

Referred Journal Articles (67)

Whispering Gallery Modes and Coupled Cavities

- 1. 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).
- 2. 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).
- 3. Editorial: Introduction to the Focus Issue of Optics Express on Physics and Applications of Microresonators**
V.N. Astratov, *Opt. Express* **15**, 17171 (2007).
Selected for the Virtual Journal for Biomedical Optics **3**, Issue 1 (2008).
- 4. 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).
- 5. 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).
- 6. 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).
- 7. 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).
- 8. Optical Coupling at a Distance Between Detuned Spherical Cavities**
A.V. Kanaev, V.N. Astratov, and W. Cai, *Appl. Phys. Lett.* **88**, 111111 (2006).
- 9. 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).
- 10. 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).

Opals

- 11. 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).
- 12. Opal Photonic Crystals Infiltrated with Chalcogenide Glasses**
V.N. Astratov, A.M. Adawi, M.S. Skolnick, V.K. Tikhomirov, V. Lyubin, D.G. Lidzey, M. Ariu, and A.L. Reynolds, *Appl. Phys. Lett.*, **78**, 4094-4096 (2001).
- 13. Manifestation of Intrinsic Defects in Optical Properties of Self-Organized Opal Photonic Crystal**
Y.A. Vlasov, V.N. Astratov, A.V. Baryshev, A.A. Kaplyanskii, O.Z. Karimov, and M.F. Limonov, *Phys. Rev. E* **61**, 5784-5793 (2000).
- 14. Optical Gain of CdS Quantum Dots Embedded in a 3D Photonic Crystals**
Y.A. Vlasov, K. Luterova, I. Pelant, B. Honerlage, and V.N. Astratov, *Thin Solid Films* **318**, 93-95 (1998).
- 15. Optical Gain and Lasing in a Semiconductor Embedded in a Three-Dimensional Photonic Crystal**

- Y.A. Vlasov, K. Luterova, I. Pelant, B. Honerlage, and V.N. Astratov, *Journal of Crystal Growth*, **185**, 650-653 (1998).
- 16. Response to “Comments on ‘Enhancement of the Optical Gain of Semiconductors Embedded in Three-Dimensional Photonic Crystals’”**
Y.A. Vlasov, K. Luterova, I. Pelant, B. Honerlage, and V.N. Astratov, *Appl. Phys. Lett.* **73**, 552 (1998).
- 17. Enhancement of Optical Gain of Semiconductors Embedded in Three-Dimensional Photonic Crystals**
Y.A. Vlasov, K. Luterova, I. Pelant, B. Honerlage, and V.N. Astratov, *Appl. Phys. Lett.* **71**, 1616-1618 (1997).
- 18. Existence of a Photonic Pseudogap for Visible Light in Synthetic Opals**
Y.A. Vlasov, V.N. Astratov, O.Z. Karimov, A.A. Kaplyanskii, V.N. Bogomolov, and A.V. Prokofiev *Phys. Rev. B* **55**, R13357-13360 (1997).
- 19. Photonic Band Structure of 3D Ordered Silica Matrices**
V.N. Astratov, Y.A. Vlasov, O.Z. Karimov, A.A. Kaplyanskii, Yu.G. Musikin, N.A. Bert, V.N. Bogomolov, and A.V. Prokofiev, *Superlattices and Microstructures* **22**, 393-397 (1997).
- 20. Photonic Band Gaps in 3D Ordered FCC Silica Matrices**
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- 21. Optical Spectroscopy of Opal Matrices with CdS Embedded in its Pores: Quantum Confinement and Photonic Band Gap Effects**
V.N. Astratov, V.N. Bogomolov, A.A. Kaplyanskii, A.V. Prokofiev, L.A. Samoilovich, S.M. Samoilovich, and Y.A. Vlasov, *Nuovo Cimento D* **17**, 1349-1354 (1995).

Photonic Crystal Waveguides

- 22. 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).
- 23. Polarization Conversion in the Reflectivity Properties of Photonic Crystal Waveguides**
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).
- 24. Photonic Bandstructure of Patterned Waveguides with Dielectric and Metallic Cladding**
D.M.Whittaker, I.S.Culshaw, V.N.Astratov, and M.S.Skolnick, *Phys.Rev.B* **65**, 073102 (2002).
- 25. Heavy Photon Dispersions in Photonic Crystal Waveguides**
V.N. Astratov, R.M. Stevenson, I.S. Culshaw, D.M. Whittaker, M.S. Skolnick, T.F. Krauss, and R.M. De La Rue, *Appl. Phys. Lett.* **77**, 178-180 (2000).
- 26. Reflectivity Studies of Photonic Band Structure Effects in Two-Dimensional Air/Semiconductor Lattices**
V.N. Astratov, R.M. Stevenson, I.S. Culshaw, D.M. Whittaker, M.S. Skolnick, T.F. Krauss, and R. M. De La Rue, *Phys. Status Solidi (a)* **178**, 565-569 (2000).
- 27. Determination of the Band Structure of Photonic Crystal Waveguides**
I.S. Culshaw, V.N. Astratov, R.M. Stevenson, D.M. Whittaker, M.S. Skolnick, T.F. Krauss, and R.M. De La Rue, *Physica E* **7**, 650-655 (2000).
- 28. Photonic Band Structure Effects in the Reflectivity of Periodically Patterned Waveguides**
V.N. Astratov, D.M. Whittaker, I.S. Culshaw, R.M. Stevenson, M.S. Skolnick, T.F. Krauss, and R.M. DeLaRue, *Phys. Rev. B* **60**, R16255-16258 (1999).
- 29. Resonant Coupling of Near-Infrared Radiation to Photonic Band Structure Waveguides**
V.N. Astratov, I.S. Culshaw, R.M. Stevenson, D.M. Whittaker, M.S. Skolnick, T.F. Krauss, and R.M. DeLaRue, *J. of Lightwave Technology* **17**, 2050-2057 (1999).
- 30. Experimental Technique to Determine the Band Structure of Two-Dimensional Photonic Lattices**

