Appendix NEF Publications 2016-2025 (397 papers)

2016 (50 papers):

1. Spin Textures of Exciton-Polaritons in a Tunable Microcavity with Large TE-TM Splitting, F Li, E Cancellieri, L Giriunas, A A P Trichet, D M Whittaker, P M Walker, F Fras, E Clarke, J M Smith, M S Skolnick, D N Krizhanovskii, Phys Rev Lett 115, 246401. 2016. **DOI: 0.1103/PhysRevLett.115.246401**
2. Chirality of nanophotonic waveguide with embedded quantum emitter for unidirectional spin transfer, R J Coles, D M Price, J M Dixon, B Royall, E Clarke, P Kok, M S Skolnick, A M Fox and M Makhonin, Nature Communications 7, 11183, 2016. **DOI: 10.1038/ncomms11183**
3. Magneto-optical spectroscopy of single charge-tunable InAs/GaAs quantum dots emitting at telecom wavelengths, L Sapienza, R Al-Khuzheyri, A Dada, A Griffiths, E Clarke, B D Gerardot, Phys Rev 93, 155301, 2016. **DOI: 10.1103/PhysRevB.93.155301**
4. Optimization of the Epitaxial Design of High Current Density Resonant Tunneling Diodes for Terahertz Emitters. Baba, R; Stevens, BJ; Mukai, T; Hogg, RA. 2016. QUANTUM SENSING AND NANO ELECTRONICS AND PHOTONICS XIII. Volume 9755. **DOI10.1117/12.2212346**
5. Characterisation of High Current Density Resonant Tunneling Diodes for THz Emission Using Photoluminescence Spectroscopy. Jacobs, KJP; Baba, R; Stevens, BJ; Mukai, T; Ohnishi, D; Hogg, RA. 2016. Quantum Dots And Nanostructures: Growth, Characterization, And Modeling Xiii. Volume9758. **DOI10.1117/12.2212669**
6. Epitaxial Design for Maximising Wall Plug Efficiency in Resonant Tunnelling Diode Terahertz Emitters. Baba, R; Stevens, BJ; Mukai, T; Hogg, RA. 2016 International Conference on Infrared Millimeter and Terahertz Waves. **DOI: 10.1109/IRMMW-THz.2016.7758959**
7. On-chip interference of single photons from an embedded quantum dot and an external laser, N Prtljaga, C Bentham, J O'Hara, J, B Royall, E Clarke, L R Wilson, M S Skolnick, A M Fox, Appl Phys Lett 108, 251101, 2016. **DOI: 10.1063/1.4954220**
8. Temperature dependence of avalanche gain in $Al_{0.85}Ga_{0.15}As_{0.56}Sb_{0.44.}$ Xie, S; Zhou, X; Zhang, S; Ng, JS; Tan, CH. 2016 Compound Semiconductor Week (Csw) Includes 28th International Conference On Indium Phosphide & Related Materials (Iprm) & 43rd International Symposium On Compound Semiconductors (Iscs). **DOI: 10.1109/ICIPRM.2016.7528783**
9. InGaAs/AlGaAsSb APD with over 200 GHz gain-bandwidth product. Zhou, X; Xie, S; Zhang, S; Ng, JS; Tan, CH. 2016. 2016 Compound Semiconductor Week (Csw) Includes 28th International Conference On Indium Phosphide & Related Materials (Iprm) & 43rd International Symposium On Compound Semiconductors (Iscs). **DOI: 10.1109/ICIPRM.2016.7528782**
10. Simulation of broad spectral bandwidth emitters at 1060nm for optical coherence tomography. Tooley, IG; Childs, DTD; Stevens, BJ; Groom, KM ; Hogg, RA. 2016. NOVEL IN-PLANE SEMICONDUCTOR LASERS XV. Volume9767. **DOI10.1117/12.2211657**
11. Strain balancing of MOVPE InAs/GaAs quantum dots using $GaAs_{0.8}P_{0.2.}$ Roberts, TS; Stevens, BJ; Clarke, E; Tooley, I; Orchard, J; Farrer, I; Childs, DTD; Babazadeh, N; Ozaki, N; Mowbray, D; Hogg, RA. 2016 IEEE International Semiconductor Laser Conference.

12. High sensitivity InAs photodiodes for mid-infrared detection. Ng, S; Zhou, XX; Auckloo, A; White, B; Zhang, SY; Krysa, A; David, JPR; Tan, CH. 2016. ELECTRO-OPTICAL REMOTE SENSING X. Volume 9988. **DOI10.1117/12.2243146**
13. Photoluminescence Characterisation of High Current Density Resonant Tunnelling Diodes for Terahertz Applications. Jacobs, KJP; Stevens, BJ; Hogg, RA. February 2016. IEICE TRANSACTIONS ON ELECTRONICS. Volume E99C Issue2 Page181-188. **DOI10.1587/transele.E99.C.181**
14. Avalanche Noise in Al0.52In0.48P diodes, L Qiao, J S Cheong, J S L Ong, J S Ng, A B Krysa, J E Green, J P R David, IEEE Phot Tech Lett 28, 481, 2016. **DOI: 10.1109/LPT.2015.2499545**
15. Visible light communication using InGaN optical sources with AlInGaP nanomembrane down-converters, J M M Santos, S Rajbhandari, D Tsonev, H Chun, B Guilhabert, A B Krysa, M D Dawson, Optics Express 24, 10020, 2016. **DOI: 10.1364/OE.24.010020**
16. High-Gain InAs Planar Avalanche Photodiodes, B S White, I C Sandall, X X Zhou, A B Krysa, K McEwan, J P R David, John P. R.), C H Tan, J Lightwave Technology 34, 2639, 2016. **DOI: 10.1109/JLT.2016.2531278**
17. Characterisation of Al0.52In0.48P mesa p-i-n photodiodes for X-ray photon counting spectroscopy, S Butera, G Lioliou, A B Krysa, A M Barnett, J Appl Phys 120, 024502, 2016. **DOI: 10.1063/1.4956153**
18. Al0.52In0.48P Fe-55 x-ray-photovoltaic battery, S Butera, G Lioliou, A B Krysa, A M Barnett, J Phys D, 49, 355601, 2016. **DOI: 10.1088/0022-3727/49/35/355601**
19. Optimizations of Defect Filter Layers for 1.3-mu m InAs/GaAs Quantum-Dot Lasers Monolithically Grown on Si Substrates, M Tang, S M Chen, J Wu, Q Jiang, K Kennedy, P Jurczak, M Liao, R Beanland, A Seeds, H Y Liu, IEE Sel Top in Q Electronics 22, 1900207, 2016. **DOI: 10.1109/JSTQE.2016.2551941**
20. Microscopic model for the magnetic-field-driven breakdown of the dissipationless state in the integer and fractional quantum Hall effect, A Poux, Z R Wasilewski, K J Friedland, R Hey, K H Ploog, R Airey, P Plochocka, D K Maude, Phys Rev 94, 075411, 2016. **DOI: 10.1103/PhysRevB.94.075411**
21. Ultrafast depopulation of a quantum dot by LA-phonon-assisted stimulated emission, F Liu, L M P Martins, A J Brash, A M Barth, J H Quilter, V M Axt, M S Skolnick, A M Fox, Phys Rev B93, 161407(R), 2016. **DOI: 10.1103/PhysRevB.93.161407**
22. Mechanism for enhanced wavelength tuning in gain-levered InP quantum dot lasers, R Thomas, D. Briglin, A. B. Krysa, P M Smowton, IET Optoelectronics 10, 661, 2016. **DOI: 10.1049/iet-opt.2015.0062**
23. InAsP/AlGaInP/GaAs QD laser operating at ~770 nm, A.B. Krysa et al, J. Phys. Conf. Ser. 740, 012008, 2016. **DOI: 10.1088/1742-6596/740/1/012008**
24. Tunable narrow linewidth AlGaInP semiconductor disk laser for Sr atom cooling applications, D Pabœuf, J E Hastie, Applied Optics 55, 4980, 2016. **DOI: 10.1364/AO.55.004980**
25. Temperature study of $Al_{0.52}In_{0.48}P$ detector photon counting X-ray spectrometer S. Butera, A B Krysa, A M Barnett, J. Appl. Phys. 120, 174593, 2016. **DOI: 10.1063/1.4966940**
26. Temperature dependence of an AlInP ^{63}Ni betavoltaic cell, S. Butera, A B Krysa, A M Barnett. J. Appl. Phys. 2016-120-14450, 2016. **DOI: 10.1063/1.4964504**

27. InGaAs/AlGaAsSb avalanche photodiode with high gain - bandwidth product, S Xie, X Zhou, S Zhang, D J Thomson, X Chen, G T Reed, C H Tan. Optics Express, 24, 24242, 2016. **DOI: 10.1364/OE.24.024242**

28. GaAs-based superluminescent diodes with window-like facet structure for low spectral modulation at high output powers. Ghazal, OMS; Childs, DT; Stevens, BJ; Babazadeh, N; Hogg, RA; Groom, KM. April 2016. SEMICONDUCTOR SCIENCE AND TECHNOLOGY. Volume 31 Issue 4. **DOI10.1088/0268-1242/31/4/045003**

29. InGaAs/InAlAs single photon avalanche diode for 1550 nm photons, X Meng, S. Xie, X. Zhou, N. Calandri, M. Sanzaro, A. Tosi, C. H. Tan and J. S. Ng. R Soc Open Sci. 3, 150584, 2016. **DOI: 10.1098/rsos.150584**

30. Avalanche breakdown characteristics of $Al_{1-x}Ga_xAs_{0.56}Sb_{0.44}$ quaternary alloys. X Zhou, S Zhang, J David, J S Ng & C H Tan, C. H. IEEE Photonics Technology Letters, PP(99), 1, 2016. **DOI: 10.1109/LPT.2016.2601651**

31. Quantum dot spin coherence governed by a strained nuclear environment, R. Stockhill, C. Le Gall, C. Matthiesen, L. Huthmacher, E. Clarke, M. Hugues, M. Atatüre, Nat. Commun. 7, 12745, 2016. **DOI: 10.1038/ncomms12745**

32. GaAs-based self-aligned stripe superluminescent diodes processed normal to the cleaved facet. Ghazal, OMS; Lei, D; Childs, DT; Stevens, BJ; Babazadeh, N; Hogg, RA; Groom, KM. 2016. NOVEL IN-PLANE SEMICONDUCTOR LASERS XV. Volume 9767. **DOI10.1117/12.2211062**

33. Quantum dot materials for terahertz generation applications. R. R. Leyman, A. Gorodetsky, N. Bazieva, G. Molis, A. Krotkus, E. Clarke, E. U. Rafailov. Laser Photonics Rev. 10, 772, 2016. **DOI: 10.1002/lpor.201500176**

34. Combined electrical and resonant optical excitation characterization of multi-quantum well InGaN-based light-emitting diodes. Presa, S; Maaskant, PP; Kappers, MJ; Humphreys, CJ; Corbett, B. July 2016. AIP ADVANCES. Volume 6 Issue 7. **DOI10.1063/1.4959100**

35. A GaAs-based self-aligned stripe distributed feedback laser. Lei, H; Stevens, BJ; Fry, PW; Babazadeh, N; Ternent, G; Childs, DT; Groom, KM. August 2016. SEMICONDUCTOR SCIENCE AND TECHNOLOGY. Volume 31 Issue 8. **DOI10.1088/0268-1242/31/8/085001**

36. Single-photon electroluminescence for on-chip quantum networks", C. Bentham, D. Hallett, N. Prtljaga, B. Royall, D. Vaitiekus, R. J. Coles, E. Clarke, A. M. Fox, M. S. Skolnick, I. E. Itskevich, L. R. Wilson, Appl. Phys. Lett. 109, 161101, 2016. **DOI: 10.1063/1.4965295**

37. A comparison of the optical properties of InGaN/GaN multiple quantum well structures grown with and without Si-doped InGaN prelayers. M J Davies, S Hammersley, F C P Massabuau, P Dawson, R A Oliver, M J Kappers, & C J Humphreys. Journal of Applied Physics, 119, 055708, 2016. **DOI: 10.1063/1.4941321**

38. Photonic crystal surface emitting lasers - coherent arrays and external feedback. Taylor, RJE; Li, G; Ivanov, P; Childs, DTD; Stevens, BJ; Babazadeh, N; Ignatova, O; Nakano, Y; Tanemura, T; Hogg, RA. 2016 INTERNATIONAL CONFERENCE LASER OPTICS. **DOI: 10.1109/LO.2016.7549733**

39. The nature of carrier localisation in polar and nonpolar InGaN/GaN quantum wells. P Dawson, S Schulz, R A Oliver, M J Kappers, & C J Humphreys. Journal of Applied Physics, 119, 181505, 2016. **DOI: 10.1063/1.4948237**

40. Comparative studies of efficiency droop in polar and non-polar InGaN quantum wells. M J Davies, P Dawson, S Hammersley, T Zhu, M J Kappers, C J Humphreys, & R A Oliver. Applied Physics Letters, 108, 252101, 2016. **DOI: 10.1063/1.4954236**
41. Ultrafast, Polarized, Single-Photon Emission from m-Plane InGaN Quantum Dots on GaN Nanowires. T J Puchtler, T Wang, C X Ren, F Tang, R A Oliver, R A Taylor & T Zhu. Nano Lett, 16, 7779, 2016. **DOI: 10.1021/acs.nanolett.6b03980**
42. Structural, electrical, and optical characterization of as grown and oxidized zinc nitride thin films. Trapalis, A; Heffernan, J; Farrer, I; Sharman, J; Kean, A. November 2016. JOURNAL OF APPLIED PHYSICS. Volume 120 Issue 20. **DOI10.1063/1.4968545**
43. Dielectric response of wurtzite gallium nitride in the terahertz frequency range. Hibberd, MT; Frey, V; Spencer, BF; Mitchell, PW; Dawson, P; Kappers, MJ; Oliver, RA; Humphreys, CJ ; Graham, DM. December 2016. SOLID STATE COMMUNICATIONS. Volume 247 Page 68-71. **DOI10.1016/j.ssc.2016.08.017**
44. Study of Electro-absorption Effects in 1300nm In(Ga)As/GaAs Quantum Dot Materials. Sobhani, SA; Childs, DT; Babazadeh, N; Stevens, BJ; Nishi, K; Suguwara, M; Takemasa, K; Hogg, RA. 2016. PHYSICS AND SIMULATION OF OPTOELECTRONIC DEVICES XXIV. Volume 9742. **DOI10.1117/12.2213187**
45. Theoretical and experimental analysis of the photoluminescence and photoluminescence excitation spectroscopy spectra of *m*-plane InGaN/GaN quantum wells. Schulz, S; Tanner, DSP; O'Reilly, EP; Caro, MA; Tang, F; Griffiths, JT; Oehler, F; Kappers, MJ; Oliver, RA; Humphreys, CJ ;Sutherland, D; Davies, MJ; Dawson, P. November 2016. APPLIED PHYSICS LETTERS. Volume 109 Issue 22. **DOI10.1063/1.4968591**
46. A study of the optical and polarisation properties of InGaN/GaN multiple quantum wells grown on a-plane and m-plane GaN substrates. Kundys, D; Sutherland, D; Davies, M; Oehler, F; Griffiths, J; Dawson, P; Kappers, MJ; Humphreys, CJ; Schulz, S; Tang, F; Oliver, RA. November 2016. Science and Technology of Advanced Materials. Vol 17, No 1, 736-743. **DOI10.1080/14686996.2016.1244474**
47. Mode Control in Photonic Crystal Surface Emitting Lasers Through In-Plane Feedback. Taylor, RJE; Li, G; Ivanov, P; Childs, DTD; Stevens, BJ; Harrison, B; Babazadeh, N; Ignatova, O; Hogg, RA. 2016 IEEE International Semiconductor Laser Conference
48. Analysis of defect-related inhomogeneous electroluminescence in InGaN/GaN QW LEDs. Ren, CX ; Rouet-Leduc, B; Griffiths, JT; Bohacek, E; Wallace, MJ; Edwards, PR; Hopkins, MA; Allsopp, DWE; Kappers, MJ; Martin, RW; Oliver, RA. November 2016. SUPERLATTICES AND MICROSTRUCTURES. Volume 99 Page 118-124. **DOI10.1016/j.spmi.2016.03.036**
49. Local carrier recombination and associated dynamics in *m*-plane InGaN/GaN quantum wells probed by picosecond cathodoluminescence. Zhu, TT; Gachet, D; Tang, FZ; Fu, WY; Oehler, F; Kappers, MJ; Dawson, P; Humphreys, CJ ; Oliver, RA. December 2016. APPLIED PHYSICS LETTERS. Volume 109 Issue 23. **DOI10.1063/1.4971366**
50. Tuning Nonlinear Mechanical Mode Coupling in GaAs Nanowires Using Cross-Section Morphology Control. Foster, AP; Maguire, JK; Bradley, JP; Lyons, TP; Krysa, AB; Fox, AM; Skolnick, MS; Wilson, LR. December 2016. NANO LETTERS. Volume 16 Issue 12 Page 7414-7420. **DOI10.1021/acs.nanolett.6b02994**

2017 (49 papers):

51. Polariton Pattern Formation and Photon Statistics of the Associated Emission. C E Whittaker, B Dzurnak, O A Egorov, G Buonaiuto, P M Walker, E Cancellieri, D M Whittaker, E Clarke, S S Gavrilov, M S Skolnick, D N Krizhanovskii. Phys. Rev. X7, 031033, Vol.7(3), 2017. **DOI: 10.1103/PhysRevX.7.031033**
52. Fabrication, Characterisation, and Epitaxial Optimisation of MOVPE-Grown Resonant Tunnelling Diode THz emitters. Baba, R; Jacobs, KJP; Stevens, BJ; Harrison, BA; Mukai, T; Hogg, RA. 2017. QUANTUM SENSING AND NANO ELECTRONICS AND PHOTONICS XIV. Volume 10111. **DOI10.1117/12.2252377**
53. Generating indistinguishable photons from a quantum dot in a noisy environment. T. S. Santana, Y. Ma, R. N. E. Malein, F. Bastiman, E. Clarke, B. D. Gerardot, Phys. Rev. B 95, 201410, 2017. **DOI: 10.1103/PhysRevB.95.201410**
54. Determination of the transport lifetime limiting scattering rate in InSb/AlInSb quantum wells using optical surface microscopy, C. J. McIndo, D. G. Hayes, A. Papageorgiou, L. A. Hanks, G. V. Smith, C. P. Allford, S. Zhang, E. M. Clarke, P. D. Buckle, Physica E 91, 169, 2017. **DOI: 10.1016/j.physe.2017.04.019**
55. Path-dependent initialization of a single quantum dot exciton spin in a nanophotonic waveguide, R. J. Coles, D. M. Price, B. Royall, E. Clarke, M. S. Skolnick, A. M. Fox, M. N. Makhonin, Phys. Rev. B 95, 121401, 2017. **DOI: 10.1103/PhysRevB.95.121401**
56. Spatial regularity of InAs-GaAs quantum dots: quantifying the dependence of lateral ordering on des with extremely weak temperature dependence of avalanchgrowth rate, T. Konishi, E. Clarke, C. W. Burrows, J. J. Bomphrey, R. Murray, G. R. Bell, Sci. Rep. 7, 42606, 2017. **DOI: 10.1038/srep42606**
57. Thin $Al_{1-x}Ga_xAs_{0.56}Sb_{0.44}$ diodes with low excess noise. X. Zhou, L. L.G. Pinel, S. J. Dimler, S. Zhang, J. S. Ng, and C. H. Tan. IEEE Journal of Selected Topics in Quantum Electronics, 24, 3800105, 2017. **DOI: 10.1109/JSTQE.2017.2725441**
58. Thin $Al_{1-x}Ga_xAs_{0.56}Sb_{0.44}$ diodes with extremely weak temperature dependence of avalanche breakdown. X Zhou, C H Tan, S Zhang, M Moreno, S Xie, S Abdullah, J S & Ng. Royal Society Open Science, 4, 170071. 2017. **DOI: 10.1098/rsos.170071**
59. Spin-orbit interaction in InAs/GaSb heterostructures quantified by weak antilocalization. F Herling, C Morrison, C S Knox, S Zhang, O Newell, M Myronov, C H Marrows. Physical Review B, 95(15), 2017. **DOI: 10.1103/PhysRevB.95.155307**
60. Proton radiation effect on InAs avalanche photodiodes X Zhou, B White, X Meng, S Zhang, M Gutierrez, M Robbins, J S Ng. Optics Express, 25, 2818-2825, 2017. **DOI: 10.1364/OE.25.002818**
61. Monolithically Integrated Electrically Pumped Continuous-Wave III-V Quantum Dot Light Sources on Silicon. MY Liao, S M Chen, S G Hou, S Chen, J Wu, M C Tang, K Kennedy, W Li, S Kumar, M Martin, T Baron, CY Jin, I Ross, A Seeds, HY Liu. IEEE Journal of Selected Topics in Quantum Electronics Vol. 22, 6, 190010, 2017. **DOI: 10.1109/JSTQE.2017.2693025**
62. Gallium Nitride Superluminescent Light Emitting Diodes for Optical Coherence Tomography Applications. Graham R. Goldberg; Aleksandr Boldin; Sophia M. L. Andersson; Pavlo Ivanov; Nobuhiko Ozaki; Richard J. E. Taylor; David T. D. Childs; Kristian M. Groom; Kenneth L.

