Publications 2015

A Special Role for Zinc Stearate and Octadecene in the Synthesis of Luminescent ZnSe Nanocrystals
M. Bański, M.Afzaal, M.A. Malik, A.Podhorodecki, J. Misiewicz, P. O'Brien
Chem. Mater. ***27****, 3797 (2015)*

Temperature evolution of carrier dynamics in $GaN_xP_yAs_{1-y-x}$ alloys
M. Baranowski, R. Kudrawiec, A. V. Luce, M. Latkowska, K. M. Yu, Y. J. Kuang, J. Misiewicz, C. W. Tu, W. Walukiewicz
Journal of Applied Physics ***117****, 175702 (2015)*

Photoluminescence characterization of InGaN/InGaN quantum wells grown by plasma-assisted molecular beam epitaxy: Impact of nitrogen and galium fluxes
M. Baranowski, R. Kudrawiec, J. Misiewicz, H. Turski, C. Skierbiszewski
Physica Status Solidi B-BASIC SOLID STATE PHYSICS ***252****, 983 (2015)*

Nitrogen-related changes in exciton localization and dynamics in GaInNAs/GaAs quantum wells grown by metalorganic vapor phase epitaxy
M. Baranowski, R. Kudrawiec, M. Hammar
Applied Physics A-MATERIALS SCIENCE & PROCESSING ***118****, 479 (2015)*

Influence of temperature on spin polarization dynamics in dilute nitride semiconductors—Role of nonparamagnetic centers
M. Baranowski, J. Misiewicz
Journal of Applied Physics ***118****, 155705 (2015)*

Can we use rare-earth nanocrystals to target glycans for the visualization of melanoma?
R.Bilyy, A.Podhorodecki
Nanomedicine (2015)

Single photon emission up to liquid nitrogen temperature from charged excitons confined in GaAs-based epitaxial nanostructures
Ł. Dusanowski, M. Syperek, A. Maryński, L. H. Li, J. Misiewicz, S. Höfling, M. Kamp, A. Fiore, G. Sęk
Appl. Phys. Lett. ***106****, 233107 (2015)*

Submonolayer uniformity of type II InAs/GaInSb W-shaped quantum wells probed by full-wafer photoluminescence mapping in the mid-infrared spectral range
M. Dyksik, M. Motyka, G. Sęk, J. Misiewicz, M. Dallner, R. Weih, M. Kamp, S. Höfling
Nano Research Letters ***10****, 402 (2015)*

Monolithic high-index contrast grating: a material independent high-reflectance VCSEL mirror
M. Gębski, M. Dems, A. Szerling, M. Motyka, L. Marona, R. Kruszka, D. Urbańczyk, M. Walczakowski, N. Pałka, A. Wójcik-Jedlińska, Q. J. Wang, D. H. Zhang, M. Bugajski, M. Wasiak, T. Czyszanowski
Optics Express ***23****, 11674 (2015)*

Electronic Band Structure and Material Gain of Dilute Nitride Quantum Wells Grown on InP Substrate
M. Gładysiewicz, R. Kudrawiec, M. Wartak
IEEE Journal of Quantum Electronics ***51*** *(2015)*

Theoretical and experimental studies of electric field distribution in N-polar GaN/AlGaN/GaN heterostructures
M. Gładysiewicz, Ł. Janicki, M. Siekacz, G. Cywiński, C. Skierbiszewski, R. Kudrawiec
Appl. Phys. Lett. ***107****, 262107 (2015)*

Probing the Excitonic States of Site-Controlled GaN Nanowire Quantum Dots
M. Holmes, S. Kako, K. Choi, P. Podemski, M. Arita, Y. Arakawa
Nano Lett. ***15****, 1047 (2015)*

Compensation of phonon-induced renormalization of vacuum Rabi splitting in large quantum dots: Towards temperature-stable strong coupling in the solid state with quantum dot-micropillars
C. Hopfmann, A. Musiał, M. Strauß, A. M. Barth, M. Glässl, A. Vagov, M. Strauß, C. Schneider, S. Höfling, M. Kamp, V. M. Axt, and S. Reitzenstein
Phys. Rev. B ***92****, 245403 (2015)*

