

Alexander Tartakovskii, CV

Professional experience

08/2014	Departmental Director of Research, Department of Physics and Astronomy (P&A), University of Sheffield (UoS)
01/2014	Professor of Solid State Physics (P&A, UoS)
01/2011 - 01/2014	Reader in Experimental Semiconductor Physics (P&A, UoS)
08/2010 - 01/2011	Senior Lecturer (P&A, UoS)
01/2009 - 08/2010	Senior Research Fellow (P&A, UoS)
08/2005 - 08/2010	EPSRC Advanced Research Fellow (P&A, UoS)
03/2001 – 08/2005	Research Associate and Research Fellow (P&A, UoS), adviser Prof MS Skolnick
1999-2001	Staff scientist, Institute of Solid State Physics, Chernogolovka, Russia
1997	Visiting Researcher, Technische Physik, Universität Würzburg, advisers Prof A Forchel and Dr M Bayer

Education

1996-1999	PhD in Solid State Physics, Institute of Solid State Physics, Chernogolovka, Russia, adviser Prof VD Kulakovskii
1990 - 1996	Diploma in physics and applied maths (Masters equivalent), Moscow Institute of Physics and Technology, Moscow, Russia

Awards

2005	EPSRC Advanced Research Fellowship (2005-10)
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Scientific publications, invited conference talks and seminars

- 90 original and 30 conference peer-reviewed journal publications (3 Nature Materials, 2 Nature Physics, 1 Nature Nanotechnology, 2 Nature Communications, 3 Nano Letters, 1 Advanced Materials, 7 Physical Review Letters, 36 Physical Review B, 9 Applied Physics Letters)
- Editor of 'Quantum Dots: Optics, Electron Transport and Future Applications', Cambridge University Press (2012)
- 45 invited talks at international conferences; 27 invited seminars at research institutions
- Google scholar: h-index 34, 4100 citations, 10 papers cited 100 or more times
- Web of science: h-index 28, 2800 citations, 7 papers cited more than 100 times

Research funding

Engineering and Physical Sciences Research Council:

- PI on 3 grants with total value £700k.
- Co-I and WP leader on 3 Sheffield's Programme Grants (2008-2021) with total value £13.6M, up to 25% applicable to my work.

European Commission (Marie Curie ITNs, Graphene Flagship):

- Coordinator and organiser of two Marie (Sklodowska) Curie ITNs under FP7 and H2020: S³NANO (2012-15) and Spin-NANO (2016-2019); 8M€ total
- Node coordinator in ITNs SPINOPTRONICS (2009-12) and 4PHOTON (2017-2020)

- Total to Sheffield from ITNs: £1.4M.
- PI on Graphene Flagship projects (the only group in Sheffield): £400k.

Royal Society: International exchange grants, £58k

CONACYT Mexico: 2x PhD studentships, £70k

Research group in photonics of 2D Materials at UoS

- Current activities: group of 2 postdocs and 5 PhD students working on photonics and polaritonics of atomically thin semiconductors and their heterostructures including materials such as transition metal dichalcogenides (W/MoSe₂, W/MoS₂ etc) as well as III-VI materials (GaSe, GaTe). Particular foci are in the strong exciton-photon coupling and microcavity polariton physics, band-gap engineering and alloyed materials, development of quantum light emitters. Techniques applied: tunable Fabry-Perot microcavities (low T, high B-field), magneto-spectroscopy, Raman (including ultra-low frequency), time-resolved and photon correlation spectroscopy.

- Previous activities: photonics and spin physics in III-V semiconductor nano-structures (quantum dots/wells, nanowires); nuclear magnetism in III-V quantum dots; magneto-spectroscopy of semiconductor nano-structures; photonic crystal nano-cavities; ultra-fast spectroscopy; semiconductor microcavities and polariton physics including non-linear phenomena (in GaAs and organic microcavities).

