv:1705.04950)
149. Transport signatures of top-gate bound states with strong Rashba-Zeeman effect,  
 Chi-Shung Tang, Yun-Hsuan Yu, Nzor Rauf Abdullah, Vidar Gudmundsson,  
*Physics Letters A* **381**, 3960 (2017),  
 (arXiv:1708.07307)
150. Spin-dependent heat and thermoelectric currents in a Rashba ring coupled to a photon cavity,  
 Nzor Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, Vidar Gudmundsson,  
*Physica E* **95**, 102 (2018),  
 (arXiv:1707.08416)
151. Effects of photon field on heat transport through a quantum wire attached to leads,  
 Nzor Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Physics Letters A* **382**, 199 (2018),  
 (arXiv:1711.01210)
152. Electroluminescence caused by the transport of interacting electrons through parallel quantum dots in a photon cavity,  
 Vidar Gudmundsson, Nzor Rauf Abdullah, Anna Sitek, Hsi-Sheng Goan, Chi-Shung Tang, and Andrei Manolescu,  
*Annalen der Physik* **530**, 1700334 (2018),  
 (arXiv:1706.03483)
153. Magneto-Optical Quantum Interferences in a System of Spinor Excitons,  
 Wen-Hsuan Kuan and Vidar Gudmundsson,  
*Physica E* **98**, 125 (2018),  
 (arXiv:1705.09072)
154. Photon-induced tunability of the thermospin current in a Rashba ring,  
 Nzor Rauf Abdullah, Thorsten Arnold, Chi-Shung Tang, Andrei Manolescu, Vidar Gudmundsson,

*The Journal of Physics: Condensed Matter* **30**, 145303 (2018),  
(arXiv:1712.03386)

155. Current correlations for the transport of interacting electrons through parallel quantum dots in a photon cavity,  
Vidar Gudmundsson, Nzar Rauf Abdullah, Anna Sitek, Hsi-Sheng Goan, Chi-Shung Tang, and Andrei Manolescu,  
*Physics Letters A* **382**, 1672 (2018),  
(arXiv:1707.08295)
156. Spin-Dependent Transport Signatures of Bound States: From Finger to Top Gates,  
Yun-Hsuan Yu, Chi-Shung Tang, Nzar Rauf Abdullah, Vidar Gudmundsson,  
WASET Proceedings of ICSSE 2018, *Int. Journ. of Electronics and Commun. Eng.* **12**, 134 (2018).
157. Excitons in core-shell nanowires with polygonal cross sections,  
Anna Sitek, Miguel Urbaneja Torres, Kristinn Torfason, Sigurdur Ingi Erlingsson,  
Vidar Gudmundsson, Andrea Bertoni, and Andrei Manolescu,  
*Nano Letters* **18**, 2581 (2018).
158. Radiated fields by polygonal core-shell nanowires,  
Miguel Urbaneja Torres, Anna Sitek, Vidar Gudmundsson, and Andrei Manolescu,  
20th International Conference on Transparent Optical Networks (ICTON), 1-5 July,  
(2018),  
(arXiv:1804.07959)
159. Conductance features of core-shell nanowires determined by the internal geometry,  
Miguel Urbaneja Torres, Anna Sitek, Sigurdur I. Erlingsson, Gunnar Thorgilsson,  
Vidar Gudmundsson, Andrei Manolescu,  
*Phys. Rev. B* **98**, 085419 (2018),  
(arXiv:1805.10929)
160. Single-photon controlled thermospin transport in a resonant ring-cavity system,  
Nzar Rauf Abdullah and Vidar Gudmundsson,  
*Physica E* **104**, 223 (2018),  
(arXiv:1806.09212)
161. Coexisting spin and Rabi-oscillations at intermediate time in electron transport through  
a photon cavity,  
Vidar Gudmundsson, Hallmann Gestsson, Nzar Rauf Abdullah, Chi-Shung Tang,  
Andrei Manolescu, and Valeriu Moldoveanu,  
*Beilstein Journal of Nanotechnology* **10**, 606 (2019),  
(arXiv:1809.06930)
162. Thermoelectric inversion in a resonant quantum dot-cavity system in the steady-state  
regime,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Nanomaterials* **9**, 741 (2019),  
(arXiv:1812.05665)
163. Manifestation of the Purcell effect in current transport through a dot-cavity-QED  
system,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, Vidar Gudmundsson,  
*Nanomaterials* **9**, 1023 (2019),  
(arXiv:1905.07492)

