

Referred Journal Articles (71)

Coupled Microspheres and Micropillars

- 1. Characterization of Novel Microsphere Chain Fiber Optic Tips for Potential Use in Ophthalmic Laser Surgery**
T.C. Hutchens, A. Darafshah, A. Fardad, A.N. Antoszyk, H.S. Ying, V.N. Astratov, and N.M. Fried, *J. Biomed. Opt.* **17**, 068004 (2012).
- 2. Periodically focused modes in chains of dielectric spheres**
A. Darafshah and V.N. Astratov, *Appl. Phys. Lett.* **100**, 161121 (2012).
- 3. Fiber coupling to BaTiO₃ glass microspheres in an aqueous environment**
O. Svitelskiy, Y. Li, A. Darafshah, M. Sumetsky, D. Carnegie, E. Rafailov, and V.N. Astratov, *Opt. Lett.* **36**, 2862-2865 (2011).
- 4. Contact Focusing Multimodal Microprobes for Ultraprecise Laser Tissue Surgery**
A. Darafshah, A. Fardad, N.M. Fried, A.N. Antoszyk, H.S. Ying, and V.N. Astratov, *Opt. Express* **19**, 3440-3448 (2011).
Selected for the *Virtual Journal for Biomedical Optics* **6**, Issue 3 (2011).
- 5. Splitting and Lasing of Whispering Gallery Modes in Quantum Dot Micropillars**
B.D. Jones, M. Oxborrow, V.N. Astratov, M. Hopkinson, A. Tahraoui, M.S. Skolnick, and A.M. Fox, *Opt. Express* **18**, 22578-22592 (2010).
- 6. Spectroscopy of Coherently Coupled Whispering-Gallery Modes in Size-Matched Bispheres Assembled on a Substrate**
S. Yang and V.N. Astratov, *Opt. Lett.* **34**, 2057-2059 (2009).
- 7. Photonic Nanojet-Induced Modes in Chains of Size-Disordered Microspheres with an Attenuation of only 0.08 dB per Sphere**
S. Yang and V.N. Astratov, *Appl. Phys. Lett.* **92**, 261111 (2008).
Selected for the *Virtual Journal of Nanoscale Science & Technology* **18**, Issue 2 (2008).
- 8. Perturbations of Whispering Gallery Modes by Nanoparticles Embedded in Microcavities**
K.R. Hiremath and V.N. Astratov, *Opt. Express* **16**, 5421-5426 (2008).
Selected for the *Virtual Journal for Biomedical Optics* **3**, Issue 3 (2008).
- 9. Percolation of Light through Whispering Gallery Modes in 3D Lattices of Coupled Microspheres**
V.N. Astratov and S.P. Ashili, Focus Issue on Physics and Applications of Microresonators, *Opt. Express* **15**, 17351-17361 (2007).
Selected for the *Virtual Journal of Nanoscale Science & Technology* **17**, Issue 10 (2008).
- 10. Whispering Gallery Resonances in Semiconductor Micropillars**
V.N. Astratov, S. Yang, S. Lam, B.D. Jones, D. Sanvitto, , D.M. Whittaker, A.M. Fox, and M.S. Skolnick, A. Tahraoui, P.W. Fry, and M. Hopkinson, *Appl. Phys. Lett.* **91**, 071115 (2007).
- 11. Observation of Nanojet-Induced Modes with Small Propagation Losses in Chains of Coupled Spherical Cavities**
A.M. Kapitonov and V.N. Astratov, *Opt. Lett.* **32**, 409-411 (2007).
- 12. The Effects of Inter-Cavity Separation on Optical Coupling in Dielectric Bispheres**
S.P. Ashili, V.N. Astratov, and E.C.H. Sykes, *Optics Express* **14**, 9460-9466 (2006).
- 13. Optical Coupling at a Distance Between Detuned Spherical Cavities**
A.V. Kanaev, V.N. Astratov, and W. Cai, *Appl. Phys. Lett.* **88**, 111111 (2006).
- 14. Numerical Study of Light Propagation via Whispering Gallery Modes in Microcylinder Coupled Resonator Optical Waveguides**
S. Deng, W. Cai, and V.N. Astratov, *Optics Express* **12**, 6468-6480 (2004).
- 15. Optical Coupling and Transport Phenomena in Chains of Spherical Dielectric Microresonators with Size Disorder**
V.N. Astratov, J.P. Franchak, and S.P. Ashili, *Appl. Phys. Lett.* v. **85**, 5508-5510 (2004).