Notable external positions

- Member of Programme Committees for many international conferences including CLEO Europe/EQEC (2017), several International Conferences on Quantum Dots (2016, 2014, 2012), International Conference on Modulated Semiconductor Structures (2013) etc.
- Organiser and Programme Chair of the 6th International Conferences on Quantum Dots (2010, 350 attendees); organiser of Winter School on “Few spin solid state nano-systems” (2013) and several IoP Quantum Dot Days (2009-2014).
- Editorial Board Member for Scientific Reports
- Editor of a book “Quantum Dots: Optics, Electron Transport and Future Applications”, Cambridge University Press (2012)

Notable positions at UoS

- Departmental Director of Research at the Department of Physics and Astronomy (P&A)
- member of the Executive Committee at P&A
- Chair of the Research Committee at P&A
- member of the Research and Innovation Committee at the Faculty of Science

Teaching experience

- Undergraduate physics teaching at UoS since 2006, level 1-4 and Master courses.
- Current teaching duties: lecture modules ‘Optics’ (level 2) and ‘Magnetic Resonance: Principles and applications’ (level 4, MPhys); level 1 physics tutorials; level 3&4 physics projects
- Certificate in Learning and Teaching, University of Sheffield (<http://www.sheffield.ac.uk/lets/cpd/cilt>), 2011

Selected publications (see full list below)

1. S. Dufferwiel, T. P. Lyons, D. D. Solnyshkov, A. A. P. Trichet, F. Withers, S. Schwarz, G. Malpuech, J. M. Smith, K. S. Novoselov, M. S. Skolnick, D. N. Krizhanovskii, A. I. Tartakovskii, “Valley addressable exciton-polaritons in atomically thin semiconductors”, arXiv:1612.05073 (2016), under review in Nature Photonics

2. S. Schwarz, A. Kozikov, F. Withers, J. K. Maguire, A. P. Foster, S. Dufferwiel, L. Hague, M. N. Makhonin, L. R. Wilson, A. K. Geim, K. S. Novoselov, A. I. Tartakovskii, "Electrically pumped single-defect light emitters in WSe₂", *2D Materials*, 3, 025038 (2016).
3. A. M. Waeber, M. Hopkinson, I. Farrer, D. A. Ritchie, J. Nilsson, R. M. Stevenson, A. J. Bennett, A. J. Shields, G. Burkard, A. I. Tartakovskii, M. S. Skolnick, E. A. Chekhovich, "Few-second-long correlation times in a quantum dot nuclear spin bath probed by frequency-comb nuclear magnetic resonance spectroscopy", *NATURE PHYSICS* 12, 688 (2016).