Kennedy; Richard A. Hogg, IEEE Journal of Selected Topics in Quantum Electronics, 23, 2000511, 2017. **DOI: 10.1109/JSTQE.2017.2732941**

63. Temperature dependence of the band gap of zinc nitride observed in photoluminescence measurements. A Trapalis, I Farrer, K Kennedy, A Kean, J Sharman, J Heffernan. Applied Physics Letters, Vol. 111, 12, 2017. **DOI: 10.1063/1.4997153**
64. Universal Growth Scheme for Quantum Dots with Low Fine-Structure Splitting at Various Emission Wavelengths, Joanna Skiba-Szymanska, R. Mark Stevenson, Christiana Varnava, Martin Felle, Jan Huwer, Tina Müller, Anthony J. Bennett, James P. Lee, Ian Farrer, Andrey B. Krysa, Peter Spencer, Lucy E. Goff, David A. Ritchie, Jon Heffernan, and Andrew J. Shields, Physical Review Applied 8, 014013, 2017. **DOI: 10.1103/PhysRevApplied.8.014013**
65. Tunable, CW laser emission at 225 nm via intracavity frequency tripling in a semiconductor disk laser, J M R García, D Paboeuf., J E Hastie, J. Selected Topics in Quantum Electronics 23, 5100608, 2017. **DOI: 10.1109/JSTQE.2017.2696882**
66. InGaP (GaInP) mesa p-i-n photodiodes for X-ray photon counting spectroscopy", S. Butera, A B Krysa, A M Barnett, Scientific Reports 7, 10206, 2017. **DOI: 10.1038/s41598-017-10502-y**
67. Temperature effects on an InGaP (GaInP) ^{55}Fe X-ray photovoltaic cell", S. Butera, A B Krysa, A M Barnett , Scientific Reports 7, 4981, 2017. **DOI: 10.1038/s41598-017-05181-8**
68. Investigation of a temperature tolerant InGaP (GaInP) converter layer for a ^{63}Ni betavoltaic cell, S. Butera, A B Krysa, A M Barnett J. Phys. D: Appl. Physics 50, 345101, 2017. **DOI: 10.1088/1361-6463/aa7bc5**
69. Absorption coefficients in AlGaInP lattice-matched to GaAs, J S Cheong, A B Krysa, J P R David, Sol. Energy Mat. and Sol. Cells 164, 28, 2017. **DOI: 10.1016/j.solmat.2017.01.042**
70. Structural impact on the nanoscale optical properties of InGaN core-shell nanorods, J. T. Griffiths, C. X. Ren, P.-M. Coulon, E. D. Le Boulbar, C. G. Bryce, I. Girgel, A. Howkins, I. Boyd, R. W. Martin, D. W. E. Allsopp, P. A. Shields, C. J. Humphreys, and R. A. Oliver Appl. Phys. Lett. 110, 172105, 2017. **DOI: 10.1063/1.4982594**
71. X-ray reflectivity method for the characterization of InGaN/GaN quantum well interface, F Massabuau, N Piot, M Frentrup, X Wang, Q Avenas, MKappers, C Humphreys, R Oliver, Phys. Status Solidi B, 16, 00664, 2017. **DOI10.1002/pssb.201600664**
72. Dislocations in AlGaN: Core Structure, Atom Segregation, and Optical Properties, Fabien C-P. Massabuau, Sneha L. Rhode, Matthew K. Horton, Thomas J. O'Hanlon, András Kovács, Marcin S. Zielinski, Menno J. Kappers, Rafal E. Dunin-Borkowski, Colin J. Humphreys, and Rachel A. Oliver, Nano Letters 17, 4846, 2017. **DOI:10.1021/acs.nanolett.7b01697**
73. Carrier localization in the vicinity of dislocations in InGaN. Massabuau, FCP; Chen, P; Horton, MK; Rhode, SL; Ren, CX; O'Hanlon, TJ; Kovács, A; Kappers, MJ; Humphreys, CJ; Dunin-Borkowski, RE; Oliver, RA. January 2017. JOURNAL OF APPLIED PHYSICS. Volume 121 Issue 1. **DOI10.1063/1.4973278**
74. Hysteretic photochromic switching of Eu-Mg defects in GaN links the shallow transient and deep ground states of the Mg acceptor. Singh, AK; O'Donnell, KP; Edwards, PR; Lorenz, K; Kappers, MJ; Bockowski, M. Feb 2017. SCIENTIFIC REPORTS Volume 7. **DOI10.1038/srep41982**
75. Lattice Location of Mg in GaN: A Fresh Look at Doping Limitations. Wahl, U; Amorim, LM; Augustyns, V; Costa, A; David-Bosne, E; Lima, TAL; Lippertz, G; Correia, JG; da Silva, MR;

Kappers, MJ; Temst, K; Vantomme, A; Pereira, LMC. March 2017.PHYSICAL REVIEW LETTERS. Volume 118 Issue 9. **DOI10.1103/PhysRevLett.118.095501**

76. Validity of Vegard's rule for $Al_{1-x}In_xN$ (0.08 < *x* < 0.28) thin films grown on GaN templates. Magalhaes, S; Franco, N; Watson, IM; Martin, RW; O'Donnell, KP; Schenk, HPD; Tang, F ; Sadler, TC; Kappers, MJ; Oliver, RA; Monteiro, T; Martin, TL ; Bagot, PAJ; Moody, MP; Alves, E ; Lorenz, K. May 2017. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 50 Issue 20 **DOI10.1088/1361-6463/aa69dc**
77. The atomic structure of polar and non-polar InGaN quantum wells and the green gap problem. Humphreys, CJ; Griffiths, JT; Tang, F; Oehler, F; Findlay, SD; Zheng, C; Etheridge, J; Martin, TL; Bagot, PAJ; Moody, MP; Sutherland, D; Dawson, P; Schulz, S; Zhang, S; Fu, WY; Zhu, T; Kappers, MJ; Oliver, RA. May 2017. ULTRAMICROSCOPY. Volume 176 Page 93-98 Special Issue. **DOI10.1016/j.ultramic.2017.01.019**
78. Silicon-based Single Quantum Dot Emission in the Telecoms C-band, J R Orchard, C Woodhead, J Wu, M Tang, R Beanland, Y Noori, H Liu, R J Young, D J Mowbray, ACS Photonics 4, 1740, 2017. **DOI: 10.1021/acsphotonics.7b00276**
79. Photoluminescence studies of cubic GaN epilayers. Church, SA; Hammersley, S; Mitchell, PW; Kappers, MJ; Sahonta, SL; Frentrup, M; Nilsson, D; Ward, PJ ; Shaw, LJ; Wallis, DJ; Humphreys, CJ; Oliver, RA; Binks, DJ ; Dawson, P. August 2017. PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS. Volume 254 Issue 8. **DOI10.1002/pssb.201600733**
80. Ten-fold Enhancement of InAs Nanowire Photoluminescence Emission with an InP Passivation Layer, P Jurczak, Y Zhang, J Wu, A M Sanchez, M Aagesen, H Liu, Nano Letters *17*, 3629, 2017. **DOI: 10.1021/acs.nanolett.7b00803**
81. Electrically pumped continuous-wave 1.3 µm InAs/GaAs quantum dot lasers monolithically grown on on-axis Si (001) substrates, S Chen, M Liao, M Tang, J Wu, M Martin, T Baron, A, H Liu, Optics Express 25, 4632, 2017. **DOI: 10.1364/OE.25.004632**
82. Realizing the classical XY Hamiltonian in polariton simulators. M Silva, K Kalinin, A Askitopoulos, J Topfer, N Berloff, P Cilibrizzi, W Langbein, P G Lagoudakis, Nature Materials, 2017 p1120-1126. **DOI: 10.1038/NMAT4971**
83. Mode Control in Photonic Crystal Surface Emitting Lasers Through External Reflection. Richard J E Taylor, Guangrui Li, Pavlo Ivanov, David T D Childs, Timothy S Roberts, Benjamin J Stevens, Brett Harrison, Jayanta Sarma, Nasser Babazadeh, Gary Terrnent, Richard A Hogg. Vol. 23 (6), 2017. **DOI: 10.1109/JSTQE.2017.2701281**
84. Metalorganic vapor phase epitaxy growth, transmission electron microscopy, and magneto-optical spectroscopy of individual $InAs_xP_{1-x}/Ga_{0.5}In_{0.5}P$ quantum dots. Del Pozo-Zamudio, O; Puebla, J; Krysa, A; Toro, R; Sanchez, AM; Beanland, R; Tartakovskii, AI; Skolnick, MS; Chekhovich, EA. August 2017. PHYSICAL REVIEW MATERIALS. Volume 1 Issue 3. **DOI10.1103/PhysRevMaterials.1.034605**
85. Progress in low light-level InAs detectors- towards Geiger-mode detection. Tan, CH; Ng, JS; Zhou, XX; David, J; Zhang, SY; Krysa, A. 2017. ADVANCED PHOTON COUNTING TECHNIQUES XI. Volume 10212. **DOI10.1117/12.2262469**
86. Electron transport lifetimes in $InSb/Al_{1-x}In_xSb$ quantum well 2DEGs. Hayes, DG; Allford, CP; Smith, GV; Mcindo, C; Hanks, LA; Gilbertson, AM; Cohen, LF; Zhang, S; Clarke, EM; Buckle,

PD. August 2017. SEMICONDUCTOR SCIENCE AND TECHNOLOGY. Volume 32 Issue 8. **DOI10.1088/1361-6641/aa75c8**

87. Growth scheme for quantum dots with low fine structure splitting at telecom wavelengths. Müller, T; Skiba-Szymanska, J; Stevenson, RM; Varnava, C; Felle, M; Huwer, J; Bennett, AJ; Lee, JP; Farrer, I; Krysa, A; Spencer, P; Goff, LE; Ritchie, DA; Heffernan, J; Shields, AJ. 2017. 2017 CONFERENCE ON LASERS AND ELECTRO-OPTICS EUROPE & EUROPEAN QUANTUM ELECTRONICS CONFERENCE (CLEO/EUROPE-EQEC). **DOI: 10.1109/CLEOE-EQEC.2017.8087427**
88. Phase-Tuned Entangled State Generation between Distant Spin Qubits. R Stockill, M J Stanley, L Huthmacher, E Clarke, M Hugues, A J Miller, C Matthiesen, C Le Gall, M Atature, Phys. Rev. Lett. 119, 010503, 2017. **DOI: 10.1103/PhysRevLett.119.010503**
89. Surface Zeta Potential and Diamond Seeding on Gallium Nitride Films. Mandal, S; Thomas, ELH; Middleton, C; Gines, L; Griffiths, JT; Kappers, MJ ; Oliver, RA; Wallis, DJ; Goff, LE; Lynch, SA Kuball, M ; Williams, OA. October 2017, ACS OMEGA. Volume 2 Issue 10 Page s7275-7280, **DOI 10.1021/acsomega.7b01069**
90. Valley current characterization of high current density resonant tunnelling diodes for terahertz-wave applications. Jacobs, KJP; Stevens, BJ; Baba, R; Wada, O; Mukai, T; Hogg, RA. October 2017. AIP ADVANCES. Volume 7 Issue 10. **DOI 10.1063/1.4997664**
91. X-ray diffraction analysis of cubic zincblende III-nitrides. Frentrup, M; Lee, LY; Sahonta, SL ; Kappers, MJ; Massabuau, F; Gupta, P; Oliver, RA; Humphreys, CJ ; Wallis, DJ. November 2017. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 50 Issue 43. **DOI10.1088/1361-6463/aa865**
92. Room Temperature Tuneable THz Generation Based On Excitonic optical nonlinearities in GaAs/AlGaAs Multi-Quantum Well Structures. Majeed, AN; Ivanov, P; Stevens, BJ; Clarke, E; Butler, IME; Childs, DTD; Kojima, O; Hogg, RA. 2017 International Conference on Infrared Millimeter and Terahertz Waves. **DOI: 10.1109/IRMMW-THz.2017.8067208**
93. Room Temperature Tuneable THz Generation Based On 2nd Order Non-Linear Optical Effects in GaAs/AlGaAs Multi-Quantum Well Excitons. Majeed, AN; Ivanov, P; Stevens, BJ; Clarke, E; Childs, DTD; Kojima, O; Hogg, RA. 2017 Conference On Lasers And Electro-Optics Europe & European Quantum Electronics Conference. **DOI: 10.1109/CLEOE-EQEC.2017.8086448**
94. The ABC model of recombination reinterpreted: Impact on understanding carrier transport and efficiency droop in InGaN/GaN light emitting diodes. Hopkins, MA; Allsopp, DWE; Kappers, MJ; Oliver, RA; Humphreys, CJ. December 2017. JOURNAL OF APPLIED PHYSICS. Volume 122 Issue 23. **DOI10.1063/1.4986434**
95. Improving a Solid-State Qubit through an Engineered Mesoscopic Environment. G Ethier-Majcher, D Gangloff, R Stockill, E Clarke, M Hugues, C Le Gall, M Atature, Phys. Rev. Lett. 119, 130503, 2017. **DOI: 10.1103/PhysRevLett.119.130503**
96. Hybrid gap plasmon GaAs nanolasers. N B Nguyen, M P Nielsen, L Lafone, E Clarke, P Fry, R P Oulton, Appl. Phys. Lett., Vol.111 (26) 2017. **DOI: 10.1063/1.5008320**
97. Strain Balancing of Metal-Organic Vapour Phase Epitaxy InAs/GaAs Quantum Dot Lasers. Roberts, TS; Stevens, BJ; Clarke, E; Tooley, I; Orchard, J; Farrer, I; Childs, DTD; Babazadeh, N;

Ozaki, N; Mowbray, D; Hogg, RA. November 2017. IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS. Volume 23 Issue 6. **DOI10.1109/JSTQE.2017.2703666**

98. Transmission electron microscopy of AlGaAs/GaAs quantum cascade laser structures. Walther, T; Krysa, AB. December 2017. JOURNAL OF MICROSCOPY. Volume 268 Issue 3 Pages 298-304 Special IssueSI. **DOI10.1111/jmi.12655**
99. Investigation of temperature and temporal stability of AlGaAsSb avalanche photodiodes. Abdullah, S; Tan, CH; Zhou, XX; Zhang, SY; Pinel, L; Ng, JS. December 2017.OPTICS EXPRESS. Volume 25 Issue 26 Page 33610-33616. **DOI10.1364/OE.25.033610**

2018 (31 papers):

100. Exciton Polaritons in a Two-Dimensional Lieb Lattice with Spin-Orbit Coupling, C. E. Whittaker, E. Cancellieri, P. M. Walker, D. R. Gulevich, H. Schomerus, D. Vaitiekus, B. Royall, D. M. Whittaker, E. Clarke, I. V. Iorsh, I. A. Shelykh, M. S. Skolnick and D. N. Krizhanovskii. Phys Rev Lett 120, 097401, 2018. **DOI: 10.1103/PhysRevLett.120.097401.**
101. Semiconductor nanostructure quantum ratchet for high efficiency solar cells. Anthony Vaquero-Stainer, Megumi Yoshida, Nicholas P. Hylton, Andreas Pusch, Oliver Curtin, Mark Frogley, Thomas Wilson, Edmund Clarke, Kenneth Kennedy, Nicholas J. Ekins-Daukes, Ortwin Hess & Chris C. Phillips. Communications Physics, 2018. **DOI: 10.1038/s42005-018-0007-6**
102. Transition from Propagating Polariton Solitons to a Standing Wave Condensate Induced by Interactions. Chana, J. K. Egorov, O. A. Sigurdsson, H. Shelykh, I. A. Sich, M Chana, J K Egorov, O A Sigurdsson, H Shelykh, I A Skryabin, D V Walker, P M Clarke, E Royall, B Skolnick, M S Krizhanovskii, D N Phys. Rev. Lett. 120 167402, 2018. **DOI: 10.1103/PhysRevLett.120.167402**
103. Electro-mechanical control of an on-chip optical beam splitter containing an embedded quantum emitter. Z. K. Bishop, A. P. Foster, B. Royall, C. Bentham, E. Clarke, M. S. Skolnick, L. R. Wilson. Optics Letters. Vol. 43(9), p 2142-2145, 2018. **DOI: 10.1364/OL.43.002142**
104. Electrical control of nonlinear quantum optics in a nano-photonic waveguide. Dominic Hallett, Andrew P. Foster, David L. Hurst, Ben Royall, Pieter Kok, Edmund Clarke, Igor E. Itskevich, A. Mark Fox, Maurice S. Skolnick, and Luke R. Wilson. Optica Vol. 5, 644, 2018. **DOI: 10.1364/OPTICA.5.000644**
105. Optical Microscopy as a probe of the rate limiting transport lifetime in InSb/$Al_{1-x}In_xSb$ quantum wells. McIndo, CJ; Hayes, DG; Papageorgiou, A; Hanks, LA; Smith, GV; Allford, CP; Zhang, S; Clarke, EM; Buckle, PD. 2018. ADVANCES IN QUANTUM TRANSPORT IN LOW DIMENSIONAL SYSTEMS. Volume964. **DOI10.1088/1742-6596/964/1/012005**
106. Coherence of a dynamically decoupled quantum-dot hole spin. R Stockill, E Clarke, M Hugues, C Le Gall, L Huthmacher, R Stockill, E Clarke, M Hugues, C Le Gall, M Atatüre, Physical Review, 97, 2018. **DOI: 10.1103/PhysRevB.97.241413**
107. High Purcell factor generation of indistinguishable on-chip single photons. F Liu, A J Brash, J O'Hara, L M P P Martins, C L Phillips, R J Coles, B Royall, E C Bentham, N Prtljaga, I Itskevich, L R Wilson, M S Skolnick, A M Fox, Nature Nanotechnology, 2018. **DOI: 10.1038/s41565-018-0188-x**