164. Generalized master equation approach to time-dependent many-body transport,  
Valeriu Moldoveanu, Andrei Manolescu, and Vidar Gudmundsson,  
*Entropy* **21**, 731 (2019),  
(arXiv:1908.00354)
165. Cavity-photon induced high order transitions between ground states of quantum dots,  
Vidar Gudmundsson, Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and  
Valeriu Moldoveanu,  
*Annalen der Physik* **531**, 1900306 (2019),  
(arXiv:1905.10883)
166. Silicon on graphene nanosheet with triangle- and dot-shape: Electronic structure,  
specific heat, and thermal conductivity from first-principle calculations,  
Nzar Abdullah, Hunar Rashid, and Vidar Gudmundsson,  
*Results in Physics* **15**, 102625 (2019),  
(arXiv:1908.10614)
167. Back-action effects in cavity-coupled quantum conductors,  
Valeriu Moldoveanu, I. V. Dinu, Andrei Manolescu, and Vidar Gudmundsson,  
*Phys. Rev. B* **100**, 125416 (2019),  
(arXiv:1909.03630)
168. The photocurrent generated by photon replica states of an off-resonantly coupled  
dot-cavity system,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Scientific Reports* **9**, 14703 (2019),  
(arXiv:1904.04888)
169. The interplay of electron-photon and cavity-environment coupling on the electron  
transport through a quantum dot system,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, Vidar Gudmundsson,  
*Physica E* **119**, 113996 (2020),  
(arXiv:1908.05712)
170. Effects of bonded and non-bonded B/N codoping of graphene on its stability, inter-  
action energy, electronic structure, and power factor,  
Nzar Rauf Abdullah, Hunar Omar Rashid, Mohammad T. Kareem, Chi-Shung Tang,  
Andrei Manolescu, and Vidar Gudmundsson,  
*Physics Letters A* **384**, 126350 (2020),  
(arXiv:2002.11377)
171. Oscillations in electron transport caused by multiple resonances in a quantum dot-  
QED system in the steady-state regime,  
Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **123**, 114221 (2020),  
(arXiv:1903.03655)
172. Electronic, thermal, and optical properties of graphene like  $\text{SiC}_x$  structures: Signifi-  
cant effects of Si atom configurations,  
Nzar Rauf Abdullah, Gullan Ahmed Mohammed, Hunar Omar Rashid, and Vidar  
Gudmundsson,  
*Physics Letters A* **384**, 126578 (2020),  
(arXiv:2004.01013)
173. Modeling electronic, mechanical, optical and thermal properties of graphene-like  
 $\text{BC}_6\text{N}$  materials: Role of prominent BN-bonds,