4. S. Dufferwiel, S. Schwarz, F. Withers, A. A. P. Trichet, F. Li, M. Sich, O. Del Pozo-Zamudio, C. Clark, A. Nalitov, D.D. Solnyshkov, G. Malpuech, K. S. Novoselov, J. M. Smith, M. S. Skolnick, D. N. Krizhanovskii, A. I. Tartakovskii, "Exciton-polaritons in van der Waals heterostructures embedded in tunable microcavities", *NATURE COMMUNICATIONS*, 6, 8579 (2015).
5. F. Withers, O. Del Pozo-Zamudio, S. Schwarz, S. Dufferwie, P. M. Walker, T. Godde, A. P. Rooney, A. Gholinia, C. R. Woods, P. Blake, S. J. Haigh, K. Watanabe, T. Taniguchi, I. L. Aleiner, A. K. Geim, V. I. Fal'ko, A. I. Tartakovskii, K. S. Novoselov, "WSe₂ Light-Emitting Tunneling Transistors with Enhanced Brightness at Room Temperature", *NANO LETTERS*, 15, 8223 (2015).
6. F. Withers, O. Del Pozo-Zamudio, A. Mishchenko, A. P. Rooney, A. Gholinia, K. Watanabe, T. Taniguchi, S. J. Haigh, A. K. Geim, A. I. Tartakovskii, K. S. Novoselov, "Light-emitting diodes by band-structure engineering in van der Waals heterostructures", *NATURE MATERIALS*, 14, 301 (2015).
7. E. A. Chekhovich, M. Hopkinson, M. S. Skolnick, A. I. Tartakovskii, "Suppression of nuclear spin bath fluctuations in self-assembled quantum dots induced by inhomogeneous strain", *NATURE COMMUNICATIONS*, 6, 6348 (2015).
8. S. Schwarz, S. Dufferwiel, P. M. Walker, F. Withers, A. A. P. Trichet, M. Sich, F. Li, E. A. Chekhovich, D. N. Borisenko, N. N. Kolesnikov, K. S. Novoselov, M. S. Skolnick, J. M. Smith, D. N. Krizhanovskii, A. I. Tartakovskii, "Two-Dimensional Metal-Chalcogenide Films in Tunable Optical Microcavities", *NANO LETTERS*, 14, 7003 (2014).
9. E. A. Chekhovich, M. N. Makhonin, A. I. Tartakovskii, A. Yacoby, H. Bluhm, K. C. Nowack, L. M. K. Vandersypen "Nuclear spin effects in semiconductor quantum dots", *NATURE MATERIALS*, 12, 494 (2013).
10. E. A. Chekhovich, M. M. Glazov, A. B. Krysa, M. Hopkinson, P. Senellart, A. Lemaître, M. S. Skolnick, A. I. Tartakovskii, "Element-sensitive measurement of the hole–nuclear spin interaction in quantum dots", *NATURE PHYSICS*, 9, 74 (2013).
11. M. N. Makhonin, K. V. Kavokin, P. Senellart, A. Lemaître, A. J. Ramsay, M. S. Skolnick, A. I. Tartakovskii, "Fast control of nuclear spin polarization in an optically pumped single quantum dot", *NATURE MATERIALS* 10, 844 (2011).

