

## Recent publications:

### 2017

1. N. K. Emani, E. Khaidarov, R. Paniagua-Domínguez, Y. H. Fu, V. Valuckas, S. Lu, X. Zhang, S. T. Tan, H. V. Demir, A. I. Kuznetsov, High-efficiency and low-loss Gallium Nitride dielectric metasurfaces for nanophotonics at visible wavelengths. [\*Appl. Phys. Lett.\* \*\*111\*\*, 221101 \(2017\).](#)
2. Z. Dong, J. Ho, Y. F. Yu, Y. H. Fu, R. Paniagua-Dominguez, S. Wang, A. I. Kuznetsov, J. K. W. Yang, Printing beyond sRGB color gamut by mimicking silicon nanostructures in free-space. [\*Nano Letters\* \(2017\), DOI: 10.1021/acs.nanolett.7b03613.](#)
3. Ramon Paniagua-Dominguez, Y. F. Yu, Egor Khaidarov, R. M. Bakker, X. Liang, Y. H. Fu and A. I. Kuznetsov, "A Metalens with Near-Unity Numerical Aperture", [\*arXiv: 1705.00895\* \(2017\).](#)
4. E. Khaidarov, H. Hao, R. Paniagua-Dominguez, Y. F. Yu, Y. H. Fu, V. Valuckas, L. Koon, S. Yap, Y. Teck Toh, S. Kit, J. Ng and A. I. Kuznetsov, "Asymmetric nanoantennas for ultra-high angle broadband visible light bending", [\*Nano Lett.\* \*\*17\*\*, 6267-6272 \(2017\).](#)
5. V. Flauraud, M. Reyes, R. Paniagua-Domínguez, A. I. Kuznetsov and J. Brugger, "Silicon nanostructures for bright field full color prints", [\*ACS Photonics\* \*\*4\*\*, 1913-1919 \(2017\).](#)
6. B. Luk'yanchuk, R. Paniagua-Domínguez, A. I. Kuznetsov, A. E. Miroshnichenko and Y. S. Kivshar, "Hybrid anapole modes of high-index dielectric nanoparticles", [\*Phys. Rev. A\* \*\*95\*\*, 063820 \(2017\).](#)
7. R. M. Bakker, Y. F. Yu, R. Paniagua-Domínguez, B. Luk'yanchuk and A. I. Kuznetsov, "Resonant Light Guiding Along a Chain of Silicon Nanoparticles", [\*Nano Lett.\* \*\*17\*\*, 3458-3464 \(2017\).](#)
8. B. Luk'yanchuk, R. Paniagua-Domínguez, A. I. Kuznetsov, A. E. Miroshnichenko and Y. S. Kivshar, "Suppression of scattering for small dielectric particles: anapole mode and invisibility", [\*Phil. Trans. R. Soc. A\* \*\*375\*\*, 20160069 \(2017\).](#)
9. V. Valuckas, R. Paniagua-Domínguez, Y. H. Fu, B. Luk'yanchuk and A. I. Kuznetsov, "Direct observation of resonance scattering patterns in single silicon nanoparticles", [\*Appl. Phys. Lett.\* \*\*110\*\*, 091108 \(2017\).](#)
10. D. A. Kalashnikov, E. V. Melik-Gaykazyan, A. A. Kalachev, Y. F. Yu, A. I. Kuznetsov and Leonid A Krivitsky, "Quantum interference in the presence of a resonant medium", [\*Scientific Reports\* \*\*7\*\*, 11444 \(2017\).](#)
11. A. Y. Zhu, A. I. Kuznetsov, B. Luk'yanchuk, N. Engheta and P. Genevet, "Traditional and emerging materials for optical metasurfaces", [\*Nanophotonics\* \*\*6\*\*, 452-471 \(2017\).](#)