108. InP/InGaP quantum-dot SESAM mode-locked Alexandrite laser. K A Fedorova, A. Krysa, E Rafailov, S Ghanbari, K Fedorova, W A Clarkson, R M Shori, Proceedings of SPIE – the international society for optical engineering, 10511, 928802, 2018. **DOI: 10.1117/12.228440.**

109. A GaInAs/AlInAs quantum cascade laser with an emission wavelength of 5.6 μm. Kovbasa, N. Yu. Raspopov, N. A. Lobintsov, A. V. Kurnyavko, Yu. V. Zasavitskii, I I Kovbasa, N Yu Raspopov, N A Lobintsov, A V Kurnyavko, Yu V Gorlachuk, P V Krysa, A B Revin, D G. IEEE Quantum electronics, 48, p. 472, 2018. **DOI: 10.1070/QEL16592**

110. Femtosecond Alexandrite laser passively mode-locked by an InP/InGaP quantum-dot saturable absorber. K A Fedorova, A B Krysa, E U Rafailov, A G Major, Optics Letters, 43, 232, 2018. **DOI: 10.1364/OL.43.000232**

111. Measurement of the electron-hole pair creation energy in $Al_{0.52}In_{0.48}P$ using X-ray radiation. S Butera, G Lioliou, A B Krysa, A M Barnett, Nuclear instruments & methods in physics research, Vol.879, 64, 2018. (Demonstration of suitability of AlInP as x-ray detector). **DOI: 10.1016/j.nima.2017.10.027**

112. A quantum light-emitting diode for the standard telecom window around 1,550 nm. T Mueller, J Skiba-Szymanska, A B Krysa, J Huwer, M Felle, M Anderson, R M Stevenson, J Heffernan, D A Ritchie, A J Shields, A. J. Nature Communications, 9, 862, 2018. **DOI: 10.1038/s41467-018-03251-7**

113. InAs thermophotovoltaic cells with high quantum efficiency for waste heat recovery applications below 1000 °C. Qi Lu Xinxin Zhou Andrey Krysa Andrew Marshall Peter Carrington Chee-Hing Tan Anthony Krier. Solar energy materials and solar cells, 179, 334, 2018. **DOI: 10.1016/j.solmat.2017.12.031**

114. Spin domains in one-dimensional conservative polariton solitons. M Sich, L E Tapia-Rodriguez, He Sigurdsson, P M Walker, E Clarke, I A Shelykh, B Royall, E S Sedov, A V Kavokin, D V Skryabin, M S Skolnick, D N Krizhanovskii. ACS Photonics, 5, 5095, 2018. **DOI: 10.1021/acsphotonics.8b01410**

115. Epitaxial Designs for Maximizing Efficiency in Resonant Tunneling Diode Based Terahertz Emitters. Baba, R; Stevens, BJ; Mukai, T; Hogg, RA. April 2018. IEEE JOURNAL OF QUANTUM ELECTRONICS. Volume 54 Issue 2. **DOI10.1109/JQE.2018.2797960**

116. Wide Frequency Tuning of Continuous Terahertz Wave Generated by Difference Frequency Mixing under Exciton-Excitation Conditions in a GaAs/AlAs Multiple Quantum Well. O Kojima, Y Tarui, H Shimazu, T Kita, A Majeed, P Ivanov, E Clarke, R Hogg. Phys. Rev. Applied 10, 044035, 2018. **DOI: 10.1103/PhysRevApplied.10.044035**

117. Nonreciprocal transmission and reflection of a chirally coupled quantum dot. D L Hurst, D M Price, C Bentham, M N Makhonin, B Royall, E Clarke, P Kok, L R Wilson, M S Skolnick, A M Fox. Nano Lett, 18, 5475, 2018. **DOI: 10.1021/acs.nanolett.8b01869**

118. Effects of carrier injection profile on low noise thin $Al_{0.85}Ga_{0.15}As_{0.56}Sb_{0.44}$ avalanche photodiodes. L L Pinel, S J Dimler, X Zhou, S Abdullah, Z Salman, T Shiyong, C H Tan, J S Ng, Optics Express, 26, 3568, 2018. (New type of long wavelength APD). **DOI: 10.1364/OE.26.003568**

119. Effect of stacking faults on the photoluminescence spectrum of zincblende GaN. Church, SA; Hammersley, S; Mitchell, PW; Kappers, MJ; Lee, LY ; Massabuau, F (; Sahonta, SL; Frentrup, M;

Shaw, LJ; Wallis, DJ; Humphreys, CJ; Oliver, RA; Binks, DJ; Dawson, P. May 2018. JOURNAL OF APPLIED PHYSICS. Volume 123 Issue 18. **DOI10.1063/1.5026267**

120. Resonant photoluminescence studies of carrier localisation in c-plane InGaN/GaN quantum well structures. Blenkhorn, WE; Schulz, S; Tanner, DSP; Oliver, RA; Kappers, MJ; Humphreys, CJ ; Dawson, P. May 2018. JOURNAL OF PHYSICS-CONDENSED MATTER. Volume 30 Issue 17. **DOI10.1088/1361-648X/aab818**

121. Alloy fluctuations at dislocations in III-Nitrides: identification and impact on optical properties. Massabuau, FCP; Chen, P; Rhode, SL; Horton, MK; O'Hanlon, TJ; Kovács, A; Zielinski, MS; Kappers, MJ; Dunin-Borkowski, RE; Humphreys, CJ; Oliver, RA. 2018. GALLIUM NITRIDE MATERIALS AND DEVICES XIII. Volume 10532. **DOI10.1117/12.2288211**

122. Resonant excitation of quantum emitters in gallium nitride, M Kianinia, R A Oliver, I Aharanovich, Optica 5, 932, 2018. (narrowest linewidth short wavelength single photon emitters). **DOI: 10.1364/OPTICA.5.000932**

123. Effect of growth temperature and V/III-ratio on the surface morphology of MOVPE-grown cubic zincblende GaN. Lee, LY; Frentrup, M; Kappers, MJ; Oliver, RA; Humphreys, CJ; Wallis, DJ. September 2018. JOURNAL OF APPLIED PHYSICS. Volume 124 Issue 10. **DOI10.1063/1.5046801**

124. Hysteretic Photochromic Switching (HPS) in Doubly Doped GaN(Mg):Eu-A Summary of Recent Results. Edwards, PR; O'Donnell, KP; Singh, AK; Cameron, D; Lorenz, K; Yamaga, M; Leach, JH; Kappers, MJ; Bockowski, M. October 2018. MATERIALS. Volume11 Issue 10. **DOI10.3390/ma11101800**

125. Characterisation of InGaN by Photoconductive Atomic Force Microscopy. Weatherley, TFK; Massabuau, FCP; Kappers, MJ; Oliver, RA. October 2018. MATERIALS. Volume11 Issue 10. **DOI10.3390/ma11101794**

126. 6 µm thick AlInP ^{55}Fe x-ray photovoltaic and ^{63}Ni betavoltaic cells. Butera, S; Whitaker, MDC; Krysa, AB; Barnett, AM. October 2018. SEMICONDUCTOR SCIENCE AND TECHNOLOGY. Volume 33 Issue 10. **DOI10.1088/1361-6641/aadb81**

127. $Al_{0.85}$ $Ga_{0.15}$ $As_{0.56}$ $Sb_{0.44}$ avalanche photodiodes with high immunity to temperature fluctuation. Abdullah, S; Zhang, S; Ng, JS; Tan, CH. 2018. OPTICAL SENSING, IMAGING, AND PHOTON COUNTING: FROM X-RAYS TO THZ. Volume 10729. **DOI10.1117/12.2326847**

128. Energy response characterization of InGaP X-ray detectors. Lioliou, G; Krysa, AB; Barnett, AM. November 2018. JOURNAL OF APPLIED PHYSICS. Volume 124 Issue 19. **DOI10.1063/1.5057407**

129. Temperature characterisation of spectroscopic InGaP X-ray photodiodes. Butera, S; Lioliou, G; Krysa, AB; Barnett, AM. November 2018. Nuclear Instruments & Methods In Physics Research Section A-Accelerators Spectrometers Detectors And Associated Equipment. Volume 908 Page 277-284. **DOI10.1016/j.nima.2018.08.064**

130. Photomodulated Reflectivity Measurement of Free-Carrier Dynamics in InGaN/GaN Quantum Wells. Halsall, MP; Crowe, IF; Mullins, J; Oliver, RA; Kappers, MJ; Humphreys, CJ. November 2018. ACS PHOTONICS, Volume 5 Issue 11 Pages 4437-4446. **DOI10.1021/acsphotonics.8b00904**

2019 (31 papers):

131. Network integration and coherent operation of telecom entangled light sources based on semiconductor quantum dots. Huwer, J; Müller, T; Xiang, Z; Anderson, M; Stevenson, RM; Ward, MB; Farrer, I; Krysa, A; Heffernan, J; Ritchie, DA; Shields, AJ; Skiba-Szymanska, J. 2019. 2019 CONFERENCE ON LASERS AND ELECTRO-OPTICS EUROPE & EUROPEAN QUANTUM ELECTRONICS CONFERENCE (CLEO/EUROPE-EQEC). **DOI10.1109/cleoe-eqec.2019.8872283**
132. Quantum interface of an electron and a nuclear ensemble, D A Gangloff, G Éthier-Majcher, C Lang, E V Denning, J H Bodey, D M Jackson, E Clarke, M Hugues, C Le Gall, M Atatüre, Science 364, 62, 2019. (first quantum dot based coherent nuclear based electron spin memory enabled by high quality MBE growth). **DOI: 10.1126/science.aaw2906**
133. InP Quantum Dot Mode-Locked Lasers and Materials Studies. Li, ZB; Shutts, S; Allford, CP; Krysa, AB; Smowton, PM. 2019. 2019 IEEE PHOTONICS CONFERENCE (IPC). **DOI10.1109/ipcon.2019.8908334**
134. Broadband THz absorption spectrometer based on excitonic nonlinear optical effects, A Majeed, P Ivanov, B Stevens, E Clarke, I Butler, D Childs, O Kojima and R Hogg, Light: Science & Applications 8, 29, 2019. (New THz phenomena enabled by high quality crystal growth). **DOI: 10.1038/s41377-019-0137-y**
135. Tunable Photon Statistics Exploiting the Fano Effect in a Waveguide. A P Foster, D Hallett, I V Iorsh, S J Sheldon, M R Godsland, B Royall, E Clarke, I A Shelykh, A M Fox, M S Skolnick, I E Itskevich, L R Wilson. Phys. Rev. Lett. 122, 17, 173603, 2019. **DOI: 10.1103/PhysRevLett.122.173603**
136. Light Scattering from Solid-State Quantum Emitters: Beyond the Atomic Picture. A J Brash, J Iles-Smith, C L Phillips, D P S McCutcheon, J O'Hara, E Clarke, B Royall, L R Wilson, J Mork, M S Skolnick, A M Fox, A Nazir. Phys. Rev. Lett. 123, 16, 167403, 2019. **DOI: 10.1103/PhysRevLett.123.167503**
137. Investigation of stacking faults in MOVPE-grown zincblende GaN by XRD and TEM. Lee, LY; Frentrup, M; Vacek, P; Kappers, MJ; Wallis, DJ; Oliver, RA. March 2019. JOURNAL OF APPLIED PHYSICS Volume 125 Issue 10. **DOI10.1063/1.5082846**
138. Terahertz generation in gallium nitride quantum wells. Roble, AA; Hibberd, MT; Kappers, MJ; Oliver, RA; Graham, DM. 2019. 2019 44TH INTERNATIONAL CONFERENCE ON INFRARED, MILLIMETER, AND TERAHERTZ WAVES (IRMMW-THZ). **DOI10.1109/irmmw-thz.2019.8874174**
139. A comparative study of epitaxial InGaAsBi/InP structures using Rutherford backscattering spectrometry, X-ray diffraction and photoluminescence techniques. M K Sharpe, I P Marko, D A Duffy, J England, E Schneider, M Kesaria, V Federov, E Clarke, C H Tan, S J Sweeney. Journal of Applied Physics 126, 12, 125706, 2019. **DOI: 10.1063/1.5109653**
140. 12.5-GHz InP Quantum Dot Monolithically Mode-Locked Lasers Emitting at 740nm. Z B Li, S Shutts, C P Allford, A B Krysa, P M Smowton. 2019 Conference on Lasers and Electro-Optics, Book Series: Confernce on Lasers and Electro-Optics.

141. Improved Planar InAs Avalanche Photodiodes With Reduced Dark Current and Increased Responsivity. L W Lim, C H Tan, J S Ng, J D Petticrew, A B Krysa. Journal of Lightwave Technology, Vol. 37, 10, 2375-2379, 2019. **DOI: 10.1109/JLT.2019.2905535**
142. AlInP photodiode x-ray detectors. S Zhao, S Butera, G Lioliou, A B Krysa, A M Barnett. Journal of Physics D-Applied Physics, Vol. 52, 22, 225101, 2019. **DOI: 10.1088/1361-6463/ab0d65**
143. InGaP electron spectrometer for high temperature environments. S Butera, G Lioliou, S Zhao, M D C Whitaker, A B Krysa, A M Barnett. Scientific Reports 9, 11096, 2019. **DOI: 10.1038/s41598-019-47531-8**
144. Investigation of MOVPE-grown zincblende GaN nucleation layers on 3C-SiC/Si substrates. Lee, LY; Frentrup, M; Vacek, P; Massabuau, FCP; Kappers, MJ; Wallis, DJ; Oliver, RA. October 2019. JOURNAL OF CRYSTAL GROWTH, Volume 524. **DOI10.1016/j.jcrysgro.2019.125167**
145. InGaN as a Substrate for AC Photoelectrochemical Imaging. Zhou, B; Das, A; Kappers, MJ; Oliver, RA; Humphreys, CJ ; Krause, S. October 2019. SENSORS Volume 19 Issue 20. **DOI10.3390/s19204386**
146. High temperature AlInP X-ray spectrometers. S Zhao, S Butera, G Lioliou, A B Krysa, A M Barnett. Scientific Reports 9, 12155, 2019. **DOI: 10.1038/s41598-019-48394-9**
147. Characterisation of Thin-Layer Resonant Tunnelling Diodes grown by MOVPE. Baba, R; Kojima, O; Jacobs, KJP; Harrison, BA; Stevens, BJ; Mukai, T; Hogg, RA. 2019. QUANTUM DOTS AND NANOSTRUCTURES: GROWTH, CHARACTERIZATION, AND MODELING XVI. Volume 10929. **DOI10.1117/12.2510119**
148. Non-destructive characterisation of thin layer resonant tunneling diodes. R Baba, K P Jacobs, B A Harrison, B Stevens, T Mukai, R A Hogg. Journal of Applied Physics. Vol. 126, 12, 124304, 2019. **DOI: 10.1063/1.5113585**
149. Development of All-Semiconductor Photonic Crystal Surface Emitting Lasers. Taylor, RJE; Childs, DTD; Li, GR; Surma, J; Bian, ZJ; King, BC; Boldin, A; Ignatova, O; Thoms, S; Stevens, BJ; Roberts, TS; Harrison, B; Orchard, J; Gerrard, ND; Ivanov, P; McKenzie, A; Hogg, RA. 2019 Conference on Lasers and Electro-Optics. **DOI: 10.1109/BICOP.2018.8658345**
150. Proposal for Common Active 1.3-μm Quantum Dot Electroabsorption Modulated DFB Laser. Sobhani, SA; Stevens, BJ; Babazadeh, N; Takemasa, K; Nishi, K; Sugawara, M; Hogg, RA; Childs, DTD. March 2019. IEEE PHOTONICS TECHNOLOGY LETTERS. Volume 31 Issue 6 Page 419-422. **DOI10.1109/LPT.2018.2890641**
151. Effect of photonic spin-orbit coupling on the topological edge modes of a Su-Schriefer-Heeger chain. C E Whittaker, E Cancellieri, P M Walker, B Roya, L E T Rodriguez, E Clarke, D M Whittaker, H Schomerus, M S Skolnick, D N Krizhanvoskii. Physical Review B, Vol. 99, 8, 081402, 2019. **DOI: 10.1103/PhysRevB99.081402**
152. Telecommunication wavelength confined Tamm plasmon structures containing InAs/GaAs quantum dot emitters at room temperature. M Parker, E Harbord, Lifeng Chen, E Clarke, K Kennedy, J Rarity, R Oulton. Physical Review B 100, 165306, 2019. **DOI: 10.1103/PhysRevB.100.165306**
153. Confined Tamm optical states coupled to quantum dots in a photoconductive detector. E Harbord, B Cemlyn, M Parker, E Clarke, K Kennedy, I Henning, M Adams, R Oulton. Appl.Phys.Lett. 115, 171101, 2019. **DOI: 10.1063/1.5121597**

154. Optical and structural properties of dislocations in InGaN. Massabuau, FCP; Horton, MK; Pearce, E; Hammersley, S; Chen, P; Zielinski, MS; Weatherley, TFK; Divitini, G; Edwards, PR; Kappers, MJ; McAleese, C; Moram, MA; Humphreys, CJ; Dawson, P; Oliver, RA. April 2019. JOURNAL OF APPLIED PHYSICS. Volume 125 Issue 16. **DOI10.1063/1.5084330**

155. Degradation of III-V quantum dot lasers grown directly on silicon substrates. S Shutts, Craig P Allford, C Spinnler, Z Li, A Sobiersierski, M Tang, H Liu, P M Smowton. Journal of Selected Topics in Quantum Electronics, Vol. 25, 6, 2019. **DOI: 10.1109/JSTQE.2019.2915994**

156. Self-formed quantum wires and dots in GaAsP-GaAsP core shell nanowires. A A Fonseka, A V Velichko, Y Zhang, J A Gott, G D Davis, R Beanland, H Liu, D J Mowbray, A M Sanchez. Nano Lett 19, 6, 4158-4165, 2019. **DOI: 10/1021/acs.nanolett.9b01673**

157. Optical properties of *c*-Plane InGaN/GaN single quantum wells as a function of total electric field strength. G M Christian, S Schulz, S Hammersley, M J Kappers, M Frentrup, C J Humphreys, R A Oliver, P Dawson. Japanese Journal of Applied Physics, Vol. 58, no. SCCB09, 2019. **DOI: 10.7567/1347-4065/ab0407**