See my list of publications in peer reviewed journals on the following pages

List of publications

The list includes peer-reviewed articles and excludes about 30 conference proceeding papers. In summary the list includes 3 Nature Materials, 2 Nature Physics, 1 Nature Nanotechnology, 2 Nature Communications, 3 Nano Letters, 1 Advanced Materials, 7 Physical Review Letters, 36 Physical Review B and 9 Applied Physics Letters publications

1. P. Tonndorf, S. Schwarz, J. Kern, I. Niehues, O. Del Pozo Zamudio, A. Dmitriev, A. Bakhtinov, D. Borisenko, N. Kolesnikov, A. I. Tartakovskii, S. Michaelis de Vasconcellos, R. Bratschitsch, "Single-photon emitters in GaSe", 2D MATERIALS, in press (2017)
2. T. Godde, D. Schmidt, J. Schmutzler, M. Aßmann, J. Debus, F. Withers, E. M. Alexeev, O. Del Pozo-Zamudio, O. V. Skrypka, K. S. Novoselov, M. Bayer, A. I. Tartakovskii, "Exciton and trion dynamics in atomically thin MoSe₂ and WSe₂: Effect of localization", PHYSICAL REVIEW B 94, 165301 (2016)
3. S. Schwarz, A. Kozikov, F. Withers, J. K. Maguire, A. P. Foster, S. Dufferwiel, L. Hague, M. N. Makhonin, L. R. Wilson, A. K. Geim, K. S. Novoselov, A. I. Tartakovskii, "Electrically pumped single-defect light emitters in WSe₂", 2D MATERIALS, 3, 025038 (2016).
4. A. M. Waeber, M. Hopkinson, I. Farrer, D. A. Ritchie, J. Nilsson, R. M. Stevenson, A. J. Bennett, A. J. Shields, G. Burkard, A. I. Tartakovskii, M. S. Skolnick, E. A. Chekhovich, "Few-second-long correlation times in a quantum dot nuclear spin bath probed by frequency-comb nuclear magnetic resonance spectroscopy", NATURE PHYSICS 12, 688 (2016).
5. A. Ulhaq, Q. Duan, E. Zallo, F. Ding, O. G. Schmidt, A. I. Tartakovskii, M. S. Skolnick, and E. A. Chekhovich, "Vanishing electron g factor and long-lived nuclear spin polarization in weakly strained nanohole-filled GaAs/AlGaAs quantum dots", PHYSICAL REVIEW B 93, 165306 (2016).
6. F. Withers, O. Del Pozo-Zamudio, S. Schwarz, S. Dufferwie, P. M. Walker, T. Godde, A. P. Rooney, A. Gholinia, C. R. Woods, P. Blake, S. J. Haigh, K. Watanabe, T. Taniguchi, I. L. Aleiner, A. K. Geim, V. I. Fal'ko, A. I. Tartakovskii, K. S. Novoselov, "WSe₂ Light-Emitting Tunneling Transistors with Enhanced Brightness at Room Temperature", NANO LETTERS, 15, 8223 (2015).
7. S. Dufferwiel, S. Schwarz, F. Withers, A. A. P. Trichet, F. Li, M. Sich, O. Del Pozo-Zamudio, C. Clark, A. Nalitov, D.D. Solnyshkov, G. Malpuech, K. S. Novoselov, J. M. Smith, M. S. Skolnick, D. N. Krizhanovskii, A. I. Tartakovskii, "Exciton-polaritons in van der Waals heterostructures embedded in tunable microcavities", NATURE COMMUNICATIONS, 6, 8579 (2015);
8. O. Del Pozo-Zamudio, S. Schwarz, M. Sich, I. A. Akimov, M. Bayer, R. C. Schofield, E. A. Chekhovich, B. J. Robinson, N. D. Kay, O. V. Kolosov, A. I. Dmitriev, G. V. Lashkarev, D. N. Borisenko, N. N. Kolesnikov, A. I. Tartakovskii, "Photoluminescence of two-dimensional GaTe and GaSe films", 2D Materials, 2, 035010 (2015);
9. F. Withers, O. Del Pozo-Zamudio, A. Mishchenko, A. P. Rooney, A. Gholinia, K. Watanabe, T. Taniguchi, S. J. Haigh, A. K. Geim, A. I. Tartakovskii, K. S. Novoselov, "Light-emitting diodes by band-structure engineering in van der Waals heterostructures", NATURE MATERIALS, 14, 301 (2015);
10. E. A. Chekhovich, M. Hopkinson, M. S. Skolnick, A. I. Tartakovskii, "Suppression of nuclear spin bath fluctuations in self-assembled quantum dots induced by inhomogeneous strain", NATURE COMMUNICATIONS, 6, 6348 (2015);
11. S. J. Haigh, A. P. Rooney, E. Prestat, F. Withers, O. Del Pozo Zamudio, A. Mishchenko, A. Gholinia, K. Watanabe, T. Taniguchi, A. I. Tartakovskii, A. K. Geim, K. S. Novoselov, "Cross sectional STEM imaging and analysis of multilayered two dimensional crystal heterostructure devices", MICROSCOPY AND MICROANALYSIS 21, 107 (2015)
12. B. Pingault, J. N. Becker, C. H. H. Schulte, C. Arend, C. Hepp, T. Godde, A. I. Tartakovskii, M. Markham, C. Becher, M. Atature, "All-Optical Formation of Coherent Dark States of Silicon-Vacancy Spins in Diamond", PHYSICAL REVIEW LETTERS, 113, 263601 (2014);