### 2016

12. A. I. Kuznetsov, A. E. Miroshnichenko, M. L. Brongersma, Y. S. Kivshar and B. Luk'yanchuk, "Optically resonant dielectric nanostructures", [\*Science\* \*\*354\*\*, aag2472 \(2016\).](#)
13. I. Sinev, I. Iorsh, A. Bogdanov, D. Permyakov, F. Komissarenko, I. Mukhin, A. Samusev, V. Valuckas, A. I. Kuznetsov, B. S. Luk'yanchuk, A. E. Miroshnichenko and Y. S. Kivshar, "Polarization control over electric and magnetic dipole resonances of dielectric nanoparticles on metallic films", [\*Laser & Photon. Rev.\* \*\*10\*\*, 799-806 \(2016\).](#)
14. A. P. Slobozhanyuk, A. N. Poddubny, I. S. Sinev, A. K. Samusev, Y. F. Yu, A. I. Kuznetsov, A. E. Miroshnichenko and Y. S. Kivshar, "Enhanced photonic spin Hall effect with subwavelength topological edge states", [\*Laser & Photon. Rev.\* \*\*10\*\*, 656-664 \(2016\).](#)

15. R. Paniagua-Domínguez, Y. F. Yu, A. E. Miroshnichenko, L. A. Krivitsky, Y. H. Fu, V. Valuckas, L. Gonzaga, Y. Teck Toh, A. Y. S. Kay, B. Luk'yanchuk and A. I. Kuznetsov, "Generalized Brewster effect in dielectric metasurfaces", [\*Nature Commun.\* \*\*7\*\*, 10362 \(2016\)](#).

## 2015

16. A. E. Miroshnichenko, A. B. Evlyukhin, Y. F. Yu, R. M. Bakker, A. Chipouline, A. I. Kuznetsov, B. Luk'yanchuk, B. N. Chichkov and Y. S. Kivshar, "Nonradiating anapole modes in dielectric nanoparticles", [\*Nature Commun.\* \*\*6\*\*, 8069 \(2015\)](#).
17. Y. F. Yu, A. Y. Zhu, R. Paniagua-Domínguez, Y. H. Fu, B. Luk'yanchuk and A. I. Kuznetsov, "High-transmission dielectric metasurface with  $2\pi$  phase control at visible wavelengths", [\*Laser & Photon. Rev.\* \*\*9\*\*, 412-418 \(2015\)](#).
18. D. Permyakov, I. Sinev, D. Markovich, P. Ginzburg, A. Samusev, P. Belov, V. Valuckas, A. I. Kuznetsov, B. S. Luk'yanchuk, A. E. Miroshnichenko, D. N. Neshev, and Yu. S. Kivshar, "Probing magnetic and electric optical responses of silicon nanoparticles", [\*Appl. Phys. Lett.\* \*\*106\*\*, 171110 \(2015\)](#).
19. R. M. Bakker, D. Permyakov, Y. F. Yu, D. Markovich, R. Paniagua-Domínguez, L. Gonzaga, A. Samusev, Y. Kivshar, B. Luk'yanchuk, A. I. Kuznetsov, "Magnetic and Electric Hotspots with Silicon Nanodimers", [\*Nano Letters\* \*\*15\*\*, 2137-2142 \(2015\)](#).
20. B. S. Luk'yanchuk, N. V. Voshchinnikov, R. Paniagua-Dominguez, and A. I. Kuznetsov, "Optimum Forward Light Scattering by Spherical and Spheroidal Dielectric Nanoparticles with High Refractive Index", [\*ACS Photonics\* \*\*2\*\*, 993-999 \(2015\)](#).