Advanced optical characterization of AlGaAs/GaAs superlattices for active regions in quantum cascade lasers
F. Janiak, M. Dyksik, M. Motyka, K. Ryczko, J. Misiewicz, K. Kosiel, M. Bugajski
Opt. Quant. Electron ***47****, 945 (2015)*

Contactless electroreflectance studies of surface potential barrier in AlGaN/n-AlGaN structures with various Al concentrations
Ł. Janicki R. Kudrawiec, K. Pakuła, R. Stępniewski, J. Misiewicz
Physica Status Solidi B-BASIC SOLID STATE PHYSICS ***252****, 1038 (2015)*

Growth and characterization of $ZnO_{1-x}S_x$ highly mismatched alloys over the entire composition
M. Jaquez, K. M. Yu, M. Ting, M. Hettick, J. F. Sánchez-Royo, M. Wełna, A. Javey, O. D. Dubon, W. Walukiewicz
J. Appl. Phys. ***118****, 215702 (2015)*

Optical properties of GaAsBi/GaAs quantum wells: Photoreflectance, photoluminescence and time-resolved photoluminescence study
J. Kopaczek, W. M. Linhart, M. Baranowski, R. D. Richards, F. Bastiman, J. P. R. David, R. Kudrawiec
Semicond. Sci. Technol. ***30****, 094005 (2015)*

Reflection Layer Mediated Enhancement of Terahertz Radiation Utilizing Heavily-Doped InAs Thin Films
M. Kozub, K. Nishisaka, T. Maemoto, S. Sasa, K. Takayama, M. Tonouchi
Journal of Infrared, Millimeter and Terahertz Waves ***36****, 423 (2015)*

Conduction electrons localized by charged magnetoacceptors A^{2-} in GaAs/GaAlAs quantum wells
M. Kubisa, K. Ryczko, I. Bisotto, C. Chaubet, A. Raymond, W. Zawadzki
Phys. Rev. B ***92****, 035409 (2015)*

Effect of the nanocrystalline structure type on the optical properties of TiO_2:Nd (1 at.%) thin films
M. M. Mazur, D. Wojcieszak, D. Kaczmarek, J. Domaradzki, G. Zatryb, J. Misiewicz, J. Morgiel
Optical Materials ***45****, 423 (2015)*

On the modified active region design of interband cascade lasers
M. Motyka, K. Ryczko, M. Dyksik, G. Sęk, J. Misiewicz, R. Weih, M. Dallner, S. Höfling, and M. Kamp
Journal of Applied Physics ***117****, 084312 (2015)*

Interface Intermixing in Type II InAs/GaInAsSb Quantum Wells Designed for Active Regions of Mid-Infrared-Emitting Interband Cascade Lasers
M. Motyka, G. Sęk, K. Ryczko, M. Dyksik, R. Weih, G. Patriarche, J. Misiewicz, M. Kamp, S. Höfling
Nanoscale Research Letters ***10****, 471 (2015)*

Magnetic field control of the neutral and charged exciton fine structure in single quantum dashes emitting at 1.55 µm
P. Mrowiński, A. Musiał, A. Maryński, M. Syperek, J. Misiewicz, A. Somers, J. P. Reithmaier, S. Höfling, and G.Sęk
Appl. Phys. Lett. ***106****, 053114 (2015)*

Correlations between axial and lateral emission of coupled quantum dot–micropillar cavities
A. Musiał, C. Hopfmann, T. Heindel, C. Gies, M. Florian, H. A. M. Leymann, A. Foerster, C. Schneider, F. Jahnke, S. Höfling, M. Kamp, and S. Reitzenstein
Phys. Rev. B ***91****, 205310 (2015)*