V.N. Astratov, R.M. Stevenson, M.S. Skolnick, D.M. Whittaker, S. Brand, I.S. Culshaw, T.F. Krauss, R.M. DeLaRue, and O.Z. Karimov, *IEE Proceedings-Optoelectronics* **145**, 398-402 (1998).

Semiconductor Quantum Microcavities

- 31. 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).
- 32. 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).
- 33. Polariton-Polariton Interactions and Stimulated Scattering in Semiconductor Microcavities**
M.S. Skolnick, R.M. Stevenson, A.I. Tartakovskii, R. Butte, M. Emam-Ismael, 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).
- 34. 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-Ismael, A.I. Tartakovskii, P.G. Savvidis, J.J. Baumberg, and J.S. Roberts, *Phys. Rev. Lett.* **85**, 3680-3683 (2000).
- 35. Asymmetric Photoluminescence Spectra from Excitons in a Coupled Microcavity**
M. Emam-Ismael, V.N. Astratov, M.S. Skolnick, D.M. Whittaker, and J.S. Roberts, *Phys. Rev. B* **62**, 1552-1555 (2000).
- 36. Exciton-Polaritons in Single and Coupled Microcavities**
M.S. Skolnick, V.N. Astratov, D.M. Whittaker, A. Armitage, M. Emam-Ismael, 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).
- 37. Spatial Coherence of Polaritons in Semiconductor Microcavities**
A.I. Tartakovskii, D.N. Krizhanovskii, V.D. Kulakovskii, N.A. Gippius, S.G. Tikhodeev, M.S. Skolnick, V.N. Astratov, and J.S. Roberts, *Phys.Status Solidi (b)* **221**, 163-167 (2000).
- 38. Relaxation bottleneck and its suppression in semiconductor microcavities**
A.I. Tartakovskii, M. Emam-Ismael, R.M. Stevenson, M.S. Skolnick, V.N. Astratov, D.M. Whittaker, J.J. Baumberg, and J.S. Roberts, *Phys. Rev. B* **62**, R2283-R2286 (2000).
- 39. Nonlinearities in Emission from the Lower Polariton Branch of Semiconductor Microcavities**
A.I. Tartakovskii, V.D. Kulakovskii, D.N. Krizhanovskii, M.S. Skolnick, V.N. Astratov, A. Armitage, and J.S. Roberts, *Phys. Rev. B* **60**, R11293-11296 (1999).
- 40. Nonlinear Effects in Semiconductor Microcavity Polariton Emission**
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- 41. Exciton-Light Coupling in Single and Coupled Microcavities: Polariton Dispersion and Polarisation Splitting**
G. Panzarini, L.C. Andreani, A. Armitage, D. Baxter, M.S. Skolnick, V.N. Astratov, J.S. Roberts, A.V. Kavokin, M.V. Vladimirova, and M.A. Kaliteevski, *Phys. Rev. B* **59**, 5082-5089 (1999).
- 42. Cavity-Polariton Dispersion and Polarisation Splitting in Single and Coupled Semiconductor Microcavities**
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- 43. 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).

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Quantum Wells

49. Electrical and Optical Bistability in $\text{In}_x\text{Ga}_{1-x}\text{As}$ -GaAs Piezoelectric Quantum Wells

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Photorefractive Crystals

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- 61. Stratification of the Space Charge in the Case of Screening of a Field in Crystals**
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- 63. Determination of Traps Parameters in High-Resistivity Noncentrosymmetric Photoconductors by the Method of Trapped Charge Optical Probing**
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- 64. Dynamics of the Distribution of the Field and Charge in $\text{Bi}_{12}\text{GeO}_{20}$ in Case of Thermal Ionization of Traps**
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- 65. Effect of Preliminary Optical Excitation of Traps on Charge Transfer Processes in $\text{Bi}_{12}\text{GeO}_{20}$ Crystals**
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- 66. Image Formation in Electron-Beam-Charged (001)- and (110)-Cut $\text{Bi}_{12}\text{SiO}_{20}$ and $\text{Bi}_{12}\text{GeO}_{20}$ Slices**
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- 67. Direct Investigation of the Electric Field Distribution in a $\text{Bi}_{12}\text{GeO}_{20}$ Crystal by Means of the Transverse Electrooptic Effect**
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