158. Light-output enhancement of InGaN light emitting diodes regrown on nanoporous distributed Bragg reflector substrates. J C Jarman, T Zhu, P H Griffin, R A Oliver. Japanese Journal of Applied Physics, Vol. 58, SC14, 2019. **DOI: 10.17863/CAM.37335**

159. Thick, Adherent Diamond Films on AlN with Low Thermal Barrier Resistance; Soumen Mandal, Chao Yuan, Fabien Massabuau, James W. Pomeroy, Jerome Cuenca, Henry Bland, Evan Thomas, David Wallis, Tim Batten, David Morgan, Rachel Oliver, Martin Kuball, Oliver A. Williams, ACS Appl. Mater. Interfaces 11, 43, 40826, 2019. **DOI:10.1021/acsami.9b13869**

160. Optical spin locking of a solid-state qubit. Bodey, JH; Stockill, R; Denning, EV; Gangloff, DA ; Ethier-Majcher, G; Jackson, DM; Clarke, E; Hugues, M; Le Gall, C; Atature, M. NPJ Quantum Information, Vol.5, 95, 2019. **DOI: 10.1038/s41534-019-0206-3**

161. X-ray spectroscopy with an AlInP photodiode. G.Lioliou , S.Butera, A.B.Krysa, A.M.Barnett. Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment. Volume 943, 1 November 2019, 162467. **DOI: 10.1016/j.nima.2019.162467**

2020 (40 papers):

162. A semiconductor topological photonic ring resonator. Mehrabad, MJ; Foster, AP; Dost, R; Clarke, E; Patil, PK; Farrer, I; Heffernan, J; Skolnick, MS; Wilson, LR. Applied Physics Letters, Vol. 116, 6, 2020. **DOI: 10.1063/1.5131846**

163. Quantum teleportation using highly coherent emission from telecom C-band quantum dots. M. Anderson, T. Müller, J. Huwer, J. Skiba-Szymanska, A. B. Krysa, R. M. Stevenson, J. Heffernan, D. A. Ritchie, A. J. Shields. NPJ Quantum Information. **6** (1), 14, 2020. **DOI: 10.1038/s41534-020-0249-5.**

164. Improved ambient stability of thermally annealed zinc nitride thin films. Trapalis, A; Farrer, I; Kennedy, K; Kean, A; Sharman, J; Heffernan, J. March 2020. AIP ADVANCES. Volume 10 Issue 3. **DOI10.1063/1.5144054**

165. GaN-on-diamond technology platform: Bonding-free membrane manufacturing process. Matthew D. Smith, Jerome A. Cuenca, Daniel E. Field, Yen-chun Fu, Chao Yuan, Fabien Massabuau, Soumen Mandal, James W. Pomeroy, Rachel A. Oliver, Michael J. Uren, Khaled Elgaid , Oliver A. Williams , Iain Thayne , Martin Kuball. AIP Advances 10, 035306, 2020. **DOI: 10.1063/1.5129229.**

166. MOVPE-Grown Quantum Cascade Laser Structures Studied by Kelvin Probe Force Microscopy. Konstantin Ladutenko, Vadim Evtikhiev, Dmitry Revin and Andrey Krysa. Crystals 2020, 10, 129, 2020. **DOI: 10.3390/cryst10020129.**

167. Quantum cascade laser with bound-to-quasi-continuum optical transitions at a temperature of up to 371 K. Molodtsov, IS; Raspopov, NA; Lobintsov, AV; Danilov, AI; Krysa, AB; Zasavitskii, II. 2020. QUANTUM ELECTRONICS. Volume 50 Issue 8 Page 710-713. **DOI10.1070/QEL17317**

168. AlInP X-ray photodiodes without incomplete charge collection noise. S. Zhao, G. Lioliou, S. Butera, A.B. Krysa, A.M. Barnett. Nuclear Inst. and Methods in Physics Research, A. 2020. **DOI: 10.1016/j.nima.2020.163606.**

169. Gigahertz-Clocked Teleportation of Time-Bin Qubits with a Quantum Dot in the Telecommunication C Band. Anderson, M; Muller, T; Skiba-Szymanska, J; Krysa, AB; Huwer, J; Stevenson, RM; Heffernan, J; Ritchie, DA; Shields, AJ. Phys.Rev.Applied, 13, 5, 054052, 2020. **DOI: 10.1103/PhysRevApplied.13.054052**

170. Self-catalyzed GaAs(P) nanowires and their application for solar cells. Zhang, Yunyan; Liu, Huiyun). Journal of Physics D-Applied Physics. Vol. 53, 23, 233001. 2020. **DOI: 10.1088/1361-6463/ab77dd**

171. Operation of semiconductor telecom entangled photon sources over installed fiber networks. Huwer, J; Xiang, Z; Shooter, G; Skiba-Szymanska, J; Müller, T; Ellis, DJP; Anderson, M; Müller, JRA; Mitchell, T; Griffiths, J; Stevenson, RM; Krysa, A; Heffernan, J; Farrer, I; Ritchie, DA ; Shields, AJ. 2020. 2020 Conference on Lasers and Electro-Optics. Indexed 2020-01-01.

172. Heterostructure and Q-factor engineering for low-threshold and persistent nanowire lasing. Skalsky, Stefan ; Zhang, Yunyan ; Alanis, Juan Arturo; Fonseka, H. Aruni ; Sanchez, Ana M.; Liu, Huiyun; Parkinson, Patrick. Light-Science & Applications. Vol. 9, 1, 43, 2020. **DOI: 10.1038/s41377-020-0279-y**

173. Continuous-wave quantum dot photonic crystal lasers grown on on-axis Si (001). Zhou, Taojie ; Tang, Mingchu; Xiang, Guohong; Xiang, Boyuan ; Hark, Suikong; Martin, Mickael ; Baron, Thierry ; Pan, Shujie; Park, Jae-Seong ; Liu, Zizhuo ; Chen, Siming ; Zhang, Zhaoyu; Liu, Huiyun. Nature Communications. Vol. 11, 1, 977, 2020. **DOI: 10.1038/s41467-020-14736-9**

174. Optical Control of Couplings in Polariton Condensate Lattices. S. Alyatkin, J. D. Töpfer, A. Askitopoulos, H. Sigurdsson, and P. G. Lagoudakis. Phys. Rev. Lett. 124, 207402, 2020. **DOI: 10.1103/PhysRevLett.124.207402.**

175. InAs/InP Quantum Dots in Etched Pits by Droplet Epitaxy in Metalorganic Vapor Phase Epitaxy. Elisa Maddalena Sala, Young In Na, Max Godsland, Aristotelis Trapalis, and Jon Heffernan. Phys. Status Solidi Rapid Research Letter, 2020, 2000173. **DOI: 10.1002/pssr.202000173**

176. Electrical and optical characterisation of low temperature grown InGaAs for photodiode applications. Lim, Leh Woon; Patil, Pallavi; Marko, Igor P.; Clarke, Edmund; Sweeney, Stephen J.;

Ng, Jo Shien; David, John P. R.; Tan, Chee Hing. Semiconductor Science and Technology. Vol: 35, 9, 095031. 2020. **DOI: 10.1088/1361-6641/aba167**

177. Purcell enhancement of a deterministically coupled quantum dot in an SU-8 laserpatterned photonic crystal heterostructure. Shao, G. Ying, S. A. Lennon, F. S. F. Brossard, J. P. Griffiths, L. P. Nuttall, V. Osokin, E. Clarke, H. He, and R. A. Taylor. Appl. Phys. Lett. 117, 043103 (2020). **DOI: 10.1063/5.0018673**

178. GaAs/Al0.8Ga0.2As separate absorption and multiplication region x-ray spectroscopic avalanche photodiodes. M. D. C. Whitaker, G. Lioliou, A. B. Krysa, & A. M. Barnett. J. Appl. Phys. 128, 015704, 2020. **DOI: 10.1063/5.0009830.**

179. Al0.6Ga0.4As x-ray avalanche photodiodes for spectroscopy. M D C Whitaker, G Lioliou, A B Krysa & A M Barnett. Semiconductor Science & Technology. Vol. 35, 9, 095026. 2020. **DOI: 10.1088/1361-6641/ab9f8e**

180. InGaAs x-ray photodiode for spectroscopy. M D C Whitaker, G Lioliou, A B Krysa & A M Barnett. Materials Research Express, Vol. 7, 10, 105901. 2020. **DOI: 10.1088/2053-1591/abbaf9**

181. A needle in a needlestack: exploiting functional inhomogeneity for optimized nanowire lasing. Parkinson, Patrick; Alanis, Juan A.; Skalsky, Stefan; Zhang, Yunyan; Liu, Huiyun; Lysevych, Mykhaylo; Tan, Hark Hoe; Jagadish, Chennupati. 2020. **DOI: 10.1117/12.2558405**

182. Origin of Defect Tolerance in InAs/GaAs Quantum Dot Lasers Grown on Silicon. Liu, Zizhuo; Martin, Mickael; Baron, Thierry; Chen, Siming; Seeds, Alwyn; Penty, Richard; White, Ian; Liu, Huiyun; Hantschmann, Constanze; Tang, Mingchu; Lu, Ying; Park, Jae-Seong; Liao, Mengya; Pan, Shujie; Sanchez, Ana; Beanland, Richard. Journal of Lightwave Technology. Vol. 38, 2, 240-248. 2020. **DOI: 10.1109/JLT.2019.2925598**

183. Checked patterned elemental distribution in AlGaAs nanowire branches via vapor-liquid-solid growth. Boras, Giorgos; Yu, Xuezhe; Fonseka, H. Aruni; Zhang, Dong; Zeng, Haotian; Sanchez, Ana M.; Liu, Huiyun. Nanoscale. Vol. 12, 29, 15711-15720. 2020. **DOI: 10.1039/d0nr02577a**

184. Inversion Boundary Annihilation in GaAs Monolithically Grown on On-Axis Silicon (001). Li, Keshuang; Yang, Junjie; Lu, Ying; Tang, Mingchu; Jurczak, Pamela; Liu, Zizhuo; Yu, Xuezhe; Park, Jae-Seong; Deng, Huiwen; Jia, Hui; Dang, Manyu; Sanchez, Ana M.; Beanland, Richard; Li, Wei; Han, Xiaodong; Zhang, Jin-Chuan; Wang, Huan; Liu, Fengqi; Chen, Siming; Seeds, Alwyn; Smowton, Peter; Liu, Huiyun. Advanced Optical Materials. Article no. 2000970, 2020. **DOI: 10.1002/adom.202000970**

185. Monolithic InP Quantum Dot Mode-Locked Lasers Emitting at 730 nm. Li, ZB; Allford, CP; Shutts, S; Forrest, AF; Alharbi, R; Krysa, AB; Cataluna, MA ; Smowton, PM. September 2020. IEEE PHOTONICS TECHNOLOGY LETTERS. Volume 32 Issue 17 Page 1073-1076. **DOI10.1109/LPT.2020.3012568**

186. Droplet manipulation and horizontal growth of high-quality self-catalysed GaAsP nanowires. Zhang, Yunyan; Sanchez, Ana M.; Aagesen, Martin; Fonseka, H. Aruni; Huo, Suguo; Liu, Huiyun. Nano Today. Vol. 34 Article Number: 100921. 2020. **DOI: 10.1016/j.nantod.2020.100921**

187. Preferred growth direction of III-V nanowires on differently oriented Si substrates. Zeng, Haotian; Yu, Xuezhe; Fonseka, H. Aruni; Boras, Giorgos; Jurczak, Pamela; Wang, Tao; Sanchez, Ana M.; Liu, Huiyun. Nanotechnology. Vol. 31, 47, 475708. 2020. **DOI: 10.1088/1361-6528/abafd7**

188. Impact of ex-situ annealing on strain and composition of MBE grown GeSn. Jia, H., Jurczak, P., Yang, J., Tang, M., Li, K., Deng, H., & Liu, H. 2020. Journal of Physics D: Applied Physics, 53(48), 485104. **DOI: 10.1088/1361-6463/abae94**

189. All-MBE grown InAs/GaAs quantum dot lasers with thin Ge buffer layer on Si substrates. Yang, J; Liu, Z; Jurczak, P; Tang, M; Li, K; Pan, S; Sanchez, AM; Beanland, R; Zhang, J; Wang, H; Liu, F-Q; Li, Z; Shutts, S; Smowton, PM; Chen, S; Seeds, A; Liu, H. 2020. Journal of Physics D: Applied Physics, 54(3), 035103. **DOI: 10.1088/1361-6463/abbb49**

190. Impact of alloy fluctuations and Coulomb effects on the electronic and optical properties of c-plane GaN/AlGaN quantum wells (vol 9, 18862, 2019). Roble, AA; Patra, SK; Massabuau, F; Frentrup, M; Leontiadou, MA; Dawson, P; Kappers, MJ ; Oliver, RA; Graham, DM; Schulz, S. March 2020. SCIENTIFIC REPORTS. Volume 10 Issue 1. **DOI10.1038/s41598-020-62494-x**

191. Acceptor state anchoring in gallium nitride. Cameron, D; O'Donnell, KP; Edwards, PR; Peres, M; Lorenz, K; Kappers, MJ; Bockowski, M. March 2020. APPLIED PHYSICS LETTER. Volume 116 Issue 10. **DOI10.1063/1.5142168**

192. Polar (In,Ga)N/GaN Quantum Wells. Tanner, DSP; Dawson, P; Kappers, MJ; Oliver, RA; Schulz, S. April 2020. PHYSICAL REVIEW APPLIED. Volume 13 Issue 4. **DOI10.1103/PhysRevApplied.13.044068**

193. Cross-shaped markers for the preparation of site-specific transmission electron microscopy lamellae using focused ion beam techniques. O'Hanlon, TJ; Bao, A; Massabuau, FCP; Kappers, MJ; Oliver, RA. May 2020. ULTRAMICROSCOPY Volume212. **DOI10.1016/j.ultramic.2020.112970**

194. Mixed-size diamond seeding for low-thermal-barrier growth of CVD diamond onto GaN and AlN. E. J. W. Smith, A. H. Piracha, D. Field, J. W. Pomeroy, G. R. Mackenzie, Z. Abdallah, F. C.-P. Massabuau, A. M. Hinz, D. J. Wallis, R. A. Oliver, M. Kuball, and P. W. May. Carbon 167, 620. 2020. **DOI: 10.1016/j.carbon.2020.05.050**

195. Stacking fault-associated polarized surface-emitted photoluminescence from zincblende InGaN/GaN quantum wells. Church, SA; Ding, B; Mitchell, PW; Kappers, MJ; Frentrup, M; Kusch, G; Fairclough, SM; Wallis, DJ; Oliver, RA; Binks, DJ. July 2020. APPLIED PHYSICS LETTERS, Volume 117 Issue3. **DOI10.1063/5.0012131**

196. Chiral topological photonics with an embedded quantum emitter. Mehrabad, Mahmoud Jalali, Foster, Andrew P., Dost, Rene, Clarke, Edmund, Patil, Pallavi K., Fox, A. Mark, Skolnick, Maurice S., Wilson, Luke R. OPTICA, Vol. 7, 12, 1690-1696. 2020. **DOI: 10.1364/OPTICA.393035**

197. Optical analogue of Dresselhaus spin-orbit interaction in photonic graphene. Whittaker, C. E., Dowling, T., Nalitov, Yulin, A., V., Royall, B., Clarke, E., Skolnick, M. S., Shelykh, I. A., Krizhanovskii, D. N. Nature Photonics. **DOI: 10.1038/s41566-020-00729-z**

198. 1GHz clocked distribution of electrically generated entangled photon pairs. Ginny Shooter, Zi-Heng Xiang, Jonathan R. A Müller, Joanna Skiba-Szymanska, Jan Huwer, Jonathan Griffiths, Thomas Mitchell, Matthew Anderson, Tina Müller, Andrey B. Krysa, R. Mark Stevenson, Jon Heffernan, David A. Ritchie, and Andrew J. Shields. Optics Express. Vol. 28, 24, pp 36838-36848. 2020**. DOI: 10.1364/OE.405466**

199. Alloy segregation at stacking faults in zincblende GaN heterostructures. Ding, B; Frentrup, M; Fairclough, SM; Kappers, MJ; Jain, M; Kovács, A; Wallis, DJ; Oliver, RA. October 2020. JOURNAL OF APPLIED PHYSICS, Volume 128, Issue 14, **DOI10.1063/5.0015157**

200. Heteroepitaxial Growth of III-V Semiconductors on Silicon. Jae-Seong Park, Mingchu Tang, Siming Chen and Huiyun Liu. Crystals. Vol. 10, 12, 1163. 2020. **DOI: 10.3390/cryst10121163**

201. Crystalline Interlayers for Reducing the Effective Thermal BoundaryResistance in GaN-on-Diamond. Daniel E. Field, Jerome A. Cuenca, Matthew Smith, Simon M. Fairclough, Fabien C-P. Massabuau,James W. Pomeroy, Oliver Williams, Rachel A. Oliver, Iain Thayne, and Martin Kuball. Appl. Mater. Interfaces. 2020, 12, 54138−54145. **DOI: 10.1021/acsami.0c10129**

2021 (47 papers):

202. Coherence in single photon emission from droplet epitaxy and Stranski–Krastanov quantum dots in the telecom C-band. M. Anderson, T. Müller, J. Skiba-Szymanska, A. B. Krysa, J. Huwer, R. M. Stevenson, J. Heffernan, D. A. Ritchie, and A. J. Shields. January 2021. Appl. Phys. Lett. 118, 014003.2021**. DOI: 10.1063/5.0032128**

203. Quantum sensing of a coherent single spin excitation in a nuclear ensemble. D. M. Jackson, D. A. Gangloff, J. H. Bodey, L. Zaporski, C. Bachorz, E. Clarke, M. Hugues, C. Le Gall, M. Atatüre. Nature Phys. 17, 585. 2021. **DOI: 10.1038/s41567-020-01161-4**

204. Effect of Cap Thickness on InAs/InP Quantum Dots Grown by Droplet Epitaxy in MOVPE. Dr. Elisa Maddalena Sala, Max Godsland, Dr. Aristotelis Trapalis, Prof. Jon Heffernan. IPSS Rapid Research Letters. 2021. **DOI: 10.1002/pssr.202100283**

205. Origin(s) of Anomalous Substrate Conduction in MOVPE-Grown GaN HEMTs on Highly Resistive Silicon. S. Ghosh, A. M. Hinz, S. M. Fairclough, B. F. Spiridon, A. Eblabla, M. A. Casbon, M. J. Kappers, K. Elgaid, S. Alam, R. A. Oliver, and D. J. Wallis. ACS Appl. Electron. Mater. 3, 813 2021. **DOI: 10.1021/acsaelm.0c00966**

206. Measuring, controlling and exploiting heterogeneity in optoelectronic nanowires. Al-Abri, R; Choi, H and Parkinson, P. February 2021. Journal of Physics: Photonics, Volume 3, Number 2. **DOI 10.1088/2515-7647/abe282**

207. Photoluminescence excitation spectroscopy for structural and electronic characterization of resonant tunneling diodes for THz applications. Cito, M; Kojima, O; Stevens, BJ; Mukai, T; Hogg, RA. March 2021. AIP ADVANCES. Volume11 Issue 3. **DOI10.1063/5.0035394**

208. InGaP 2 x 2 pixel array for X-ray and gamma-ray spectroscopy. Butera, S., Lioliou, G, Zhao, S, Krysa, A.B., Barnett, A.M. Nuclear Methods Inst. in Physics Research. Vol. 1010, No.165549. 2021.**DOI: 10.1016/j.nima.2021.165549**

209. X-/γ-ray photon counting spectroscopy with an AlInP array. G. Lioliou, A.B. Krysa, A.M. Barnett. Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment. Vol. 1002, 165293. 2021. **DOI: 10.1016j.nima.2021.165293.**

210. Corrigendum to "X-/γ-ray photon counting spectroscopy with an AlInP array". G. Lioliou, A.B. Krysa, A.M. Barnett. Nuclear Inst. and Methods in Physics Research, A Vol. 1006, Issue 1. 2021. **DOI: 10.1016/j.nima. 2021.165436.**

211. Thermal stress modelling of diamond on GaN/III-Nitride membranes. J. A. Cuenca, M. D. Smith, D. E. Field, F. C.-P. Massabuau, S. Mandal, J. Pomeroy, D. J. Wallis, R. A. Oliver, I. Thayne, M. Kuball, and O. A. Williams. April 2021.Carbon 174, 647. **DOI: 10.1016/j.carbon.2020.11.067**

212. The response of thick (10 μm) AlInP x-ray and γ-ray detectors at up to 88 keV. Lioliou, G., Butera, S., Krysa, A.B., Barnett, A.M. J. Applied Physics. Vol.129, 24, No. 243105. 2021. **DOI: 10.1063/5.0050751**

213. Radiation tolerance of $GaAs_{1-x}Sb_x$ solar cells. Hadi Afshari,Brandon, K.Durant, TristanThrashera, Logan Abshire, Vincent R Whiteside, Shun Chan, Dongyoung Kim, Sabina Hatch, MingchuTang, Jeremiah S.McNatt, Huiyun Liu, Martha R.McCartney, David J.Smith, Ian R.Sellers. Solar Energy Materials and Solar Cells. Vol. 233. 111352. 2021. **DOI: 10.1016/j.solmat.2021.111352**

214. Polarization properties of Raman scattering by surface phonon polaritons in GaAsP nanowires. Sergey I Rybchenko, Sarfraz Ali, Yunyan Zhang, Huiyun Liu. J. Phys. D: Appl. Phys., 54 475109. 2021. **DOI: 10.1088/1361-6463/ac2400.**

215. Optimizing GaAs nanowire-based visible-light photodetectors. Xiao Li, Xuezhe Yu, Haotian Zeng, Giorgos Boras, Kai Shen, Yunyan Zhang, Jiang Wu, Kwang Leong Choy, Huiyun Liu. Appl.Phys.Lett.119, 053105. 2021. **DOI: 10.1063/5.0059438**.