## 2014

21. D. A. Kalashnikov, Zhenying Pan, A. I. Kuznetsov, Leonid A. Krivitsky, "Quantum spectroscopy of plasmonic nanostructures", [\*Phys Rev X\* \*\*4\*\*, 011049 \(2014\)](#).
22. A. I. Kuznetsov, A. E. Miroshnichenko, Y. H. Fu, Vignesh Viswanathan, Mohsen Rahmani, V. Valuckas, Zhen Ying Pan, Y. Kivshar, Daniel Pickard, and B. Luk'yanchuk, "Split-ball resonator as a three-dimensional analogue of planar split-rings", [\*Nature Commun.\* \*\*5\*\*, 3104 \(2014\)](#).
23. B. S. Luk'yanchuk, Z. B. Wang, A. E. Miroshnichenko, Yu. S. Kivshar, A. I. Kuznetsov, D. L. Gao, Lei Gao, and C.-W. Qiu, "Nano-Fano resonances and topological optics" Chapter 9 in "Singular and Chiral Nanoplasmonics", Ed. by S. V. B.kina and N. I. Zheludev, [\*Pan Stanford Publishing\* \(2014\)](#).
24. Alexandr E. Krasnok, Pavel A. Belov, A. E. Miroshnichenko, A. I. Kuznetsov, B. S. Luk'yanchuk, Y. S. Kivshar, "All-dielectric optical nanoantennas", [\*In Tech book\* \(2014\)](#), DOI: 10.5772/53481.
25. M. Rahmani, A. E. Miroshnichenko, D. Y. Lei, B. Luk'yanchuk, M. I. Tribelsky, A. I. Kuznetsov, Y. S. Kivshar, Y. Francescato, V. Giannini, M. Hong, and S. A. Maier, "Beyond the Hybridization Effects in Plasmonic Nanoclusters: Diffraction-Induced Enhanced Absorption and Scattering", [\*Small\* \*\*10\*\*, 576-583 \(2014\)](#).

## 2013

26. Y. Zhou, X.Y. Chen, Y.H. Fu, G. Vienne, A.I. Kuznetsov, B. Lukiyanchuk, "Fabrication of large-area 3D optical fishnet metamaterial by laser interference lithography", [\*Appl. Phys. Lett.\* \*\*103\*\* \(2013\), 123116](#).
27. Y. H. Fu, A. I. Kuznetsov, A. E. Miroshnichenko, Y. F. Yu, B. Luk'yanchuk, "Directional visible light scattering by silicon nanoparticles", [\*Nature Commun.\* \*\*4\*\* \(2013\), 1527](#).

## 2012

28. A. E. Miroshnichenko, W. Liu, D. Neshev, Yu. S. Kivshar, A. I. Kuznetsov, Y. H. Fu, B. Luk'yanchuk, "Magnetic Light: Optical Magnetism of Dielectric Nanoparticles", [\*Opt. Photon. News\* 23 \(2012\), 35-35.](#)
29. A. I. Kuznetsov, A. E. Miroshnichenko, Y. H. Fu, J.B. Zhang, B. Luk'yanchuk, "Magnetic Light", [\*Sci. Rep.\* 2 \(2012\), 492.](#)
30. Miroshnichenko, A. E., Luk'yanchuk, B., Maier, S. A. & Kivshar, Y. S. "Optically Induced Interaction of Magnetic Moments in Hybrid Metamaterials", [\*ACS Nano\* 6, \(2012\) 837.](#)
31. Fu Y.H., Zhang J.B., Yu Y.F., Luk'yanchuk B. "Generating and Manipulating Higher Order Fano Resonances in Dual-Disk Ring Plasmonic Nanostructures", [\*ACS Nano\* 6, \(2012\) 5130.](#)

## Recent highlights:

1. "Better, bolder printing with silicon nanostructures", **ACS News Release (Nov. 2017)**  
<https://www.acs.org/content/acs/en/pressroom/newsreleases/2017/november/better-bolder-printing-with-silicon-nanostructures.html>  
(see also the highlight in [Phys.org](#), [Science Daily](#), [AZoNano](#), [Science Newslines](#), etc.)
2. "Invisibility is within sight", **A\*STAR Research (Sept. 2017)**  
<https://www.research.a-star.edu.sg/research/7764/invisibility-is-within-sight>  
(see also the highlight in [ScienceNews](#))
3. "Bright Field Nanoscale Color Printing Using Silicon Nanostructures", **AZoNano (Jul. 2017)**  
<https://www.azonano.com/news.aspx?newsID=35691>
4. "A revolution in light at the small scale", **A\*STAR Research (Apr. 2017)**  
<https://www.research.a-star.edu.sg/feature-and-innovation/7629/a-revolution-in-light-at-the-small-scale>  
(see also the highlight in [Phys.org](#))
5. "Nanodisks drive a polarizing transformation", **A\*STAR Research (Jul. 2016)**  
<https://www.research.a-star.edu.sg/research/7543/nanodisks-drive-a-polarizing-transformation>  
(see also the highlights in [ScienceDaily](#))
6. "Technique enables newfound control of light polarization at any angle", **Phys.org (Jul. 2016)**  
<https://phys.org/news/2016-07-technique-enables-newfound-polarization-angle.html>
7. "Bending light with silicon nanoparticles", **Asia Research News (Mar. 2016)**  
[http://www.researchsea.com/html/article.php/aid/9492/cid/2/research/technology/researchsea/bending\\_light\\_with\\_silicon\\_nanoparticles\\_.html](http://www.researchsea.com/html/article.php/aid/9492/cid/2/research/technology/researchsea/bending_light_with_silicon_nanoparticles_.html)
8. "Exciting silicon nanoparticles", **A\*STAR Research (Jan. 2016)**  
<http://www.research.a-star.edu.sg/research/7437/exciting-silicon-nanop>  
(see also the highlights in [Phys.org](#) and [ScienceDaily](#))
9. "A shift in the right direction", **A\*STAR Research (Jan. 2016)**