13. S. Schwarz, S. Dufferwiel, P. M. Walker, F. Withers, A. A. P. Trichet, M. Sich, F. Li, E. A. Chekhovich, D. N. Borisenko, N. N. Kolesnikov, K. S. Novoselov, M. S. Skolnick, J. M. Smith, D. N. Krizhanovskii, A. I. Tartakovskii, "Two-Dimensional Metal-Chalcogenide Films in Tunable Optical Microcavities", *NANO LETTERS*, **14**, 7003 (2014);
14. C. Bulutay, E. A. Chekhovich, A. I. Tartakovskii, "Nuclear magnetic resonance inverse spectra of InGaAs quantum dots: Atomistic level structural information", *PHYSICS REVIEW B*, **90**, 205425 (2014);
15. D. Sercombe, S. Schwarz, O. Del Pozo-Zamudio, F. Liu, B. J. Robinson, E. A. Chekhovich, I. I. Tartakovskii, O. Kolosov, A. I. Tartakovskii, "Optical investigation of the natural electron doping in thin MoS₂ films deposited on dielectric substrates", *SCIENTIFIC REPORTS*, **3**, 3489 (2013);
16. E. A. Chekhovich, M. N. Makhonin, A. I. Tartakovskii, A. Yacoby, H. Bluhm, K. C. Nowack, L. M. K. Vandersypen "Nuclear spin effects in semiconductor quantum dots", *NATURE MATERIALS*, **12**, 494 (2013);
17. J. Puebla, E. A. Chekhovich, M. Hopkinson, P. Senellart, A. Lemaître, M. S. Skolnick, and A. I. Tartakovskii, "Dynamic nuclear polarization in InGaAs/GaAs and GaAs/AlGaAs quantum dots under nonresonant ultralow-power optical excitation", *PHYSICAL REVIEW B* **88**, 045306 (2013);
18. I. J. Luxmoore, R. Toro, O. Del Pozo-Zamudio, N. A. Wasley, E. A. Chekhovich, A. M. Sanchez, R. Beanland, A. M. Fox, M. S. Skolnick, H. Y. Liu, A. I. Tartakovskii, "III–V quantum light source and cavity-QED on Silicon", *SCIENTIFIC REPORTS*, **3**, 1239 (2013);
19. E. A. Chekhovich, M. M. Glazov, A. B. Krysa, M. Hopkinson, P. Senellart, A. Lemaître, M. S. Skolnick, A. I. Tartakovskii, "Element-sensitive measurement of the hole–nuclear spin interaction in quantum dots", *NATURE PHYSICS*, **9**, 74 (2013);
20. O. D. D. Couto, Jr., D. Sercombe, J. Puebla, L. Otubo, I. J. Luxmoore, M. Sich, T. J. Elliott, E. A. Chekhovich, L. R. Wilson, M. S. Skolnick, H.Y. Liu, A. I. Tartakovskii, "Effect of a GaAsP Shell on the Optical Properties of Self-Catalyzed GaAs Nanowires Grown on Silicon", *NANO LETTERS*, **12**, 5269 (2012);
21. E. A. Chekhovich, K. V. Kavokin, J. Puebla, A. B. Krysa, M. Hopkinson, A. D. Andreev, A. M. Sanchez, R. Beanland, M. S. Skolnick, A. I. Tartakovskii, "Structural analysis of strained quantum dots using nuclear magnetic resonance", *NATURE NANOTECHNOLOGY*, **7**, 646 (2012);
22. I. J. Luxmoore, E. D. Ahmadi, B. J. Luxmoore, N. A. Wasley, A. I. Tartakovskii, M. Hugues, M. S. Skolnick, A. M. Fox, "Restoring mode degeneracy in H1 photonic crystal cavities by uniaxial strain tuning", *APPLIED PHYSICS LETTERS*, **100**, 121116 (2012);
23. O. Makarovskiy, E. E. Vdovin, A. Patane, L. Eaves, M. N. Makhonin, A. I. Tartakovskii, M. Hopkinson, "Laser Location and Manipulation of a Single Quantum Tunneling Channel in an InAs Quantum Dot", *PHYSICAL REVIEW LETTERS*, **108**, 117402 (2012);
24. M. N. Makhonin, K. V. Kavokin, P. Senellart, A. Lemaître, A. J. Ramsay, M. S. Skolnick, A. I. Tartakovskii, "Fast control of nuclear spin polarization in an optically pumped single quantum dot", *NATURE MATERIALS* **10**, 844 (2011);
25. O. D. D. Couto, Jr., J. Puebla, E. A. Chekhovich, I. J. Luxmoore, C. J. Elliott, N. Babazadeh, M. S. Skolnick, A. I. Tartakovskii, and A. B. Krysa, "Charge control in InP/(Ga,In)P single quantum dots embedded in Schottky diodes", *PHYSICAL REVIEW B* **84**, 125301 (2011);
26. E. A. Chekhovich, A. B. Krysa, M. S. Skolnick, A. I. Tartakovskii, "Light-polarization-independent nuclear spin alignment in a quantum dot", *PHYSICAL REVIEW B* **83**, 125318 (2011);
27. E. A. Chekhovich, A. B. Krysa, M. S. Skolnick, and A. I. Tartakovskii, "Direct Measurement of the Hole-Nuclear Spin Interaction in Single InP/GaInP Quantum Dots Using Photoluminescence Spectroscopy", *PHYSICAL REVIEW LETTERS* **106**, 027402 (2011);
28. Ł. Kłopotowski, V. Voliotis, A. Kudelski, A. I. Tartakovskii, P. Wojnar, K. Fronc, R. Grousson, O.