216. Influence of diameter on temperature dynamics of hot carriers in photoexcited GaAsP nanowires. Aswathi K. Sivan, Lorenzo Di Mario, Yunyan Zhang, Daniele Catone, Patrick O'Keeffe, Stefano Turchini, Valentina Mussi, Huiyun Liu, and Faustino Martelli, Phys. Rev. B Vol. 104, 4. 2021. **DOI: 10.1103/PhysRevB.104.045423.**

217. Self-Catalyzed AlGaAs Nanowires and AlGaAs/GaAs Nanowire-Quantum Dots on Si Substrates. Boras, G; Yu, XZ; Fonseka, HA; Davis, G; Velichko, AV; Gott, JA; Zeng, HT; Wu, SY; Parkinson, P; Xu, XL; Mowbray, D; Sanchez, AM; Liu, HY. 2021. Journal of Physical Chemistry C 125, 26, 14338-14347. **DOI: 10.1021/acs.jpcc.1c03680**

218. Monolithic and hybrid integration of InAs/GaAs quantum dot microdisk lasers on silicon. Kryzhanovskaya, N; Moiseev, E; Nadtochiy, A; Maximov, M; Dragunova, A; Fetisova, M; Kulagina, M; Guseva, Y; Mintairov, S; Kalyuzhnyy, N; Tang, M; Liao, M; Wu, J; Chen, S ; Liu, H; Zhukov, A. Integrated Optics: Design, Devices, Systems & Applications VI. 11775, 117750P. **DOI: 10.1117/12.2589118**

219. Defect-Free Axially Stacked GaAs/GaAsP Nanowire Quantum Dots with Strong Carrier Confinement, Yunyan Zhang, Anton V. Velichko, H. Aruni Fonseka, Patrick Parkinson, James A. Gott, George Davis, Martin Aagesen, Ana M. Sanchez, David Mowbray, and Huiyun Liu, Nano Lett. Vol. 21, 13, 5722–5729. 2021. **DOI: 10.1021/acs.nanolett.1c01461**

220. Single-mode photonic crystal nanobeam lasers monolithically grown on Si for dense integration. Taojie Zhou, Mingchu Tang, Haochuan Li, Zhan Zhang, Yuzhou Cui, Jae-seong Park, Mickael Martin, Thierry Baron, Siming Chen, Huiyun Liu, Zhaoyu Zhang. IEEE Journal of Selected Topics in Quantum Electronics. 2021. **DOI: 10.1109/JSTQE.2021.3133546.**

221. Fundamental limits of electron and nuclear spin qubit lifetimes in an isolated self-assembled quantum dot. Gillard, G, Griffiths, IM, Ragunathan, G, Ulhaq, A, McEwan, C, Clarke, E,

Chekhovich, EA. NPJ Quantum Information. Vol. 7, 1, 43. 2021. **DOI: 10.1038/s41534-021-00378-2**.

222. Micro-PL analysis of high current density resonant tunneling diodes for THz applications. M. Cito, D. Cimbri, D. Childs, R. Baba,B. A. Harrison, A. Watt,T. Mukai, E. Wasige, and R. A. Hogg. Appl. Phys. Lett. 119, 072102. 2021. **DOI: 10.1063/5.005933**9.
223. Optical and magnetic control of orbital flat bands in a polariton Lieb lattice. C. E. Whittaker, D. R. Gulevich, D. Biegańska, B. Royall, E. Clarke, M. S. Skolnick, I. A. Shelykh, and D. N. Krizhanovskii. Phys. Rev. A 104, 063505. 2021. **DOI: 10.1103/PhysRevA.104.063505.**
224. Witnessing quantum correlations in a nuclear ensemble via an electron spin qubit. D. A. Gangloff, L. Zaporski, J. H. Bodey, C. Bachorz, D. M. Jackson, G. Éthier-Majcher, C. Lang, E. Clarke, M Hugues, C. Le Gall, M. Atatüre. Nature Phys. **17**, 1247. 2021. **DOI: 10.1038/s41567-021-01344-7.**
225. Refractive indices of MBE-grown AlxGa(1-x)As ternary alloys in the transparent wavelength region. Papatryfonos, Konstantinos, Angelova, Todora, Brimont, Antoine, Reid, Barry, Guldin, Stefan, Smith, Peter Raymond, Tang, Mingchu, Li, Keshuang, Seeds, Alwyn J, Liu, Huiyun, Selviah, David R. 2021. AIP Advances 11, 2, 025327. **DOI: 10.1063/5.0039631**
226. Robust Protection of III-V Nanowires in Water Splitting by a Thin Compact TiO2 Layer. Fan Cui, Yunyan Zhang, H. Aruni Fonseka, Premrudee Promdet, Ali Imran Channa, Mingqing Wang, Xueming Xia, Sanjayan Sathasivam, Hezhuang Liu, Ivan P. Parkin, Hui Yang, Ting Li, Kwang-Leong Choy, Jiang Wu, Christopher Blackman, Ana M. Sanchez, and Huiyun Liu. 2021. ACS Applied Materials & Sciences 13, 26, 30950-30958. **DOI: 10.1021/acsami.1c03903**
227. Point Defects in InGaN/GaN Core-Shell Nanorods: Role of the Regrowth Interface. K Loeto, G Kusch, P-M Coulon, SM Fairclough, E Le Boulbar, I Girgel, PA Shields and RA Oliver. 2021. Nano Express 2, 1, 014005. **DOI: 10.1088/2632-959X/abe990.**
228. Combined SEM-CL and STEM investigation of green InGaN quantum wells. B Ding, J Jarman, M J Kappers and R A Oliver. 2021. Journals of Physics D-Applied Physics 54, 16, 165107. **DOI: 10.1088/1361-6463/abddf8.**
229. Impact Ionization Coefficients in $(Al_xGa_{1-x})_{0.52}In_{0.48}P$ and $Al_xGa_{1-x}As$ Lattice-Matched to GaAs. Lewis, HIJ; Qiao, L; Cheong, JS; Baharuddin, ANAP; Krysa, AB; Ng, BK; Green, JE; David, JPR. August 2021. IEEE TRANSACTIONS ON ELECTRON DEVICES. Volume 68 Issue 8 Page 4045-4050. **DOI10.1109/TED.2021.3086800**
230. Experimental observation of topological Z(2) exciton-polaritons in transition metal dichalcogenide monolayers. Mengyao Li, Ivan Sinev, Fedor Benimetskiy, Tatyana Ivanova, Ekaterina Khestanova, Svetlana Kiriushechkina, Anton Vakulenko, Sriram Guddala, Maurice Skolnick, Vinod M. Menon, Dmitry Krizhanovskii, Andrea Alù, Anton Samusev & Alexander B. Khanikaev. 2021. Nature Communications 12, 1, 4425. **DOI: 10.1038/s41467-021-24728-y.**
231. Multimicroscopy of cross-section zincblende GaN LED heterostructure. Boning Ding, Martin Frentrup, Simon M. Fairclough, Gunnar Kusch, Menno J. Kappers, David J. Wallis *and* Rachel A. Oliver. 2021. Journal of Applied Physics 130, 11, 115705. **DOI: 10.1063/5.0058429**
232. A prototype AlInP electron spectrometer. Whitaker, MDC; Butera, S; Lioliou, G; Krysa, AB; Barnett, AM. October 2021. Planetary And Space Science. Volume205. **DOI10.1016/j.pss.2021.105284**

233. Photoluminescence efficiency of zincblende InGaN/GaN quantum wells. S. A. Church, M. Quinn, K. Cooley-Greene, B. Ding, A. Gundimeda, M. J. Kappers, M. Frentrup, D. J. Wallis, R. A. Oliver, *and* D. J. Binks. 2021. Journal of Applied Physics 127, 17, 175702. **DOI: 10.1063/5.0046649**
234. Method for inferring the mechanical strain of GaN-on-Si epitaxial layers using optical profilometry and finite element analysis. Spiridon, BF; Toon, M; Hinz, A; Ghosh, S; Fairclough, SM; Guilhabert, BJE; Strain, MJ; Watson, IM; Dawson, MD; Wallis, DJ; Oliver, RA. 2021. Optical Materials Express 11, 6, 1643-1655. **DOI: 10.1364/OME.418728**
235. Pure single-photon emission from an InGaN/GaN quantum dot. Holmes, MJ; Zhu, T; Massabuau, FCP; Jarman, J; Oliver, RA; Arakawa, Y. 2021. APL Materials 9, 6, 061106. **DOI: 10.1063/5.0049488**
236. The effect of thermal annealing on the optical properties of Mg-doped zincblende GaN epilayers. D. Dyer, S. A. Church, M. Jain, M. J. Kappers, M. Frentrup, D. J. Wallis, R. A. Oliver, *and* D. J. Binks. 2021. Journal of Applied Physics 130, 8, 085705. **DOI: 10.1063/5.0057824**
237. Lattice Location Studies of the Amphoteric Nature of Implanted Mg in GaN. Ulrich Wahl, João Guilherme Correia, Ângelo R. G. Costa, Eric David-Bosne, Menno J. Kappers, Manuel Ribeiro da Silva, Gertjan Lippertz, Tiago A. L. Lima, Renan Villarreal, André Vantomme, Lino M. C. Pereira. 2021. Advances Electronic Materials 7, 9, 2100345. **DOI: 10.1002/aelm.202100345**
238. Effect of Si-doped InGaN underlayers on photoluminescence efficiency and recombination dynamics in InGaN/GaN quantum wells. S A Church, G M Christian, R M Barrett, S Hammersley, M J Kappers, M Frentrup, R A Oliver and D J Binks. 2021. Journal of Physics D-Applied Physics 54, 47, 475104. **DOI: 10.1088/1361-6463/ac22d3**
239. Defect structures in (001) zincblende GaN/3C-SiC nucleation layers. Petr Vacek, Martin Frentrup, Lok Yi Lee, Fabien C.-P. Massabuau, Menno J. Kappers, David J. Wallis, Roman Gröger, *and* Rachel A. Oliver. 2021. Journal of Applied Physics 129, 15, 155306. **DOI: 10.1063/5.0036366**
240. Exciton-polaritons in GaAs-based slab waveguide photonic crystals. Whittaker, C. E.; Isoniemi, T ; Lovett, S, Walker, P. M., Kolodny, S, Kozin, V, Iorsh, I., Farrer, I, Ritchie, D. A., Skolnick, M. S, Krizhanovskii, D. 2021. Applied Physics Letters 119, 18, 181101. **DOI: 10.1063/5.0071248**
241. Ultrafast-nonlinear ultraviolet pulse modulation in an AlInGaN polariton waveguide operating up to room temperature. D. M. Di Paola, P. M. Walker, R. P. A. Emmanuele, A. V. Yulin, J. Ciers, Z. Zaidi, J.-F. Carlin, N. Grandjean, I. Shelykh, M. S. Skolnick, R. Butté & D. N. Krizhanovskii. 2021. Nature Communications 12, 1, 3504. **DOI: 10.1038/s41467-021-23635-6.**
242. Chapter Twelve - Physics and applications of semiconductor nanowire lasers. Parkinson, P. October 2021. Frontiers of Nanoscience, Volume 2, 20221, Pages 389-438. **DOI: 10.1016/B978-0-12-822083-2.00010-1**
243. Directly correlated microscopy of trench defects in InGaN quantum wells. T.J.O'Hanlon, F C-P.Massabuau, A.Bao, M.J.Kappers and R.A.Oliver. 2021. Ultramicroscopy 231, SI, 113255. **DOI: 10.1016/j.ultramic.2021.113255**
244. Spin-valley dynamics in alloy-based transition metal dichalcogenide heterobilayers. Vasily Kravtsov, Aleksey D Liubomirov, Roman V Cherbunin, Alessandro Catanzaro, Armando Genco, Daniel Gillard, Evgeny M Alexeev, Tatiana Ivanova, Ekaterina Khestanova, Ivan A Shelykh, Alexander I Tartakovskii, Maurice S Skolnick, Dmitry N Krizhanovskii and Ivan V Iorsh. 2021. 2D Materials 8, 2, 025011. **DOI10.1088/2053-1583/abcf12**

245. Modeling the effects of p-modulation doping in InAs quantum dot devices. Benjamin Maglio; Lydia Jarvis; Mingchu Tang; Huiyun Liu; Peter M. Smowton. 2021. 2021 International Conference On Numerical Simulation Of Optoelectronic Devices (NUSOD). Page 21-22. **DOI: 10.1109/NUSOD52207.2021.9541500**

246. The limits to peak modal gain in p-modulation doped indium arsenide quantum dot laser diodes. Benjamin Maglio; Lydia Jarvis; Craig P. Allford; Sara-Jayne Gillgrass; Samuel Shutts; Mingchu Tang; Huiyun Liu; Peter M. Smowton. 2021. 2021 Annual Conference Of The IEEE Photonics Society (Ipc). **DOI: 10.1109/IPC48725.2021.9592852**

247. Photon Statistics of Filtered Quantum Dot Resonance Fluorescence. Phillips, CL (Phillips, Catherine L.) [1] ; Brash, AJ, McCutcheon, DPS, Iles-Smith, J, Skolnick, MS, Fox, AM and Nazir, A. 2021. 2021 CONFERENCE ON LASERS AND ELECTRO-OPTICS (CLEO). **DOI: 10.1103/PhysRevLett.125.043603**

248. QCSE and Carrier Blocking in P-modulation Doped InAs/InGaAs Quantum Dots. Mahoney, J; Smowton, PM; Maglio, B; Jarvis, L; Allford, C; Shutts, S; Tang, M ; Liu, HY Abadia, N. 2021. 2021 CONFERENCE ON LASERS AND ELECTRO-OPTICS (CLEO) 2022-09-08. **DOI:10.1364/CLEO_AT.2021.JTu3A.167**

2022 (38 papers):

249. Decreased Fast Time Scale Spectral Diffusion of a Nonpolar InGaN Quantum Dot. Kocher, C; Jarman, JC; Zhu, TT ; Kusch, G; Oliver, RA; Taylor, RA. January 2022. ACS Photonics 9, 1, 275-281. **DOI: 10.1021/acsphotonics.1c01613**

250. Design of high-quality reflectors for vertical III-V nanowire lasers on Si. Zhang, X; Yang, H; Zhang, YY; Liu, HY. January 2022. Nanotechnology 33, 3, 035202. **DOI: 10.1088/1361-6528/ac2f22**

251. Carrier dynamics at trench defects in InGaN/GaN quantum wells revealed by time-resolved cathodoluminescence. Gunnar Kusch, Ella J. Comish, Kagiso Loeto, Simon Hammersley, Menno J. Kappers, Phil Dawson, Rachel A. Oliver and Fabien C.-P. Massabuau. January 2022. Nanoscale 14, 2, 402-409. **DOI: 10.1039/d1nr06088k**

252. Recent Progress of Quantum Dot Lasers Monolithically Integrated on Si Platform. Victoria Cao, Jae-Seong Park, Mingchu Tang, Taojie Zhou, Alwyn Seeds, Siming Chen and Huiyun Liu. February 2022. Frontiers in Physics 10, 839953. **DOI: 10.3389/fphy.2022.839953**

253. Nanoscale wafer patterning using SPM induced local anodic oxidation in InP substrates. Charlotte Ovenden, Ian Farrer, Maurice S Skolnick and Jon Heffernan. February 2022. Semiconductor Science and Technology, Vol. 7, 2**. DOI: 10.1088/1361-6641/ac3f20.**

254. Engineering Chiral Light-Matter Interactions in a Waveguide-Coupled Nanocavity. Dominic Hallett, Andrew P. Foster, David Whittaker, Maurice S. Skolnick, and Luke R. Wilson. February 2022. ACS Photonics 9, 2, 706-713. **DOI: 10.1021/acsphotonics.1c01806**

255. Thermally-driven formation method for growing (quantum) dots on sidewalls of self-catalysed thin nanowires. Zhang, YY; Fonseka, HA; Yang, H; Yu, XZ; Jurczak, P; Huo, SG; Sanchez, AM; Liu, HY. February 2022. Nanoscale Horizons 7, 3, 311-318. **DOI: 10.1039/d1nh00638j**

256. Droplet epitaxy of InAs/InP quantum dots via MOVPE by using an InGaAs interlayer. E. M. Sala, M. Godsland, Y. In. Na, A. Trapalis, J. Heffernan. Nanotechnology. February 2022. 33, 065601. **DOI: 10.1088/1361-6528/ac3617.**