Ion-ioninteractions in β -$NaGdF_4$:Yb^{3+},Er^{3+} nanocrystals–the effectof ion concentration and their clustering
A. Noculak, A. Podhorodecki, G. Pawlik, M. Bański, J. Misiewicz
Nanoscale ***28****, 13784 (2015)*

Ghost Branch Photoluminescence From a Polariton Fluid Under Nonresonant Excitation
M. Pieczarka, M. Syperek, Ł. Dusanowski, J. Misiewicz, F. Langer, A. Forchel, M. Kamp, Ch. Schneider, S. Höfling, A. Kavokin, G. Sęk
Phys. Rev. Lett. ***115****, 186401 (2015)*

Simultaneous growth of GaN/AlGaN quantum wells on c-, a-, m-, and (20.1)-plane GaN bulk substrates obtained by the ammonothermal method: Structural studies
M. Rudziński, R. Kudrawiec, G. Patriarche, R. Kucharski, P. Caban, W. Strupiński
Journal of Crystal Growth ***414****, 87 (2015)*

Tailoring the effect of electric field in type II W-design InAs/GaInSb quantum well structures for emission up to 12 µm
K. Ryczko, T. Liszka
Superlattices and Microstructures ***78****, 144 (2015)*

Novel design of type-II quantum wells for mid-infrared emission with tensile-strained GaAsSb layer for confinement of holes
K. Ryczko, G. Sęk, J. Misiewicz
Applied Physics Express ***8****, 121201 (2015)*

Fourier analysis of scratches generated on m-GaN substrates during polishing
J. Serafińczuk, G. Jóźwiak, P. Paletko, R. Kudrawiec, R. Kucharski, M. Zając, T. Gotszalk
Crystal Research and Technology ***50****, 263 (2015)*

Contactless electroreflectance spectroscopy of ZnO/ZnMgO quantum wells: Optical transitions and Fabry-Perot features
M. Wełna, R. Kudrawiec, J. Misiewicz, M. Yano, K. Koike, S. Sasa
Physica Status Solidi A-APPLICATIONS AND MATERIALS SCIENCE ***212****, 780 (2015)*

Effects of a semiconductor matrix on the band anticrossing in dilute group II-VI oxides
M. Wełna, R. Kudrawiec, Y. Nabetani, T. Tanaka, M. Jaquez, O. D. Dubon, K. M. Yu, W. Walukiewicz
Semicond. Sci. Technol. ***30****, 085018 (2015)*

Influence of Nd dopant amount on microstructure and photoluminescence of TiO_2:Nd thin films
D. Wojcieszak, M. M. Mazur, D. Kaczmarek, J. Morgiel, G. Zatryb, J. Domaradzki, J. Misiewicz
Optical Materials ***48****, 172 (2015)*

Investigation of near mid-gap trap energy level in a mid-wavelength InAs/GaSb type-II superlattices
J. Wróbel, Ł. Ciura, M. Motyka, F. Szmulowicz, A. Kolek, A. Kowalewski, P. Moszczyński, M. Dyksik, P. Madejczyk, S. Krishna and A. Rogalski
Semiconductor Science and Technology ***30****, 115004 (2015)*

Raman scattering from confined acoustic phonons of silicon nanocrystals in silicon oxide matrix
G.Zatryb, P.Wilson, A.Podhorodecki, J.Misiewicz, J.Wojcik, P.Masher
Phys. Rev. B ***91****, 235444 (2015)*

Effect of hydrogen passivation on the photoluminescence of Tb ions in silicon rich silicon oxide films
G. Zatryb, M. M. Klak, J. Wojcik, J. Misiewicz, P. Mascher, A. Podhorodecki
J. Appl. Phys. ***118****, 243104 (2015)*

Electronic band structure of compressively strained $Ge_{1-x}Sn_x$ with x<0.11 studied by contactless electroreflectance
K. Żelazna, M. P. Polak, P. Scharoch, J. Serafinczuk, M. Gladysiewicz, J. Misiewicz, J. Dekoster, R. Kudrawiec
Appl. Phys. Lett. ***106****, 142102 (2015)*