- Krebs, M. S. Skolnick, G. Karczewski, and T. Wojtowicz, "Stark spectroscopy and radiative lifetimes in single self-assembled CdTe quantum dots", *PHYSICAL REVIEW B* **83**, 155319 (2011);
29. I. J. Luxmoore, E. D. Ahmadi, N. A. Wasley, A. M. Fox, A. I. Tartakovskii, A. B. Krysa, M. S. Skolnick, "Control of spontaneous emission from InP single quantum dots in GaInP photonic crystal nanocavities", *APPLIED PHYSICS LETTERS* **97**, 181104 (2010);
 30. M. N. Makhonin, E. A. Chekhovich, P. Senellart, A. Lemaître, M. S. Skolnick, A. I. Tartakovskii, "Optically tunable nuclear magnetic resonance in a single quantum dot", *PHYSICAL REVIEW B* **82**, 161309(R) (2010);
 31. E. A. Chekhovich, M. N. Makhonin, J. Skiba-Szymanska, A. B. Krysa, V. D. Kulakovskii, M. S. Skolnick, A. I. Tartakovskii, "Dynamics of optically induced nuclear spin polarization in individual InP/GaInP quantum dots", *PHYSICAL REVIEW B* **81**, 245308 (2010);
 32. E. A. Chekhovich, M. N. Makhonin, K.V. Kavokin, A. B. Krysa, M. S. Skolnick, A. I. Tartakovskii, "Pumping of Nuclear Spins by Optical Excitation of Spin-Forbidden Transitions in a Quantum Dot", *PHYSICAL REVIEW LETTERS* **104**, 066804 (2010);
 33. A Berthelot, G Cassabois, C Voisin, C Delalande, R Ferreira, P Roussignol, J Skiba-Szymanska, R Kolodka, A I Tartakovskii, M Hopkinson, M S Skolnick, "Voltage-controlled motional narrowing in a semiconductor quantum dot", *NEW JOURNAL OF PHYSICS* **11**, 093032 (2009);
 34. A. E. Nikolaenko, E. A. Chekhovich, M. N. Makhonin, I. W. Drouzas, A. B. Van'kov, J. Skiba-Szymanska, M. S. Skolnick, P. Senellart, D. Martrou, A. Lemaître, A. I. Tartakovskii, "Suppression of nuclear spin diffusion at a GaAs/AlGaAs interface measured with a single quantum-dot nanoprobe", *PHYSICAL REVIEW B* **79**, 081303 (2009);
 35. M. N. Makhonin, J. Skiba-Szymanska, M. S. Skolnick, H.-Y. Liu, M. Hopkinson, A. I. Tartakovskii, "Voltage-controlled nuclear polarization switching in a single InGaAs quantum dot", *PHYSICAL REVIEW B* **79**, 125318 (2009);
 36. M. N. Makhonin, A. I. Tartakovskii, A. Ebbens, M. S. Skolnick, A. Russell, V. I. Fal'ko, and M. Hopkinson, "Nuclear spin pumping under resonant optical excitation in a quantum dot", *APPLIED PHYSICS LETTERS* **93**, 073113 (2008);
 37. J. Skiba-Szymanska, E. A. Chekhovich, A. E. Nikolaenko, A. I. Tartakovskii, M. N. Makhonin, I. Drouzas, M. S. Skolnick, A. B. Krysa, "Overhauser effect in individual InP/GaInP dots", *PHYSICAL REVIEW B* **77**, 165338 (2008)
 38. M. N. Makhonin, A. I. Tartakovskii, A. B. Van'kov, I. Drouzas, T. Wright, J. Skiba-Szymanska, A. Russell, V. I. Fal'ko, M. S. Skolnick, H.-Y. Liu, M. Hopkinson, "Long nuclear spin polarization decay times controlled by optical pumping in individual quantum dots", *PHYSICAL REVIEW B* **77**, 125307 (2008)
 39. A. Russell, Vladimir I. Fal'ko, A. I. Tartakovskii, M. S. Skolnick, "Bistability of optically induced nuclear spin orientation in quantum dots", *PHYSICAL REVIEW B* **76**, 195310 (2007)
 40. A. I. Tartakovskii, T. Wright, A. Russell, V. I. Fal'ko, A. B. Van'kov, J. Skiba-Szymanska, I. Drouzas, R. S. Kolodka, M. S. Skolnick, P. W. Fry, A. Tahraoui, H.-Y. Liu, M. Hopkinson, "Nuclear Spin Switch in Semiconductor Quantum Dots", *PHYSICAL REVIEW LETTERS* **98**, 026806 (2007)
 41. A. I. Tartakovskii, R. S. Kolodka, H. Y. Liu, M. A. Migliorato, M. Hopkinson, M. N. Makhonin, D. J. Mowbray, M. S. Skolnick, "Exciton fine structure splitting in dot-in-a-well structures", *APPLIED PHYSICS LETTERS* **88**, 131115 (2006)
 42. D. O. Kundys, P. Murzyn, J.-P. R. Wells, A. I. Tartakovskii, M. S. Skolnick, Le Si Dang, E. V. Lutsenko, N. P. Tarasuk, O. G. Lyublinskaya, A. A. Toropov, S. V. Ivanov, "The dynamics of amplified spontaneous emission in CdSe/ZnSe quantum dots", *JOURNAL OF APPLIED PHYSICS* **100**, 123510 (2006)
 43. A. V. Savelyev, A. I. Tartakovskii, M. S. Skolnick, D. J. Mowbray, M. V. Maximov, V. M. Ustinov, R. P. Seisyan, "Charging and spin-polarization effects in InAs quantum dots under