257. Increase in terahertz-wave intensity in a magnetic field due to difference-frequency mixing by exciton excitation in a GaAs/AlAs multiple quantum well. Osamu Kojima, Yuki Tarui, Takashi Kita, Avan Majeed, Pavlo Ivanov, Edmund Clarke, and Richard A. Hogg. March 2022. Optics Express 30, 7, 11789-11796. **DOI: 10.1364/OE.453812.**

258. Investigation of wurtzite formation in MOVPE-grown zincblende GaN epilayers on AlxGa1-xN nucleation layers. Abhiram Gundimeda, Martin Frentrup, Simon M. Fairclough, Menno J. Kappers, David J. Wallis, and Rachel A. Oliver. March 2022. Journal of Applied Physics 131, 11, 115703. **DOI: 10.1063/5.0077186**

259. Highly integrated photonic crystal bandedge lasers monolithically grown on Si substrates. Huang, YR; Zhou, TJ; Tang, MC; Xiang, GH; Li, HC; Martin, M; Baron, T; Chen, SM; Liu, HY; Zhang, ZY. April 2022. Chinese Optics Letters 20, 4, 041401. **DOI: 10.3788/COL202220.041401**

260. Influence of Al (x) Ga1-x N nucleation layers on MOVPE-grown zincblende GaN epilayers on 3C-SiC/Si(001). Abhiram Gundimeda, Mohammadreza Rostami1, Martin Frentrup, Alexander Hinz, Menno J Kappers, David J Wallis, and Rachel A Oliver. April 2022. Journals of Physics D-Applied Physics 55, 17, 175110. **DOI: 10.1088/1361-6463/ac4c58.**

261. Long-Term Stability and Optoelectronic Performance Enhancementof InAsP Nanowires with an Ultrathin InP Passivation Layer. Chen, LL; OAdeyemo, S; Fonseka, HA; Liu, HY; Kar, S; Yang, H; Velichko, A; Mowbray, DJ; Cheng, ZY; Sanchez, AM; Joyce, HJ; Zhang, YY. April 2022. Nano Letters 22, 8, 3433-3439. **DOI: 10.1021/acs.nanolett.2c00805**

262. Multi-wavelength 128 Gbit s(-1) lambda (-1) PAM4 optical transmission enabled by a 100 GHz quantum dot mode-locked optical frequency comb. Pan, SJ; Zhang, HG; Liu, ZZ; Liao, MY; Tang, MC; Wu, DY; Hu, X; Yan, J; Wang, L; Guo, MC; Wang, ZH; Wang, T; Smowton, PM; Seeds, A; Liu, HY; Xiao, X; Chen, SM. April 2022. Journal of Physics D-Applied Physics 55, 14, 144001. **DOI: 10.1088/1361-6463/ac4365**

263. A GaAsSb/AlGaAsSb Avalanche Photodiode With a Very Small Temperature Coefficient of Breakdown Voltage. Ye Cao; Tarick Osman; Edmund Clarke; Pallavi Kisan Patil; Jo Shien Ng; Chee Hing Tan. April 2022. Journal of Lightwave Technology 40, 14, 4709-4713. **DOI: 10.1109/JLT.2022.3167268**

264. Direct evidence of Be as an amphoteric dopant in GaN. U. Wahl, J. G. Correia, A. R. G. Costa, T. A. L. Lima, J. Moens, M. J. Kappers, M. R. da Silva, L. M. C. Pereira, and A. Vantomme. May 2022. Physical Review B 105, 18, 184112. **DOI: 10.1103/PhysRevB.105.184112**.

265. Photocurrent detection of radially polarized optical vortex with hot electrons in Au/GaN. Yaonan Hou, Menno Kappers, Chaoyuan Jin, and Rachel Oliver. May 2022. Applied Physics Letters 120, 20, 202101. **DOI: 10.1063/5.0094454**

266. Condensation of 2D exciton-polaritons in an open-access microcavity. Feng Li, Yiming Li, L. Giriunas, M. Sich, D. D. Solnyshkov, G. Malpuech, A. A. P. Trichet, J. M. Smith, E. Clarke, M. S. Skolnick, *and* D. N. Krizhanovskii. May 2022. Journal of Applied Physics 131, 9, 093101. **DOI: 10.1063/5.0076459.**

267. Wide bandgap semiconductor conversion devices for radioisotope microbatteries. Lioliou, G; Krysa, AB; Barnett, AM. May 2022. MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING. Volume 142. **DOI10.1016/j.mssp.2022.106533**

268. The role of different types of dopants in 1.3 m InAs/GaAs quantum-dot lasers. Huiwen Deng, Lydia Jarvis, Zhibo Li, Zizhuo Liu, Mingchu Tang, Keshuang Li, Junjie Yang, Benjamin Maglio, Samuel Shutts, Jiawang Yu, Lingfang Wang, Siming Chen, Chaoyuan Jin, Alwyn Seeds, Huiyun Liu and Peter M Smowton. May 2022. Physics D-Applied Physics 55, 21, 215105 **DOI10.1088/1361-6463/ac55c4**

269. A Simple Approach to Achieving Ultrasmall III-Nitride Microlight-Emitting Diodes with Red Emission. Peng Feng, Ce Xu, Jie Bai, Chenqi Zhu, Ian Farrer, Guillem Martinez de Arriba, and Tao Wang. May 2022. ACS Applied Electronic Materials 2022, 4, 2787-2792. **DOI: 10.1021/acsaelm.2c00311**

270. Control of Morphology and Substrate Etching in InAs/InP Droplet Epitaxy Quantum Dots for Single and Entangled Photon Emitters. Raja Sekhar Reddy Gajjela, Elisa Maddalena Sala, Jon Heffernan and Paul M. Koenraad. June 2022. *ACS Appl. Nano Mater.* June 2022, 5, 6, 8070–8079. **DOI: 10.1021/acsanm.2c01197**

271. Group IV mid-infrared photonics for communications and sensing. Mashanovich, GZ (Mashanovich, Goran Z.) [1] ; Reid, L (Reid, Lauren) [1] ; Georgiev, G; Wei, C ; Qi, YL ; Stirling, CJ ; Osman, A; Wu, YB; Qu, Z ; Heffernan, J ; Groom, KM; Mittal, V; Cao, W Ke, L; Thomson, DJ; Mitchell, CJ; Nedeljkovic, M. 2022. View Web of Science ResearchID and Orchid 12004, 1200402. **DOI: 10.1117/12.2616700**

272. Spontaneous Formation of Time-Periodic Vortex Cluster in Nonlinear Fluids of Light. Sitnik, K.A; Alyatkin, S; Töpfer, J.D; Gnusov, I: Cookson, T; Sigurdsson, H and Lagoudakis, P.G. June 2022. Phys. Rev. Lett. 128, 237402. **DOI: 10.1103/PhysRevLett.128.237402**

Since new grant starting on 1st July 2022

273. The Effects of Surfaces and Surface Passivation on the Electrical Properties of Nanowires and Other Nanostructures: Time-Resolved Terahertz Spectroscopy Studies. Joyce, HJ; Adeyemo, SO; Lake, JD; Kar, S; Burton, OJ; Zhang, YY; Liu, HY; Tan, HH; Jagadish, C; Johnston, MB; Alexander-Webber, JA. 2022. 2022 47TH INTERNATIONAL CONFERENCE ON INFRARED, MILLIMETER AND TERAHERTZ WAVES. **DOI: 10.1109/IRMMW-THz50927.2022.9896111**

274. Harnessing many-body spin environment for long coherence storage and high-fidelity single-shot qubit readout. George Gillard, Edmund Clarke & Evgeny A. Chekhovich. July 2022. Nature Communications 13, 1, 4048. **DOI: 10.1038/s41467-022-31618-4.**

275. Optimal Purification of a Spin Ensemble by Quantum-Algorithmic Feedback. Daniel M. Jackson, Urs Haeusler, Leon Zaporski, Jonathan H. Bodey, Noah Shofer, Edmund Clarke, Maxime Hugues, Mete Atatüre, Claire Le Gall, and Dorian A. Gangloff. July 2022. Physical Review X 12, 3, 031014. **DOI: 10.1103/PhysRevX.12.031014.**

276. Characterization of buried interfaces using Ga K alpha hard X-ray photoelectron spectroscopy (HAXPES). B. F. Spencer, S. A. Church, P. Thompson, D. J. H. Cant, S. Maniyarasu, A.

Theodosiou, A. N. Jones, M. J. Kappers, D. J. Binks, R. A. Oliver, J. Higgins, A. G. Thomas, T. Thomson, A. G. Shard and W. R. Flavell. August 2022. Faraday Discussions 236, 0, 311-337. **DOI: 10.1039/d2fd00021k**

277. Optical Characterisation of Nanowire Lasers. Church, S; Al-Abri; R; Parkinson, P and Saxena, D. August 2022. Progress in Quantum Electronics. Volume 85, August 2022, 100408. **DOI: 10.1016/j.pquantelec.2022.100408**

278. A thermally erasable silicon oxide layer for molecular beam epitaxy. Hou, YN; Jia, H; Tang, MC; Mosberg, AB; Ramasse, QM; Skandalos, I; Noori, Y; Yang, JJ; Liu, HY; Seeds, A; Gardes, F. October 2022. Journal of Physics D-Applied Physics. 55**,** 42**,** 24004. **DOI10.1088/1361-6463/ac8600**

279. Theoretical analysis and modelling of degradation for III-V lasers on Si. Liu, JZ; Tang, MC; Deng, HW; Shutts, S; Wang, LF; Smowton, PM; Jin, CY; Chen, SM; Seeds, A; Liu, HY. October 2022. Journal of Physics D-Applied Physics. 55, 40, 404006.**DOI: 10.1088/1361-6463/ac83d3**

280. Mid-infrared InAs/InAsSb Type-II superlattices grown on silicon by MOCVD. Brown, R; Ratiu, BP; Jia, H; Azizur-Rahman, KM; Dang, MY; Tang, MC; Liang, BL; Liu, HY; Li, Q. November 2022. Journal of Crystal Growth. 598, 126860.**DOI: 10.1016/j.jcrysgro.2022.126860**

281. Piezo-Optomechanical Signal Transduction Using Lamb-Wave Supermodes in a Suspended GalliumArsenide Photonic-Integrated-Circuit Platform. Khurana, A; Jiang, P and Balram, K.C. November 2022. Physical Review Applied 18, 054030. **DOI: https://doi.org/10.1103/PhysRevApplied.18.054030**

282. Low threading dislocation density and antiphase boundary free GaAs epitaxially grown on on-axis Si (001) substrates. Junjie Yang, Keshuang Li, Hui Jia, Huiwen Deng, Xuezhe Yu, Pamela Jurczak, Jae-Seong Park, Shujie Pan, Wei Li, Siming Chen, Alwyn Seeds, Mingchu Tang and Huiyun Liu. December 2022. Nanoscale **DOI: 10.1039/d2nr04866c**

283. The epitaxial growth and unique morphology of InAs quantum dots embedded in a Ge matrix. Hui Jia, Junjie Yang, Mingchu Tang, Wei Li, Pamela Jurczak, Xuezhe Yu, Taojie Zhou, Jae-Seong Park, Keshuang Li, Huiwen Deng, Xueying Yu, Ang Li, Siming Chen, Alwyn Seeds and Huiyun Liu. December 2022. Journal of Physics D-Applied Physics 55, 49, 494002. **DOI: 10.1088/1361-6463/ac95a3**

284. Cubic GaN and InGaN/GaN quantum wells. Binks, DJ; Dawson, P; Oliver, RA; Wallis, DJ. December 2022. Applied Physics Reviews 9, 4, 041309. **DOI: 10.1063/5.0097558**

285. Analysis of the regimes of feedback effects in quantum dot laser. Lu, Y; Hu, X; Tang, MC; Cao, V; Yan, J; Wu, DY; Park, JS; Liu, HY; Xiao, X; Chen, SM. December2022. Journal of Physics D-Applied Physics. 55**,** 48, 484003. **DOI: 10.1088/1361-6463/ac9689**

286. Monolithically Integrated Ultralow Threshold Topological Corner State Nanolasers on Silicon. Zhou; Ma, JW; Tang, MC; Li, HC; Martin, M; Baron, T; Liu, HY; Chen, SM; Sun, XK; Zhang, ZY. December 2022. ACS Photonics. 9, 12, 3824-3830. **DOI10.1021/acsphotonics.2c00711**

2023 (37 papers):

287. From past to future: on-chip laser sources for photonic integrated circuits. Yang, JJ; Tang, MC; Chen, SM; Liu, HY. January 2023. Light-Science & Applications Volume 12, Issue 1, Article Number 16. **DOI10.1038/s41377-022-01006-0**
288. Reciprocal Phase Transition Electro-Optic Modulation. Zou, F; Zou, L; Tian, Y; Zhang, YM; Bente, E; Hou, WG; Liu, Y; Chen, SM; Cao, VCR; Guo, L; Li, SS; Yan, LS; Pan, W; Milosevic, D; Cao, ZZ; Koonen, AMJ; Liu, HY; Zou, XH. January 2023. Laser & Photonics Reviews. Indexed 2023-02-16. **DOI10.1002/lpor.202200577**
289. Three-Photon Excitation of InGaN Quantum Dots. Villafane, Viviana; Scaparra, Bianca; Rieger, Manuel; Appel, Stefan; Trivedi, Rahul; Zhu, Tongtong; Jarman, John; Oliver, Rachel A; Taylor, Robert A; Finley, Jonathan J; Muller, Kai. February 2023. Physical review letters, Volume 130, Issue 8, Page 083602. **DOI10.1103/PhysRevLett.130.083602**
290. Observation of large spontaneous emission rate enhancement of quantum dots in a broken-symmetry slow-light waveguide. Siampour, H; O'Rourke, C; Brash, AJ; Makhonin, MN; Dost, R; Hallett, DJ; Clarke, E; Patil, PK; Skolnick, MS; Fox, AM. February 2023. NPJ Quantum Information Volume 9, Issue 1, Article Number 15. **DOI10.1038/s41534-023-00686-9**
291. Core-Shell Nanorods as Ultraviolet Light-Emitting Diodes. Cameron, D; Coulon, PM; Fairclough, S; Kusch, G; Edwards, PR; Susilo, N; Wernicke, T; Kneissl, M; Oliver, RA; Shields, PA; Martin, RW. February 2023. Nano Letter. Indexed 2023-03-08. **DOI10.1021/acs.nanolett.2c04826**
292. Polarity determination of crystal defects in zincblende GaN by aberration-corrected electron microscopy. Xiu, HX; Fairclough, SM; Gundimeda, A; Kappers, MJ; Wallis, DJ; Oliver, RA; Frentrup, M. March 2023. JOURNAL OF APPLIED PHYSICS, Volume133, Issue10, Article Number105302. **DOI10.1063/5.0138478**
293. Long-wavelength InAs/InAlGaAs quantum dot microdisk lasers on InP (001) substrate. Jia, H; Yu, XZ; Zhou, TJ; Dear, C; Yuan, JJ; Tang, MC; Yan, Z; Ratiu, BP; Li, Q; Seeds, A ; Liu, HY; Chen, SM. March 2023. Applied Physics Letters. Volume 122, Issue 11, Article Number 111108. **DOI10.1063/5.0142391**
294. Improving Quantum Well Tube Homogeneity Using Strained Nanowire Heterostructures. Patel, N; Fonseka, HA; Zhang, YY; Church, S; Al-Abri, R; Sanchez, A; Liu, HY; Parkinson, P. March 2023. ACS APPLIED MATERIALS & INTERFACES. Volume 15, Issue 8, Page 10958-10964. **DOI10.1021/acsami.2c22591**
295. Holistic Nanowire Laser Characterization as a Route to Optimal Design. Church, SA; Patel, N; Al-Abri, R; Al-Amairi, N; Zhang, YY; Liu, HY; Parkinson, P. April 2023. Advanced Optical Materials. Volume11, Issue7. DOI**10.1002/adom.202202476**
296. Inverse Design of Whispering-Gallery Nanolasers with Tailored Beam Shape and Polarization. Diez, I; Krysa, A; Luxmoore, IJ. April 2023. ACS PHOTONICS. Volume 10 Issue 4 Page 968-976. **DOI10.1021/acsphotonics.2c01165**
297. High Operating Temperature Mid-Infrared InGaAs/GaAs Submonolayer Quantum Dot Quantum Cascade Detectors on Silicon. Guo, DQ; Huang, J; Benamara, M; Mazur, YI; Deng, Z; Salamo, GJ; Liu, HY; Chen, BL; Wu, J. April 2023. IEEE Journal of Quantum Electronics. Volume 59, Issue 2, Article Number 2300106. **DOI10.1109/JQE.2023.3238754**
298. Monolithically integrated photonic crystal surface emitters on silicon with a vortex beam by using bound states in the continuum. Li, HC; Tang, MC; Zhou, TJ; Xie, WT; Li, RJ; Gong, YH; Martin,

M; Baron, T; Chen, SM; Liu, HY; Zhang, ZY. April 2023. Optics Letters. Volume 48, Issue 7, Page 1702-1705. **DOI 10.1364/OL.484472**

299. Chiral topological add-drop filter for integrated quantum photonic circuits. Mehrabad, MJ; Foster, AP; Martin, NJ; Dost, R; Clarke, E; Patil, PK; Skolnick, MS; Wilson, LR. March 2023. Optica, Volume 10, Issue 3, Page 415-421. **DOI10.1364/OPTICA.481684**
300. Advanced Transfer Printing With In-Situ Optical Monitoring for the Integration of Micron-Scale Devices. Guilhabert, B; Bommer, SP; Wessling, NK ; Jevtics, D; Smith, JA; Xia, ZY; Ghosh, S; Kappers, M; Watson, IM ; Oliver, RA ; Dawson, MD; Strain, MJ. May 2023. IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS, Volume 29, Issue 3, Article Number 7900111. **DOI10.1109/JSTQE.2022.3227340**
301. Initialization of Nanowire or Cluster Growth Critically Controlled by the Effective V/III Ratio at the Early Nucleation Stage. Chen, C; Chu, YM; Zhang, LJ; Lin, HJ; Fang, WZ; Zhang, ZY; Zha, CF; Wang, KJ; Yang, H; Yu, XZ; Gott, JA; Aagesen, M; Cheng, ZY; Huo, SG; Liu, HY; Sanchez, AM; Zhang, YY. May 2023. Journal of Physics Chemistry Letters. Indexed 2023-05-30. **DOI10.1021/acs.jpclett.3c00484**
302. Distortion-free amplification of 100 GHz mode-locked optical frequency comb using quantum dot technology. Cao, V; Pan, SJ; Fan, YL; Wu, DY; Tang, MC; Seeds, A ; Liu, HY; Xiao, X; Chen, SM. May 2023. OPTICS EXPRESS, Volume 31, Issue 11, Page 18147-18158. **DOI10.1364/OE.486707**
303. Complications in silane-assisted GaN nanowire growth. Jiang, N; Ghosh, S; Frentrup, M; Fairclough, SM; Loeto, K; Kusch, G; Oliver, RA; Joyce, HJ. May 2023. Nanoscale Advances, Volume 5, Issue 9, Page 2610-2620. **DOI10.1039/d2na00939k**
304. Lateral Bending of Ag Nanowires toward Controllable Manipulation. Cui, LC; Li, JM; Zhou, HC; Wu, L; Yang, D; Liu, HY; Qian, LM; Yu, BJ. May 2023. ACS NANO, Volume 17, Issue 10, Page 9255-9261. **DOI10.1021/acsnano.3c00517**
305. Topological and conventional nano-photonic waveguides for chiral integrated quantum optics. Martin, NJ; Mehrabad, MJ; Chen, X; Dost, R; Nussbaum, E; Hallett, D; Hallacy, L; Clarke, E; Patil, PK; Hughes, S; Fox, AM; Skolnick, MS; Wilson, LR. May 2023. Arxiv **DOI:arXiv:2305.11082**
306. MOVPE studies of zincblende GaN on 3C-SiC/Si(001). Wade, TJ; Gundimeda, A; Kappers, MJ; Fairclough, SM; Wallis, D; Oliver, RA. June 2023. Journal of Crystal Growth. Volume 611, Article Number 127182. **DOI10.1016/j.jcrysgro.2023.127182**
307. Surface/interface engineering of InAs quantum dot edge-emitting diodes toward III-V/SiN photonic integration. Hou, YA; Skandalos, I; Tang, MC; Jia, H; Deng, HW; Yu, XZ; Noori, Y; Stathopoulos, S; Chen, SM; Liu, HY; Seeds, A; Reed, G; Gardes, F. June 2023. Journal of Luminescence. Volume 258, Article Number 119799, **DOI10.1016/j.jlumin.2023.119799**
308. Optically enhanced single- and multi-stacked 1.55 mu m InAs/InAlGaAs/InP quantum dots for laser applications. Yu, XZ; Jia, H; Dear, C; Yuan, JJ; Deng, HW; Tang, MC; Liu, HY. July 2023. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 56, Issue 28, Article Number 285101. **DOI10.1088/1361-6463/acc875**
309. Disentangling the Impact of Point Defect Density and Carrier Localization-Enhanced Auger Recombination on Efficiency Droop in (In,Ga)N/GaN Quantum Wells. Barrett, RM; McMahon,