- Nzar Rauf Abdullah, Hunar Omar Rashid, Andrei Manolescu, and Vidar Gudmundsson,  
*Physics Letters A* **384**, 126807 (2020),  
(arXiv:2003.08467)
174. Interlayer interaction controlling the properties of AB- and AA-stacked bilayer graphene-like  $\text{BC}_{14}\text{N}$  and  $\text{Si}_2\text{C}_{14}$ ,  
Nzar Rauf Abdullah, Hunar Omar Rashid, Andrei Manolescu, and Vidar Gudmundsson,  
*Surfaces and Interfaces* **21**, 100740 (2020),  
(arXiv:2008.10888)
175. Topological Phases Beyond the Hofstadter Butterfly,  
Vidar Gudmundsson,  
*Physics* **13**, viewpoint 187 (2020).
176. Self-induction and magnetic effects in electron transport through a photon cavity,  
Vidar Gudmundsson, Nzar Rauf Abdullah, Chi-Shung Tang, Andrei Manolescu, and Valeriu Moldoveanu,  
*Physica E* **127**, 114544 (2021),  
(arXiv:2005.10914)
177. Properties of  $\text{BSi}_6\text{N}$  monolayers derived by first-principle computation,  
Nzar Rauf Abdullah, Hunar Omar Rashid, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **127**, 114556 (2021),  
(arXiv:2008.03782)
178. Spin-polarised DFT modeling of electronic, magnetic, thermal and optical properties of silicene doped with transition metals,  
Nzar Rauf Abdullah, Mohammad T. Kareem, Hunar Omar Rashid, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica E* **129**, 114644 (2021),  
(arXiv:2009.14804)
179. Role of interlayer spacing on electronic, thermal and optical properties of BN-codoped bilayer graphene: Influence of the interlayer and the induced dipole-dipole interactions,  
Nzar Rauf Abdullah, Hunar Omar Rashid, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Journal of Physics and Chemistry of Solids* **155**, 110095 (2021),  
(arXiv:2102.09543)
180. Bound state energy of finger gate and top gate with consideration of Rashba-Dresselhaus-Zeeman effects,  
Zhong-Xian Zhuang, Chi-Shung Tang, Quoc-Hung Phan, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physics Letters A* **407**, 127447 (2021).
181. Anisotropic electromagnetic field emitted by core-shell semiconductor nanowires driven by an alternating current,  
Miguel Urbaneja Torres, Kristjan Ottar Klausen, Anna Sitek, Sigurdur I. Erlingsson, Vidar Gudmundsson, and Andrei Manolescu,  
*Journal of Applied Physics* **130**, 034301 (2021),  
(arXiv:1912.10284)

182. Study of BC<sub>14</sub>N-bilayer graphene: Effects of atomic spacing and interatomic interaction between B and N atoms,  
 Nzar Rauf Abdullah, Hunar Omar Rashid, Vidar Gudmundsson,  
*Superlattices and Microstructures* **156**, 106981 (2021),  
 (arXiv:2104.01307)
183. Properties of BC<sub>6</sub>N monolayer derived by first-principle computation: Influences of interactions between dopant atoms on thermoelectric and optical properties,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Chi-Shung Tang, Vidar Gudmundsson,  
*Materials Science in Semiconductor Processing* **135**, 106073 (2021),  
 (arXiv:2106.00430)
184. AC-Gate Controlled Transport Sideband Spectroscopy in GaAs Quantum Channels,  
 Chi-Shung Tang, Ying-Yen Chen, Quoc-Hung Phan, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physics Letters A* **419**, 127755 (2021).
185. Modulation of electronic and thermal proprieties of TaMoS<sub>2</sub> by controlling the repulsive interaction between Ta dopant atoms,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Hunar Omar Rashid, Chi-Shung Tang, and Vidar Gudmundsson,  
*Solid State Communications* **342**, 114590 (2022),  
 (arXiv:2108.03693)
186. Controlling physical properties of bilayer graphene by stacking orientation caused by interaction between B and N dopant atoms,  
 Nzar Rauf Abdullah, Hunar Omar Rashid, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Materials Science and Engineering: B* **276**, 115554 (2022),  
 (arXiv:2101.00462)
187. Enhanced electronic and optical responses of Nitrogen- or Boron-doped BeO monolayer: First principle computation,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Hunar Omar Rshid, Chi-Shung Tang, Andrei Manolescu, and Vidar Gudmundsson,  
*Superlattices and Microstructures* **162**, 107102 (2022),  
 (arXiv:2108.12912)
188. High thermoelectric and optical conductivity driven by the interaction of Boron and Nitrogen dopant atoms with a 2D monolayer Beryllium Oxide,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, and Vidar Gudmundsson,  
*Materials Science in Semiconductor Processing* **141**, 106409 (2022),  
 (arXiv:2109.06307)
189. Controlling thermoelectric, heat, and energy currents through a quantum dot in sequential and cotunneling Coulomb-blockade regimes,  
 Taha Yasin Ahmed, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physica B: Physics of Condensed Matter* **628**, 413607 (2022),  
 (arXiv:2112.15293)
190. Thermal transport controlled by intra- and inter-dot Coulomb interactions in sequential and cotunneling serially-coupled double quantum dots,  
 Bashdar Rahman Pirot, Nzar Rauf Abdullah, Ari Karim Ahmed, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica B: Condensed Matter* **629**, 413646 (2022),  
 (arXiv:2201.00121)