- bipolar carrier injection", APPLIED PHYSICS LETTERS 88, 111104 (2006)
44. J. C. Lin, P. W. Fry, R. A. Hogg, M. Hopkinson, I. M. Ross, A.G. Cullis, R. S. Kolodka, A. I. Tartakovskii, M. S. Skolnick, "The control of size and areal density of InAs self-assembled quantum dots in selective area molecular beam epitaxy on GaAs (001) surface", MICROELECTRONICS JOURNAL 37, 1505 (2006)
 45. J. C. Lin, R. Hogg, P. Fry, M. Hopkinson, I. Ross, A. Cullis, R. Kolodka, A. I. Tartakovskii, M. S. Skolnick, "Effect of GaAs polycrystal on the size and areal density of InAs quantum dots in selective area molecular beam epitaxy", JOURNAL OF CRYSTAL GROWTH 297, 38 (2006)
 46. R. J. Young, R. M. Stevenson, A. J. Shields, P. Atkinson, K. Cooper, D. A. Ritchie, K. M. Groom, A. I. Tartakovskii, M. S. Skolnick, "Inversion of exciton level splitting in quantum dots", PHYSICAL REVIEW B 72, 113305 (2005)
 47. A. Ebbens, D. N. Krizhanovskii, A. I. Tartakovskii, F. Pulizzi, T. Wright, A. V. Savelyev, M. S. Skolnick, M. Hopkinson, "Optical orientation and control of spin memory in individual InGaAs quantum dots", PHYSICAL REVIEW B 72, 073307 (2005)
 48. D. N. Krizhanovskii, A. Ebbens, A. I. Tartakovskii, F. Pulizzi, T. Wright, M. S. Skolnick, M. Hopkinson, "Individual neutral and charged $\text{In}_x\text{Ga}_{1-x}\text{As}$ -GaAs quantum dots with strong in-plane optical anisotropy", PHYSICAL REVIEW B 72, 161312 (2005)
 49. D. N. Krizhanovskii, M. N. Makhonin, A. I. Tartakovskii, V. D. Kulakovskii, "Energy relaxation of excitonlike polaritons in semiconductor microcavities: Effect on the parametric scattering of polaritons", JOURNAL OF EXPERIMENTAL AND THEORETICAL PHYSICS 100, 126 (2005)
 50. S. I. Rybchenko, I. E. Itskevich, M. S. Skolnick, J. Cahill, A. I. Tartakovskii, G. Hill, M. Hopkinson, "Tuning of electronic coupling between self-assembled quantum dots", APPLIED PHYSICS LETTERS 87, 033104 (2005)
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