JM; Ahumada-Lazo, R; Alanis, JA; Parkinson, P; Schulz, S; Kappers, MJ; Oliver, RA; Binks, D. July 2023. ACS Photonics. Volume 10, Issue 8, Page 2632-2640. **DOI:10.1021/acsphotonics.3c00355**

310. Quantifying and mitigating optical surface loss in suspended GaAs photonic integrated circuits. Thomas, R; Li, H; Laverock, J and Balram, K.C. July 2023. Optics Letters, Volume 48, Issue 15, pp. 3861-3864 (2023). **DOI: https://doi.org/10.1364/OL.492505**

311. Culling a Self-Assembled Quantum Dot as a Single-Photon Source Using X-ray Microscopy. Dey, AB; Sanyal, MK; Schropp, A; Achilles, S; Keller, TF; Farrer, I; Ritchie, DA; Bertram, F; Schroer, CG; Seeck, OH. July 2023. ACS NANO, Volume 17, Issue 16, Page 16080-16088. **DOI10.1021/acsnano.3c04835**

312. Different Doping Behaviors of Silicon in Zinc Blende and Wurtzite GaAs Nanowires: Implications for Crystal-Phase Device Design. Hou, QC; Fonseka, HA; Martelli, F; Paci, B; Gustafsson, A; Gott, JA; Yang, H; Huo, SG; Yu, XZ; Chen, LL; Chu, YM; Zha, CF; Zhang, ZY; Zhang, LJ; Shang, FX; Fang, WZ; Cheng, ZY; Sanchez, AM; Liu, HY; Zhang, YY. July 2023. ACS APPLIED NANO MATERIALS, Volume 6, Issue 13, Page 11465-11471. **DOI10.1021/acsanm.3c01493**

313. Additive GaN Solid Immersion Lenses for Enhanced Photon Extraction Efficiency from Diamond Color Centers. Cheng, Xingrui; Wessling, Nils Kolja; Ghosh, Saptarsi; Kirkpatrick, Andrew R; Kappers, Menno J; Lekhai, Yashna N D; Morley, Gavin W; Oliver, Rachel A; Smith, Jason M; Dawson, Martin D; Salter, Patrick S; Strain, Michael J. August 2023. ACS Photonics, Volume10, Issue 9, Page 3374-3383. DOI: **10.1021/acsphotonics.3c00854.**

314. Monitoring of the Initial Stages of Diamond Growth on Aluminum Nitride Using In Situ Spectroscopic Ellipsometry. Leigh, W; Mandal, S; Cuenca, JA; Wallis, D; Hinz, AM; Oliver, RA; Thomas, ELH; Williams, O. August 2023. ACS Omega, Volume 8, Issue 33, Page 30442-30449. DOI: **10.1021/acsomega.3c03609**

315. Magnetic properties of nickel electrodeposited on porous GaN substrates with infiltrated and laminated connectivity. Grishchenko, Y; Dawson, J; Ghosh, S; Gundimeda, A; Spiridon, BF ; Raveendran, NL ; Oliver, RA; Kar-Narayan, S; Calahorra, Y. August 2023. JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, Volume 580. DOI: **10.1016/j.jmmm.2023.170877**

316. Compositional Mapping of the AlGaN Alloy Composition in Graded Buffer Structures Using Cathodoluminescence. Loeto, K; Kusch, G; Ghosh, S; Frentrup, M; Hinz, A; Oliver, R. August 2023. PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE. Volume 220, Issue 16, Special Issue. **DOI 10.1002/pssa.202200830**

317. Foundry SiN as a platform for Heterogeneous Integration at Visible Wavelengths. Smith, JA; Li, Z; Ghosh, S; Francis, H; Navickaite, G; McKnight, LJ; Oliver, RA; Dawson, MD; Strain, MJ. 2023 IEEE PHOTONICS SOCIETY SUMMER TOPICALS MEETING SERIES, SUM. DOI**10.1109/SUM57928.2023.10224480**

318. Direct-write projection lithography of quantum dot micropillar single photon sources. Androvitsaneas, P; Clark, R.N; Jordan, M; Alvarez Perez, M: Peach, T; Thomas, S; Shabbir, S; Sobiesierski, A.D; Trapalis, A; Farrer, I; Langbein, W.W; Bennett, A.J. Appl. Phys. Lett. 28 August 2023; 123 (9): 094001. **https://doi.org/10.1063/5.0155968**

319. Design and characterisation of multi-mode interference reflector lasers for integrated photonics. Albeladi, FT; Gillgrass, S; Nabialek, J; Mishra, P; Forrest, R; Albiladi, TR; Allford, CP; Deng, H; Tang, M; Liu, HY; Shutts, S; Smowton, PM. September 2023. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 56 Issue 38. Article Number 384001. **DOI10.1088/1361-6463/acdb80**

320. The growth of low-threading-dislocation-density GaAs buffer layers on Si substrates. Dang, MY; Deng, HW; Huo, SG; Juluri, RR; Sanchez, AM; Seeds, AJ; Liu, HY; Tang, MC. October 2023. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 56 Issue 40. Article Number 405108. **DOI10.1088/1361-6463/ace36d**

321. Strategy for reliable growth of thin GaN Caps on AlGaN HEMT structures. Hinz, AM; Ghosh, S; Fairclough, SM; Griffiths, JT; Kappers, MJ; Oliver, RA; Wallis, DJ. December 2023. JOURNAL OF CRYSTAL GROWTH. Volume 624. **DOI10.1016/j.jcrysgro.2023.127420**

322. Scanning capacitance microscopy of GaN-based high electron mobility transistor structures: A practical guide. Chen, C; Ghosh, S; Adams, F; Kappers, MJ; Wallis, DJ; Oliver, RA. December 2023. ULTRAMICROSCOPY. Volume 254. Article Number 113833. **DOI10.1016/j.ultramic.2023.113833**

323. Coherent light scattering from a telecom C-band quantum dot. Wells, L; Muller, T; Stevenson, R.M.; Skiba-Szymanska, J; Ritchie, D.A. and Shields, A.J. Nature Communications 14, 8371 (2023). December 2023. **DOI:10.1038/s41467-023-43757-3**

2024 (30 papers):

324. Purcell-enhanced single photons at telecom wavelengths from a quantum dot in a photonic crystal cavity. Phillips, C; Brash, A; Godsland, M; Martin, N; Foster, A; Tomlinson, A; Dost, R; Babazadeh, N; Sala, E; Wilson, W; Heffernan, J; Skolnick, M and Fox, M. February 2024. *Scientific Reports* volume 14, Article number: 4450 (2024). **DOI: 10.1038/s41598-024-55024-6**

325. Self-Assembled InAs Quantum Dots on InGaAsP/InP(100) by Modified Droplet Epitaxy in Metal-Organic Vapor Phase Epitaxy around the Telecom C-Band for Quantum Photonic Applications. Sala, EM; Na, YI; Godsland, M; Heffernan, J. February 2024. PHYSICA STATUS SOLIDI-RAPID RESEARCH LETTERS. **DOI: 10.1002/pssr.202300340.**

326. Occupancy-driven Zeeman suppression and inversion in trapped polariton condensates. Sawicki, K; Dovzhenko, D; Wang, Y; Cookson, T; Sigurdsson, H and Lagoudakis, P. March 2024. Physical Review B 109, 125307. **DOI: 10.1103/PhysRevB.109.125307**

327. Laser written nitrogen vacancy centers in diamond integrated with transfer print GaN solid immersion lenses. Cheng, XR; Wessling, NK; Ghosh, S; Kirkpatrick, AR; Kappers, MJ; Lekhai, YND; Morley, GW; Oliver, RA; Dawson, MD; Smith, JM; Salter, PS; Strain, MJ. March 2024. Nanoscale And Quantum Materials:From Synthesis And Laser Processing To Applications 2024. Volume 12874. **DOI10.1117/12.3000474**

328. High-power, electrically-driven continuous-wave 1.55-µm Si-based multi-quantum well lasers with a wide operating temperature range grown on wafer-scale InP-on-Si (100) heterogeneous substrate. Sun, JL; Lin, JJ; Zhou, M; Zhang, JJ; Liu, HY; You, TG; Ou, X. March 2024. LIGHT-SCIENCE & APPLICATIONS. Volume 13 Issue 1. **DOI10.1038/s41377-024-01389-2**

329. Quantum dot micropillar cavities with SiO_2 hard mask microlenses. Jordan, M; Androvitsaneas, P; Clark, RN; Trapalis, A; Farrer, I; Langbein, W; Bennett, AJ. March 2024. Photonic And Phononic Properties Of Engineered Nanostructures Xiv. Volume 12896. **DOI10.1117/12.3005342**

330. Sub-surface Imaging of Porous GaN Distributed Bragg Reflectors via Backscattered Electrons. Sarkar, M; Adams, F; Dar, SA; Penn, J; Ji, YH; Gundimeda, A ; Zhu, TT; Liu, CW; Hirshy, H; Massabuau, FCP; O'Hanlon, T; Kappers, MJ; Ghosh, S; Kusch, G; Oliver, RA. April 2024. MICROSCOPY AND MICROANALYSIS. Volume 30 Issue 2 Page 208-225. **DOI10.1093/mam/ozae028**

331. Modelling the effects of p-modulation doping in InAs/InGaAs quantum dot devices (vol 56, 687, 2024). Maglio, B; Jarvis, L; Tang, MC; Liu, HY; Smowton, PM. April 2024. Optical And Quantum Electronics. Volume 56, 991. **DOI10.1007/s11082-024-06961-z**

332. Effects of phosphorous and antimony doping on thin Ge layers grown on Si. Yu, XY; Jia, H; Yang, JJ; Masteghin, MG; Beere, H; Mtunzi, M; Deng, HW; Huo, SG; Chen, C; Chen, SM; Tang, MC; Sweeney, SJ; Ritchie, D; Seeds, A; Liu, HY. April 2024. SCIENTIFIC REPORTS. Volume 14, 7969. **DOI10.1038/s41598-024-57937-8**

333. Probing Purcell enhancement and photon collection efficiency of InAs quantum dots at nodes of the cavity electric field. Jordan, M; Androvitsaneas, P; Clark, RN; Trapalis, A; Farrer, I; Langbein, W; Bennett, AJ. April 2024. PHYSICAL REVIEW RESEARCH. Volume 6, L022004 **DOI10.1103/PhysRevResearch.6.L022004**

334. A novel bidirectionally operated chirped quantum-dot based semiconductor optical amplifier using a dual ground state spectrum. Cao, V; Pan, SJ; Wu, DY; Zhang, HG; Tang, MC; Seeds, A; Liu, HY; Xiao, X; Chen, SM. April 2024. APL PHOTONICS. Volume 9, 046110. **DOI10.1063/5.0194677**

335. Topological and conventional nanophotonic waveguides for directional integrated quantum optics. Martin, NJ, Jalali Mehrabad M, Chen X, Dost R, Nussbaum E, Hallett D, Hallacy L, Foster A, Clarke E, Patil PK, Hughes Hafezi SM, Fox AM, Skolnick MS, Wilson LR. April 2024 PHYSICAL REVIEW RESEARCH volume 6, issue 2 article no. L022065 **DOI: 10.1103/PhysRevResearch.6.L022065**

336. Control of the oscillation frequency of a vortex cluster in the trapped polariton condensate. Sitnik, K.A; Gnusov, I; Misko, M; Topfer, J.D; Alyatkin, S and Lagoudakis, P.G. May 2024. *Appl. Phys. Lett.* 124, 201102 (2024). **DOI:10.1063/5.0199548**

337. Emerging near-infrared luminescent materials for next-generation broadband optical communications. Xu, BB; Jin, CY; Park, JS; Liu, HY; Lin, X; Cui, JJ; Chen, DY; Qiu, JR. May 2024. Informat, 6(8), e12550. **DOI10.1002/inf2.12550**

338. High-quality germanium growth on (111)-faceted V-groove silicon by molecular beam epitaxy. Mtunzi, M; Jia, H; Hou, YA; Yu, XY; Zeng, HT; Yang, JJ; Yan, XZ; Skandalos, I; Deng, HW; Park, JS; Li, W; Li, A; El Hajraoui, K; Ramasse, Q; Gardes, F; Tang, MC; Chen, SM; Seeds, A; Liu, HY. June 2024. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 57 Issue 25, 255101. **DOI10.1088/1361-6463/ad31e0**

339. MBE growth of Ge1−x Snx devices with intrinsic disorder. Holmes, S; Gul, Y; Pullen. I; Gough J; Thomas, K J ; Jia, H; Tang, M; Liu, H and Pepper, M. June 2024. Journal of Physics D: Applied Physics, Volume 57, 385105. **DOI 10.1088/1361-6463/ad5a1a**

340. Room temperature quantum emitters in aluminum nitride epilayers on silicon. Cannon, J.K; Bishop, S.G; Eggleton, K.M; Yagci, H.B; Clark, R.N; Ibrahim, S.R; Hadden, J.P; Ghosh, S; Kappers, M.J; Oliver, R.A and Bennett, A.J. June 2024. Applied Physics Letters. Volume 124, Issue 24, 244001. **DOI10.1063/5.0207744**

341. Threshold voltage mapping at the nanoscale of GaN-based high electron mobility transistor structures using hyperspectral scanning capacitance microscopy. Chen, C; Ghosh, G; De Wolf, P; Liang, Z; Adams, F; Kappers, M.J; Wallis, D.J and Oliver, R.A. June 2024. Applied Physics Letters, Vol 124, Issue 23, 232107. **DOI10.1063/5.0203646**

342. Microstructure and reflectance of porous GaN distributed Bragg reflectors on silicon substrates. Ghosh, S; Sarkar, M; Frentrup, M; Kappers, M.J and Oliver, R.A. July 2024. Journal of Applied Physics, Volume 136, Issue 4, 043105. **DOI10.1063/5.0216672**

343. Buffer-less Gallium Nitride High Electron Mobility Heterostructures on Silicon. Ghosh, S; Frentrup, M; Hinz, A.M; Pomeroy, J.W; Field, D; Wallis, D.J; Kuball, M and Oliver, R.A. July 2024. arXiv, 2407, 09723. **DOI10.48550/arXiv.2407.09723**

344. Efficiency droop in zincblende InGaN/GaN quantum wells. Dyer, D; Church, S.A; Ahumada-Lazo, R; Kappers, M.J; Halsall, M.P; Parkinson, P; Wallis, D.J; Oliver, R.A and Binks, D.J. July 2024. *Nanoscale* 16, 13953-13961 (2024); **DOI10.1039/D4NR00812J**

345. Influence of Xe^+ and Ga^+ milling species on the cathodoluminescence of wurtzite and zincblende GaN. Loeto, K; Fairclough, S.M; Griffiths, I; Kusch, G; Kappers, M.J, Young, N and Oliver, R.A. July 2024. Journal of Applied Physics, 136, 045702. **DOI10.1063/5.0211529**

346. Atom Probe Tomography Investigation of the Impact of Stacking Faults on InGaN/GaN Quantum Well LED Systems. July 2024. Shu, R; Oliver, R.A; Frentrup, M; Kappers, M.J; Xiu, H; Kusch, G; Wallis, D.J; Hofer, C; Bagot, P.A.J and Moody, M. July 2024. Microscopy and Microanalysis, Volume 30, Issue 1, 52-53. **DOI10.1093/mam/ozae044.024**

347. 1.3 µm InAs/GaAs Quantum-Dot Lasers with p-Type, n-Type, and Co-Doped Modulation. Deng, H; Park, J.S; Yu, X; Liu, Z; Jia, H; Zeng, H; Yang, J; Pan, S; Chen, S; Seeds, A; Tang, M; Smowton, P and Liu, H. August 2024. Advanced Physics Research. Volume 3, Issue 10, 2400045. **DOI.org/10.1002/apxr.202400045**

348. Cathodoluminescence studies of the optical properties of a zincblende InGaN/GaN single quantum well. Gundimeda, A; Kusch, G ; Frentrup, M; Kappers, M.J; Wallis, D.J and Oliver, R.A. September 2024. Nanotechnology, Volume 35, 395705. **DOI10.1088/1361-6528/ad5db4**

349. Bose–Einstein condensation of light in a semiconductor quantum well microcavity. Schofield, R.C.; Fu, M; Clarke, E; Farrer, I; Trapalis, A; Dhar, H.S; Mukherjee, R; Millard, T.S; Heffernan, J; Mintert, F; Nyman, R.A and Oulton, R.F. October 2024. Nature Photonics (2024), Volume 18, Issue 10, 1083. **DOI10.1038/s41566-024-01491-2**

350. Local Droplet Etching with Indium Droplets on InP(100) by Metal-Organic Vapor Phase Epitaxy. Sala, E.M; Na, Y.I and Heffernan, J. November 2024. Crystal Growth & Design. Volume 24, Issue 24, pg 9574-9580. **DOI10.1021/acs.cgd.4c01097**

351. Quantum dots synthesis within ternary III–V nanowire towards light emitters in quantum photonic circuits: a review. Boras, G; Zeng, H; Park, J.S; Deng. H; Tang, M and Liu, H. November 2024. *Nanotechnology* 36 072001. **DOI 10.1088/1361-6528/ad958c**