191. DFT study of tunable electronic, magnetic, thermal, and optical properties of a  $\text{Ga}_2\text{Si}_6$  monolayer,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, and Vidar Gudmundsson,  
*Solid State Sciences* **125**, 106835 (2022),  
 (arXiv:2110.05617)
192. Electronic and Optical properties of Metallic Nitride: A comparative study between the MN (M=Al, Ga, In, Tl) monolayers,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, and Vidar Gudmundsson,  
*Solid State Communications* **346**, 114705 (2022),  
 (arXiv:2201.00113)
193. Unified approach to cyclotron and plasmon resonances in a periodic two-dimensional GaAs electron gas hosting the Hofstadter butterfly,  
 Vidar Gudmundsson, Vram Mughnetsyan, Nzar Rauf Abdullah, Chi-Shung Tang, Valeriu Moldoveanu, and Andrei Manolescu,  
*Phys. Rev. B* **105**, 155302 (2022),  
 (arXiv:2112.08216)
194. Quantum transport in p-type narrow channel with DC-biased double finger gate,  
 Wei-An Chen, Quoc-Hung Phan, Chi-Shung Tang, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physics Letters A* **439**, 128140 (2022).
195. Effects of coupling strength of the electron-photon and the photon-environment interactions on the electron transport through multiple-resonances of a double quantum dot system in a photon cavity,  
 Halo Anwar Abdulkhalaq, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physica B: Physics of Condensed Matter* **641**, 414097 (2022),  
 (arXiv:2206.15193)
196. Photon and magnetic field controlled electron transport of a multiply-resonant photon-cavity double quantum dot system,  
 Halo Anwar Abdulkhalaq, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physica E* **144**, 115405 (2022),  
 (arXiv:2207.01135)
197. Study of the buckling effects on the electrical and optical properties of the group III-Nitride monolayers,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Hunar Omar Rashid, Chi-Shung Tang, Vidar Gudmundsson,  
*Materials Science in Semiconductor Processing* **150**, 106943 (2022),  
 (arXiv:2207.00199)
198. Signature of miniband nodes in magneto-optical properties of one-dimensional superlattice of planar quantum rings,  
 Vram Mughnetsyan, Maryam Mansouri, Vigen Aziz-Aghchegala, Albert Kirakosyan, and Vidar Gudmundsson,  
*Physics Letters A* **448**, 128324 (2022),  
 (SSRN:4112846)
199. Effects of a far-infrared photon cavity field on the magnetization of a square quantum dot array,  
 Vidar Gudmundsson, Vram Mughnetsyan, Nzar Rauf Abdullah, Chi-Shung Tang, Valeriu Moldoveanu, and Andrei Manolescu,  
*Phys. Rev. B* **106**, 115308 (2022),  
 (arXiv:2203.11029)