- <https://www.research.a-star.edu.sg/research/7439/a-shift-in-the-right-direction>  
(see also the highlights in [Phys.org](#), [NanoWerk](#) and [ScienceDaily](#))
10. “Steering the flow of light”, **A\*STAR Research (Dec. 2015)**  
<http://www.research.a-star.edu.sg/research/7417/steering-the-flow-of-light>
  11. “‘Radiationless’ Excitation Can Make Objects”, **Asian Scientist (Sep. 2015)**  
<http://www.asianscientist.com/2015/09/in-the-lab/radiationless-excitation-objects-invisible>  
(see also the highlights in [NextBigFuture](#), [Phys.org](#) and [The Sydney Morning Herald](#))
  12. “View from... SPP7: A colourful future?”, **Nature Photonics** 9, 487- 488 (2015)  
<http://www.nature.com/nphoton/journal/v9/n8/full/nphoton.2015.136.html>
  13. “Making magnetic hot spots”, **A\*STAR Research (Apr. 2015)**  
<https://www.research.a-star.edu.sg/research/7254/making-magnetic-hot-spots>  
(see also the highlights in [NanoWerk](#))
  14. “Overcoming noise with light work”, **A\*STAR Research (Sept.2014)**  
<https://www.research.a-star.edu.sg/research/7036/overcoming-noise-with-light-work>  
(see also the highlights in [Phys.org](#), [NanoWerk](#) and [ScienceDaily](#))
  15. “A modern twist on Young’s slits”, **A\*STAR Research (Apr.2014)**  
<https://www.research.a-star.edu.sg/research/6952/a-modern-twist-on-young-s-slits>  
(see also the highlights in [Phys.org](#), [NanoWerk](#), [ScienceDaily](#) and [MaterialsViews](#))
  16. “Array of perfect nanometer-scale spheres that can control the flow of visible light may find use in invisibility cloaks”, **Phys.org (Jan 2014)**, link: <http://phys.org/news/2014-01-array-nanometer-scale-spheres-visible-invisibility.html>
  17. “An artificial material with depth”, **A\*STAR research highlight (Jan. 2014)**, link: <http://www.research.a-star.edu.sg/research/6905>
  18. “Nano-Optics: Integrated Optical Circuits Coming Soon?” **Science Daily (Sep. 2013)**, link: <http://www.sciencedaily.com/releases/2013/09/130911125311.htm>
  19. “Light moves in the right direction”, **A\*STAR research highlight (Sep. 2013)**, link: <http://www.research.a-star.edu.sg/research/6743>
  20. “Scattered in one direction”, **Nature Nanotechnology** 8, 227 (Apr. 2013), link: <http://www.nature.com/nnano/reshigh/2013/0413/full/nnano.2013.59.html>
  21. “Optical materials: Light’s magnetism shows its true colors”, **Science Daily (Feb. 2013)**, link: <http://www.sciencedaily.com/releases/2013/02/130227124657.htm>
  22. “Optical materials: Light’s magnetism shows its true colors”, **A\*STAR research highlight (Feb. 2013)**, link: <http://www.research.a-star.edu.sg/research/6633>
  23. “Silicon Nanospheres Could Be Building Blocks of Optical Invisibility Cloaks”, **MIT Technology Review (May 2012)**, link: <http://m.technologyreview.com/blog/arxiv/27838/>