Semiconductor Quantum Microcavities

- 16. Uncoupled Excitons in Semiconductor Microcavities Detected in Resonant Raman Scattering**
R.M. Stevenson, V.N. Astratov, M.S. Skolnick, J.S. Roberts, and G. Hill, *Phys.Rev.B* **67**, 081301(R) (2003).
- 17. Transition from Strong to Weak Coupling and the Onset of Lasing in Semiconductor Microcavities**
R. Butte, G. Delalleau, A.I. Tartakovskii, M.S. Skolnick, V.N. Astratov, J.J. Baumberg, G. Malpuech, A. Di Carlo, A.V. Kavokin, and J.S. Roberts, *Phys.Rev.B* **65**, 205310 (2002).
- 18. Polariton-Polariton Interactions and Stimulated Scattering in Semiconductor Microcavities**
M.S. Skolnick, R.M. Stevenson, A.I. Tartakovskii, R. Butte, M. Emam-Ismail, D.M. Whittaker, P.G. Savvidis, J.J. Baumberg, A. Lemaitre, V.N. Astratov, J.S. Roberts, *Mat. Sci. Eng.C-Biomimetic and Supramolecular Systems* **19**, 407-416 (2002).
- 19. Continuous Wave Observation of Massive Polariton Redistribution by Stimulated Scattering in Semiconductor Microcavities**
R.M. Stevenson, V.N. Astratov, M.S. Skolnick, D.M. Whittaker, M. Emam-Ismail, A.I. Tartakovskii, P.G. Savvidis, J.J. Baumberg, and J.S. Roberts, *Phys. Rev. Lett.* **85**, 3680-3683 (2000).
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M. Emam-Ismail, V.N. Astratov, M.S. Skolnick, D.M. Whittaker, and J.S. Roberts, *Phys. Rev. B* **62**, 1552-1555 (2000).
- 21. Exciton-Polaritons in Single and Coupled Microcavities**
M.S. Skolnick, V.N. Astratov, D.M. Whittaker, A. Armitage, M. Emam-Ismail, R.M. Stevenson, J.J. Baumberg, J.S. Roberts, D.G. Lidzey, T. Virgili, and D.D.C. Bradley, *J. of Luminescence* **87-89**, 25-29 (2000).
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- 24. Nonlinearities in Emission from the Lower Polariton Branch of Semiconductor Microcavities**
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- 25. Nonlinear Effects in Semiconductor Microcavity Polariton Emission**
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- 26. Exciton-Light Coupling in Single and Coupled Microcavities: Polariton Dispersion and Polarisation Splitting**
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- 27. Cavity-Polariton Dispersion and Polarisation Splitting in Single and Coupled Semiconductor Microcavities**
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- 28. Optically Induced Splitting of Bright Excitonic States in Coupled Quantum Microcavities**
A. Armitage, M.S. Skolnick, V.N. Astratov, D.M. Whittaker, G. Panzarini, L.C. Andreani, T.A. Fisher, J.S. Roberts, A.V. Kavokin, M.A. Kaliteevski, and M.R. Vladimirova, *Phys. Rev. B* **57**, 14877-14881 (1998).
- 29. Polariton-Induced Optical Asymmetry in Semiconductor Microcavities**

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30. **Photo-Induced Lifting of the Degeneracy of Excitonic States in Coupled Quantum Microcavities**
A. Armitage, M.S. Skolnick, V.N. Astratov, D.M. Whittaker, T.A. Fisher, J.S. Roberts, G. Panzarini, L.C. Andreani, A.V. Kavokin, M.A. Kaliteevski, and M.R. Vladimirova, *Physica E* **2**, 54-58 (1998).
31. **Polarization-Dependent Phenomena in the Reflectivity Spectra of Semiconductor Quantum Microcavities**, D. Baxter, M.S. Skolnick, A. Armitage, V.N. Astratov, D.M. Whittaker, T.A. Fisher, J.S. Roberts, D.J. Mowbray, and M.A. Kaliteevskii, *Phys. Rev. B* **56**, R10032-10035 (1997).
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D.M. Whittaker, M.S. Skolnick, T.A. Fisher, A. Armitage, D. Baxter, and V.N. Astratov, *Phys.Stat.Sol.(a)* **164**, 13-17 (1997).
33. **Polariton Dispersion and Polarisation Splitting for Quantum Well Excitons in Single and Coupled Microcavities**
G. Panzarini, L.C. Andreani, A. Armitage, D. Baxter, M.S. Skolnick, J.S. Roberts, V.N. Astratov, M.A. Kaliteevski, A.V. Kavokin, and M.R. Vladimirova, *Phys.Stat.Sol. (a)* **164**, 91-94 (1997).

Photonic Crystal Waveguides

34. **Defect States and Commensurability in Dual-Period $\text{Al}_x\text{Ga}_{1-x}\text{As}$ Photonic Crystal Waveguides**
A.D. Bristow, D.M. Whittaker, V.N. Astratov, M.S. Skolnick, A. Tahraoui, T.F. Krauss, M. Hopkinson, M.P. Croucher, and G.A. Gehring, *Phys.Rev.B* **68**, 033303 (2003).
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A.D. Bristow, V.N. Astratov, R. Shimada, I.S. Culshaw, M.S. Skolnick, D.M. Whittaker, A. Tahraoui, and T.F. Krauss, *IEEE J.of Q.El.* **38**, 880-884 (2002).
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Opals

43. **Interplay of Order and Disorder in the Optical Properties of Opal Photonic Crystals**
V.N. Astratov, A.M. Adawi, S. Fricker, M.S. Skolnick, D.M. Whittaker, and P.N. Pusey, *Phys. Rev. B* **66**, 165215 (2002).

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- 48. Response to “Comments on ‘Enhancement of the Optical Gain of Semiconductors Embedded in Three-Dimensional Photonic Crystals’”**
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- 51. Photonic Band Structure of 3D Ordered Silica Matrices**
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Quantum Wells

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- 59. Two Mechanisms of Screening of an Electric Field in High-Resistivity Semiconductors with Deep Centers**
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- 61. Dynamics of Electric Field Screening in Photorefractive $\text{Bi}_{12}\text{SiO}_{20}$ Crystals**
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- 62. The Evolution of the Photoinduced Space-Charge and Electric-Field Distribution in Photorefractive Sillenite ($\text{Bi}_{12}\text{GeO}_{20}$, $\text{Bi}_{12}\text{SiO}_{20}$) Crystals**
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