200. Spin Quantum Transport in Double Top-Gate System,  
 Yuan-Fu Liao, Quoc-Hung Phan, Chi-Shung Tang, Nzar Rauf Abdullah, Chao-Cheng  
 Kaun, and Vidar Gudmundsson.  
*Chinese Journal of Physics* **85**, 15 (2023).
201. Role of planar buckling on the electronic, thermal, and optical properties of Germanium-graphene nanosheets,  
 Nzar Rauf Abdullah, Yousif Hussein Azeez, Botan Jawdat Abdullah, Hunar Omar  
 Rashid, Andrei Manolescu, and Vidar Gudmundsson,  
*Materials Science in Semiconductor Processing* **153**, 107163 (2023),  
 (arXiv:2210.04247)
202. Enhanced ultraviolet absorption in BN monolayers caused by tunable buckling,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Chi-Shung Tang, and Vidar Gud-  
 mundsson,  
*Materials Science and Engineering: B* **288**, 11614 (2023),  
 (arXiv:2201.00116)
203. Buckling effects in AlN monolayers: Shifting and enhancing optical characteristics  
 from the UV to the near visible light range,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Hunar Omar Rashid, and Vidar Gud-  
 mundsson,  
*Chemical Physics Letters* **811**, 140235 (2023),  
 (arXiv:2307.07786)
204. Interaction effects in a two-dimensional AlSi<sub>6</sub>P nanosheet: A first-principles study  
 on the electronic, mechanical, thermal, and optical properties,  
 Nzar Rauf Abdullah, Hunar Omar Rashid, Andrei Manolescu, and Vidar Gudmundsson,  
*Physica B* **652**, 414627 (2023),  
 (arXiv:2108.00387)
205. Planar buckling controlled optical conductivity of SiC monolayer from Deep-UV to  
 visible light region: A first-principles study,  
 Nzar Rauf Abdullah, Hunar Omar Rashid, Botan Jawdat Abdullah, Chi-Shung Tang,  
 and Vidar Gudmundsson,  
*Materials Chemistry and Physics* **297**, 127395 (2023),  
 (arXiv:2307.07793)
206. Single photon controlled steady state electron transport through a resonance DQD-  
 Cavity system in a strong coupling regime,  
 Halo Anwar Abdulkhalaq, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Solid State Communications* **362**, 115090 (2023),  
 (arXiv:2209.01495)
207. Ballistic spin transport in DC-bias single top gate p-type narrow channel device with  
 Zeeman-Rashba effects,  
 Hao-Xun Xu, Quoc-Hung Phan, Nzar Rauf Abdullah, Vidar Gudmundsson, and Chi-  
 Shung Tang,  
*Physica B: Condensed Matter* **657**, 414813 (2023).
208. Exploring electronic, optical, and phononic properties of MgX (X=C, N, and O)  
 monolayers using first principle calculations,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Yousif Hussein Azeez, and Vidar Gud-  
 mundsson,  
*Functional Materials Letters* **16**, 2351008 (2023),  
 (arXiv:2307.11041)