352. Spin-photon entanglement with direct photon emission in the telecom C-band. Laccotripes, P; Muller, T; Stevenson, R.M.; Skiba-Szymanska, J; Ritchie, D.A. and Shields, A.J. Nature Communications 15, Article 9740. Published November 2024. **DOI10.1038/s41467-024-53964-1**

353. Indium-flush technique for C-band InAs/InP quantum dots. Yuan, J; Dear, C; Jia, H; Park, J.S; Hou, Y; Hajraoui, K.E; Zeng, H; Deng, H; Yang, J; Tang, M; Chen, S; Ramasse, Q.M; Li, Q; Seeds, A and Liu. H. December 2024. APL Materials. Volume 12, Issue 12, 121109. **DOI10.1063/5.0239360**

2025 (41 papers):

354. Effects of rapid thermal annealing on telecom C-band InAs quantum dots on InP (100) grown by droplet epitaxy. Chan, C.L; Sala, E.M; Clarke, E and Heffernan, J. January 2025. Journal of Physics D-Applied Physics, Volume 58, Issue 2, 025107. **DOI10.1088/1361-6463/ad835d**

355. Impact of stacking faults on the luminescence of a zincblende InGaN/GaN single quantum well. Gundimeda, A; Kusch, G; Frentrup, M; Xiu, H; Shu, R; Hofer, C; Bagot, P.A.J; Moody, M.P; Kappers, M.J and Wallis, D.J. January 2025. Journal of Physics D: Applied Physics. 58, 025112. **DOI 10.1088/1361-6463/ad8662**

356. Recombination efficiency in c-plane (In,Ga)N/GaN quantum wells: saturation of localisation sites versus Auger-Meitner recombination. Barrett, R.M ; Dyer, D.D ; McMahon, J. M.; Schulz, S; Kappers, M.J; Oliver, R.A and Binks, D. January 2025. Journal of Physics D-Applied Physics. Volume 58, Issue 4, 045103. **DOI10.1088/1361-6463/ad8bd4**

357. Micro-transfer printing of InGaAs/InP avalanche photodiode on Si substrate. Alimi, Y; Guilhabert, B; Jevtics, D; Sala, E.M; Strain, M..J; Groom, K.M and Heffernan, J. January 2025. Semiconductor Science and Technology, Volume 40, Issue 1, 015023. **DOI10.1088/1361-6641/ad9f9b**

358. Quantum dots synthesis within ternary III-V nanowire towards light emitters in quantum photonic circuits: a review. Boras, G; Zeng, HT; Park, JS; Deng, HW; Tang, MC and Liu, HY. February 2025. Nanotechnology, Volume 36, Issue 7, 072001. **DOI10.1088/1361-6528/ad958c**

359. Recent Developments in Transmission Electron Microscopy for Crystallographic Characterization of Strained Semiconductor Heterostructures. Gong, T; Chen, LQ; Wang, XY; Qiu, Y; Liu, HY; Yang, ZX and Walther, T. February 2025. Crystals. Volume 15 Issue 2. **DOI10.3390/cryst15020192**

360. Behaviour of Ti/Al/Ti/Au contacts to AlGaN/GaN heterostructures at low temperature. Adams, F; Ghosh, S; Liang, ZD; Chen, C; Suphannarat, N; Kappers, MJ; Wallis, DJ and Oliver, RA. March 2025. Journal of Physics D-Applied Physics, Volume 58, Issue 13, 135117. **DOI10.1088/1361-6463/adafb5**

361. Buffer-Less Gallium Nitride High Electron Mobility Heterostructures on Silicon. Ghosh, S; Frentrup, M; Hinz, AM; Pomeroy, JW; Field, D; Wallis, DJ; Kuball, M and Oliver, RA. March 2025. Advanced Materials, Volume 37, Issue 9, 2025-01-30. **DOI10.1002/adma.202413127**

362. Nonlinear quantum optics at a topological interface enabled by defect engineering. Hallacy, L ; Martin, N. J; Jalali Mehrabad, M; Hallett, D; Chen, X; Dost, R; Foster, A; Brunswick, L; Fenzl, A; Clarke, E; Patil, P. K; Fox, A. M; Skolnick, M. S and Wilson, L. R. March 2025. Nanophotonics Volume 2, Article no. 9. **DOI10.1038/s44310-025-00057-6**

363. The effect of rapid thermal annealing on 1.55 μm InAs/InP quantum dots. Dear, C; Park, JS; Jia, H; El Hajraoui, K; Yuan, JJ; Wang, YQ; Hou, YN; Deng, HW; Li, Q; Ramasse, QM; Seeds, A; Tang, MC and Liu, HY. March 2025. Journal of Physics D-Applied Physics, Volume 58, Issue 12, 125104. **DOI10.1088/1361-6463/adabf1**

364. Low-Defect Quantum Dot Lasers Directly Grown on Silicon Exhibiting Low Threshold Current and High Output Power at Elevated Temperatures. Papatryfonos, K; Girard, JC; Tang, MC; Deng, HW; Seeds, AJ; David, C; Rodary, G; Liu, HY and Selviah, DR. March 2025. Advanced Photonics Research, Volume 6, Issue 3. **DOI10.1002/adpr.202400082**

365. Inhibition of Pt-InGaAs chemical reaction by Al incorporation: towards stable Pt Schottky barriers on GaAs-based alloys and compounds. Xiong, JM; Chen, Z; Gong, T; Dong, JW; Hu, WY; Ma, ZY; Deng, Y; Zheng, JW; Zhang, X; Ma, J; Chen, LQ; Li, JF; Wang, XY; Qiu, Y; Dang, MY; Deng, HW; Tang, MC; Liu, HY; Zhu, J and Ruterana, P. March 2025. Journal of Physics D-Applied Physics, Volume 58, Issue 11, 115103. **DOI10.1088/1361-6463/ada805**

366. Modelling and optimization of Ge/GaAs uni-travelling carrier photodiodes. Zhang, YT; Bai, MX; Jia, H; Zeng, HT; Wang, YQ; Deng, HW; Tang, MC; Chen, SM; Seeds, A and Liu, HY. March 2025. Scientific Reports, Volume 15, Issue 1, 8983. **DOI10.1038/s41598-025-93960-z**

367. Broadly tunable cubic phase InGaN/GaN quantum wells grown by metal-organic chemical vapor deposition. Dyer, D; Fieldhouse-Allen, W; Kappers, M; Wallis, D; Oliver, R and Binks, D.J. March 2025. Proceedings *Gallium Nitride Materials and Devices XX* 13366 (2025); **DOI10.1117/12.3039278**

368. Modelling of a narrow linewidth monolithically integrated quantum dot-on-silicon extended cavity laser. Vivian, C; Seddon, J; Skandalos, I; Tang, MC; Gardes, FY; Liu, HY and Seeds, AJ. March 2025. SILICON PHOTONICS XX Volume 13371. **DOI10.1117/12.3042230**

369. An atomically resolved study of droplet epitaxy InAs quantum dots grown on InGa(As,P)/InP by MOVPE for quantum photonic applications. Banfi, E. G; Sala, E. M; Gajjela, R. S. R; Heffernan, J and Koenraad, P. M. April 2025. Journal of Applied Physics. Volume 137, Issue 13, 134401. **DOI10.1063/5.0232155**

370. Antiphase boundary-free III-V materials epitaxially grown on on-axis silicon (001) substrates by ultra-thin silicon buffer. Zhang, XC; Deng, HW; Zeng, HT; Jia, H; Bai, MX; Lei, DQ; Wang, HX; Cao, LW; Yang, JJ; Stock, T; Li, W; Chen, SM; Seeds, A; Liu, HY and Tang, MC. April 2025. APL Materials, Volume 13, Issue 4, 041101. **DOI10.1063/5.0259915**

371. Microwave plasma modelling for thick diamond deposition on III-nitrides. Cuenca, J. A; Al-Moathin, A; Kappers, M. J.; Mandal, S; Kuball, M; Oliver, R. A; Li, C and Williams, O. A. April 2025. *Carbon* **241**, 120349 (2025); **DOI10.1016/j.carbon.2025.120349**

372. Low threshold InAs/InP quantum dot lasers. Park, JS; Jia, H; Zeng, HT; Wang, YQ; Yuan, JJ; Li, J; Liu, SF; Dear, C; Liu, KM; Chen, C; Deng, HW; Martin, M; Li, Q; Baron, T; Tang, MC; Seeds, A and Liu, HY. May 2025. Optics Express, Volume 33, Issue 9, Page 19158-19165. **DOI10.1364/OE.561471**

373. GaAs Growth on Ge-Buffered Discontinuous (111)-Faceted V-Groove Silicon Substrates. Mtunzi, M; Jia, H; Masteghin, MG; Hou, YN; Zeng, HT; Deng, HW; Park, JS; Chen, C; Li, J; Yan, XZ; Skandalos, I; Gardes, F; Tang, MC; Seeds, A and Liu, HY. May 2025. Advanced Physics Research, 2025-05-22. **DOI10.1002/apxr.202500026**

374. On-Chip Quantum Sensing of Kondo Spins in a High-Mobility Quasi-One-Dimensional Nanoconstriction. Lo, ST; Wang, CC; Ho, SC; Chang, JH; Chen, MW; Creeth, GL; Smith, LW; Chao, SH; Hsieh, YC; Wu, PT; Wu, YC; Liang, CT; Pepper, M; Griffiths, JP; Farrer, I; Jones, GAC; Ritchie, DA and Chen, TM. May 2025. Nano Letters, Vol 25, Pg 7740-7747. **DOI10.1021/acs.nanolett.5c00560**

375. Optimizing spin polarization in quantum dot vertical-gain structures through pump wavelength selection. Alhosiny, N; Alharthi, S.S; Doogan, J; Clarke, E and Ackemann, T. May 2025. Applied Physics Letters, Volume 126, Issue 19, 191102. **DOI10.1063/5.0261768**

376. High operating temperature (> 200 °C) InAs/GaAs quantum-dot laser with co-doping technique. Park, JS; Deng, HW ; Pan, SJ; Wang, HX; Wang, YQ; Yuan, JJ; Zhang, XC; Zeng, HT; Jia, H; Dang, MY; Mishra, P; Jandu, G; Chen, SM; Smowton, PM; Seeds, A; Liu, HY and Tang, MC. May 2025. Journal of Applied Physics D-Applied Physics. Volume 58, Issue 18, 185101. **DOI10.1088/1361-6463/adc275**

377. Enhanced gain in O-band quantum-dot semiconductor optical amplifier based on a dual-pass amplification scheme. Cao, V; Wang, Z; Wang, W; Pan, SJ; Liu, ZH; Tang, MC; Liu, HY; Xiao, X and Chen, SM. May 2025. Optics Express. Volume 33 Issue 10 Page20843-20851. **DOI10.1364/OE.557329**

378. Beyond transmission electron microscopy imaging: Atom probe tomography reveals chemical inhomogeneity at stacking fault interfaces in InGaN/GaN light-emitting diodes. Shu, RY; Oliver, RA; Frentrup, M; Kappers, MJ; Xiu, HX; Kusch, G; Wallis, DJ; Hofer, C; Bagot, PAJ and Moody, MP. May 2025. Materialia, Volume 40, 102417. **DOI10.1016/j.mtla.2025.102417**

379. High Temperature Operation of Co-Doped InAs Quantum Dot Laser for O-Band Emission. Mishra, P; Jarvis, L; Hodges, C; Enderson, A; Albeladi, F; Gillgrass, SJ; Jandu, GM; Forrest, R; Allford, CP; Deng, HW; Tang, MC; Liu, HY; Shutts, S and Smowton, PM. June 2025. IEEE Photonics Journal, Volume 17, Issue 3, 0600606. **DOI10.1109/JPHOT.2025.3560443**

380. Point defect luminescence associated with stacking faults in magnesium doped zincblende GaN. Xu, XY; Frentrup, M; Kusch, G; Shu, RY; Hofer, C; Bagot, PAJ; Moody, MP; Kappers, MJ; Wallis, DJ and Oliver, RA. June 2025. Journal of Applied Physics. Volume 137 Issue 23. **DOI10.1063/5.0274599**

381. Achieving selectivity and reduced absorption for low loss monolithic InAs QD based III-V photonic integration. Mishra, P; Enderson, A; Albeladi, FT; Qiao, D; Jandu, GM; Jarvis, L; Gillgrass, SJ; Raitu, BP; Peng, N; Deng, H; Tang, M; Liu, HY; Shutts, S and Smowton, PM. June 2025. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 58 Issue 26. **DOI10.1088/1361-6463/ade450**

382. MOCVD-grown InAs/InP quantum dot lasers with low threshold current. Yan, Z; Liu, SF; Ratiu, BP; Wong, KM; Zeng, HT; Wang, YQ; Park, JS; Jia, H; Tang, MC; Liu, HY; Smowton, PM and Li, Q. July 2025. Optics Express. Volume 33 Issue 15 Page 31195-31203. **DOI10.1364/OE.56836**

383. Transfer printing micro-assembly of silicon photonic crystal cavity arrays: beating the fabrication tolerance limit. Bommer, S; Panuski, C; Guilhabert, B; Xia, Z; Smith, J.A; Dawson, M.D; Englund, D and Strain, M.J. July 2025. Nature Communications 16, Article number 5994. **DOI: https://doi.org/10.1038/s41467-025-60957-1**

384. Purcell-enhanced, directional light-matter interaction in a waveguide-coupled nanocavity. Martin, NJ; Hallett, D; Duda, M; Hallacy, L; Callus, E; Brunswick, L; Dost, R; Clarke, E; Patil, PK; Kok, P; Skolnick, MS and Wilson, LR. July 2025. Optica. Volume 12 Issue 7 Page1100-1108. **DOI10.1364/OPTICA.561630**
385. Electro-Mechanically Tunable, Waveguide-Coupled Photonic-Crystal Cavities with Embedded Quantum Dots. Brunswick, LAF; Hallacy, L; Dost, R; Clarke, E; Skolnick, MS and Wilson, LR. August 2025. ACS Photonics, Volume 12 Issue 8 Page 4315-4322. **DOI10.1021/acsphotonics.5c00606**
386. Engineering cm-scale true push-pull electro-optic modulators in a suspended GaAs photonic integrated circuit platform by exploiting the orientation induced asymmetry of the Pockels *r* 41 coefficient. Li, H; Thomas. P; Jiang, P and Balram, K.C. August 2025. Nanophotonics, Volume 14, Issue 18. **DOI: https://doi.org/10.1515/nanoph-2025-0212**
387. Low threshold InAs/InP quantum dot lasers on Si. Jia, H; Park, JS; Zeng, HT; Yuan, JJ; Li, J; Wang, YQ; Liu, SF; Chen, C; Dear, C; Deng, HW; Martin, M; Li, Q; Baron, T; Tang, MC; Seeds, A and Liu, HY. September 2025. 2025 IEEE SILICON PHOTONICS CONFERENCE, SIPHOTONICS. **DOI10.1109/SiPhotonics64386.2025.10984482**
388. Spin properties in droplet epitaxy grown telecom quantum dots. Cizauskas, M; Sala, EM; Heffernan, J; Fox, AM; Bayer, M and Greilich, A. October 2025. Physical Review B, Volume112 Issue16. **DOI10.1103/bm22-smcp**
389. Porous GaN: Anion-Specific Electrochemical Etching Mechanisms and Morphological Control. Harris-Lee, T.R; Thornley, B; Zhang, J; Kappers, M.J and Oliver, R.A. November 2025. ACS applied materials & interfaces. **DOI10.1021/acsami.5c18520**
390. As-Flux-Induced Diameter Control in GaAs Nanowires. Yin, ZY; Zeng, HT; Boras, G; Juluri, RR; Deng, HW; Jia, H; Chen, C; Church, S; Velychko, A; Alghamdi, F; Park, JS; Tang, MC; Mowbray, D; Parkinson, P; Sanchez, AM and Liu, HY. October 2025. JOURNAL OF PHYSICAL CHEMISTRY C. Volume 129 Issue 39 Page 17607-17615. **DOI10.1021/acs.jpcc.5c03887**
391. Optimisation of argon plasma pre-treatment for enhanced silicon surface preparation for germanium epitaxy. Zhang, XC; Zeng, HT; Jia, H; Yu, XY; Huo, SG; Mtunzi, M; Deng, HW; Park, J; Wang, HX; Seeds, A; Liu, HY and Tang, MC. October 2025. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 58 Issue 42. **DOI10.1088/1361-6463/ae0fa6**
392. C-band InAs/InP quantum dots: alternative growth versus indium-flush for self-assembled growth. Yuan, JJ; Jia, H; Dear, C; Deng, HW; Masteghin, MG; El Hajraoui, K; Li, J; Liu, KM; Bai, MX; Wagner, JB; Ramasse, QM; Tang, MC; Seeds, A and Liu, HY. October 2025. SEMICONDUCTOR SCIENCE AND TECHNOLOGY. Volume 40 Issue 10. **DOI10.1088/1361-6641/ae10d5**
393. Ultralow-threshold single-mode quantum-dot laser operating at O-band based on bound-states in the continuum. Lei, DQ; Wang, JT; Ratiu, BP; Deng, HW; Zhang, XC; Yan, Z; Huo, SG; Cao, LW; Li, W; Chen, SM; Li, Q; Liu, HY; Panoiu, NC and Tang, MC. October 2025. JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 58 Issue 41. **DOI10.1088/1361-6463/ae0b80**
394. MBE growth of InAs/GaAs quantum dot lasers on V-grooved (001) Si. Mtunzi, M; Zeng, HT; Bao, LF; Chen, C; Park, JS; Deng, HW; Wang, YQ; Jia, H; Li, J; Wang, HX; Hou, YA; Masteghin, MG; Beanland, R; Gardes, F; Moeyaert, J; Baron, T; Tang, MC; Seeds, A and Liu, HY. October 2025.

JOURNAL OF PHYSICS D-APPLIED PHYSICS. Volume 58 Issue 40 **DOI10.1088/1361-6463/ae074b**

395. Optical gain in O-band active regions with multiple dot-in-well layers. Jandu, GM; Smith, AR; Allford, CP; Power, S; Mishra, P; Cao, Z; Jarvis, L; Zhang, X; Deng, H; Tang, M; Liu, H and Smowton, PM. October 2025. APL Photonics. Volume 10 Issue10. **DOI10.1063/5.0275039**

396. Waveguide excitation and spin pumping of chirally coupled quantum dots. Germanis, S; Chen, XC; Dost, R; Hallett, DJ; Clarke, E; Patil, PK; Skolnick, MS; Wilson, LR; Siampour, H and Fox, AM. October 2025. Optica. Volume 12 Issue 10 Page 1689-1696. **DOI10.1364/OPTICA.569882**

397. Stark tuning and charge state control in individual telecom C-band quantum dots. Martin, NJ ; Brash AJ; Tomlinson, A; Sala, EM; Mills, EO; Phillips, CL; Dost, R; Hallacy, L; Millington-Hotze, P; Hallett, D; O'Flaherty, KA; Heffernan, J; Skolnick, MS; Fox, AM and Wilson, LR. November 2025. APPLIED PHYSICS LETTERS. Volume 127 Issue 19 Article 194001 **DOI 10.1063/5.0302840**