209. Optical conductivity enhancement and thermal reduction of BN-codoped MgO nanosheet: Significant effects of B-N atomic interaction,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Yousif Hussein Azeez, Chi-Shung Tang, and Vidar Gudmundsson,  
*Solid State Communications* **370**, 115218 (2023),  
 (arXiv:2307.09175)
210. Controlling the excitation spectrum of a quantum dot array with a photon cavity,  
 Vidar Gudmundsson, Vram Mugnatsyan, Nzar Rauf Abdullah, Chi-Shung Tang, Valeriu Moldoveanu, and Andrei Manolescu,  
*Phys. Rev. B* **108**, 115306 (2023),  
 (arXiv:2305.11544)
211. Hofstadter-like spectrum and Magnetization of Artificial Graphene constructed with cylindrical and elliptical quantum dots,  
 Maryam Mansouri, Vram Mugnatsyan, Aram Manaselyan, Albert Kirakosyan, Vidar Gudmundsson, and Vigen Aziz-Aghchegala,  
*Physics Letters A* **487**, 129115 (2023),  
 (arXiv:2307.02622)
212. Plunger Gate Effects on Magneto Transport in Double-Top Gate Spin-Orbit Devices,  
 Lin Lee, Quoc-Hung Phan, Chi-Shung Tang, Nzar Rauf Abdullah, and Vidar Gudmundsson,  
*Physica B: Condensed Matter*, **675**, 415591 (2024).
213. Magnetic properties of a cavity-embedded square lattice of quantum dots or antidots,  
 Vram Mugnatsyan, Vidar Gudmundsson, Nzar Rauf Abdullah, Chi-Shung Tang, Valeriu Moldoveanu, and Andrei Manolescu,  
*Annalen der Physik* **536**, 2300274 (2024),  
 (arXiv:2306.06765)
214. Novel ZnO nanosheet with buckling stress: First principles study of electronic, structural stability, phonon vibrations, lattice thermal and optical conductivity,  
 Nzar Rauf Abdullah, Botan Jawdat Abdullah, Hemn Gharib Hussein, and Vidar Gudmundsson,  
*Chemical Physics Letters* **844**, 141269 (2024).
215. Controlling electronic, magnetic, thermal, and optical properties of boron-nitrogen codoped strontium oxide monolayer: Activation of optical transitions in the VL region,  
 Nzar Rauf Abdullah, Hemn Gharib Hussein, and Vidar Gudmundsson,  
 (2023), (arXiv:2307.09173)
216. Magneto-optical properties of a quantum dot array interacting with a far-infrared photon mode of a cylindrical cavity,  
 Vidar Gudmundsson, Vram Mugnatsyan, Hsi-Sheng Goan, Jeng-Da Chai, Nzar Rauf Abdullah, Chi-Shung Tang, Valeriu Moldoveanu, and Andrei Manolescu,  
 (2024), (arXiv:2403.10027)

## 2 Articles in Icelandic or published in Iceland

1. Ástandspéttleiki tvívíðs rafeindakerfis í sterku segulsviði og við lágt hitastig,  
 Viðar Guðmundsson og R. R. Gerhardts,  
*Eðlisfræði á Íslandi III, Ráðstefnurit íslenska eðlisfræðifélagsins*, (1986).

2. Skýling rafkrafta í tvívíðu rafeindakerfi í sterku segulsviði,  
Viðar Guðmundsson og R. R. Gerhardts,  
*Eðlisfræði á Íslandi IV, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1988).
3. Ljósísog skammtapunkta,  
Viðar Guðmundsson og Rolf R. Gerhardts,  
*Eðlisfræði á Íslandi V, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1991).
4. Samanburður reiknilíkana fyrir rafeindir í skammtapunktum,  
Viðar Guðmundsson, Daniela Pfannkuche og Peter Maksym,  
*Eðlisfræði á Íslandi VI, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1992).
5. Spunabylgjur og ljósísog í tvívíðu rafeindakerfi,  
Ágústa S. Loftsdóttir, Gunnar Pálsson og Viðar Guðmundsson,  
*Eðlisfræði á Íslandi VII, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1995).
6. Leiðin frá einni vídd yfir í tvær,  
Viðar Guðmundsson og Sigurður I. Erlingsson,  
*Eðlisfræði á Íslandi VIII, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1997).
7. Net andskammtapunkta,  
Sigurður I. Erlingsson og Viðar Guðmundsson,  
*Eðlisfræði á Íslandi VIII, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1997).
8. Electrons on a ring,  
Yuao Chen and Viðar Guðmundsson,  
*Eðlisfræði á Íslandi IX, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1999).
9. Seglun skammtapunkta,  
Ingibjörg Magnúsdóttir og Viðar Guðmundsson,  
*Eðlisfræði á Íslandi IX, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (1999).
10. Deformed quantum dots,  
Gabriel Vasile and Viðar Guðmundsson,  
*Eðlisfræði á Íslandi X, Ráðstefnurit  
íslenska eðlisfræðifélagsins*, (2001).
11. Sístæður Straumur í Skammtahringjum,  
Sigríður Sif Gylfadóttir og Viðar Guðmundsson,  
*Raust 2, 7* (2004).