From: OSA Journals

Date sent 12/06/2020 08:12:12 am

Subject: Top Ten of Optica's Most Cited

Print This

View Online | Forward | Share this email:

Author Information | Submit Your Manuscript | Create E-alerts | Follow Us

A Message to Our Authors, Reviewers, Editors, and Readers Re COVID-19

Explore Some of the Most Cited Research Published in *Optica*

Optica, has quickly established itself as a trusted source for some of the most exciting work in optics and photonics. To help you keep up to date on the top research in the field, we have put together a collection of the most cited *Optica* articles published in the last year.*

We hope that you find these articles helpful. If you would like to be notified about new research published in *Optica*, please sign up for our free Table of Contents email alerts.

Optica welcomes your submissions.
Review ***Optica***'s acceptance criteria here.

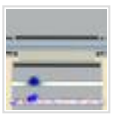
*Source for top-cited articles Clarivate Analytics' Web of Science™

Periodically poled thin-film lithium niobate microring resonators with a second-harmonic generation efficiency of 250,000%/W

Juanjuan Lu, Joshua B. Surya, Xianwen Liu, Alexander W. Bruch, Zheng Gong, Yuntao Xu, and Hong X. Tang

Optica **6**(12) 1455-1460 (2019) **View:** HTML | PDF [Suppl. Mat. (1)]

By poling a high-Q lithium niobate microring resonator on insulator, the authors demonstrate second-harmonic generation with an on-chip efficiency of 250,000 %/W, a state-of-the-art value among current integrated photonics platforms. Such a power-efficient and microscale frequency doubler could enable applications in chip-scale precision frequency metrology, optical clocks, and quantum light sources.



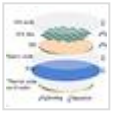
Microwave-to-optical conversion using lithium niobate thin-film acoustic resonators

Linbo Shao, Mengjie Yu, Smarak Maity, Neil Sinclair, Lu Zheng, Cleaven Chia, Amirhassan Shams-Ansari, Cheng Wang, Mian Zhang, Keji Lai, and Marko Lončar

Optica **6**(12) 1498-1505 (2019) **View:** HTML | PDF [Suppl. Mat. (1)]

Conversion of information between microwave and optical domains is a crucial ingredient for classical and quantum signal processing and networking. Taking advantage of strong piezoelectricity and high-quality factor acoustic resonance, the authors demonstrate an

acoustically mediated microwave-to-optical conversion on thin-film lithium niobate with significantly improved conversion efficiency.

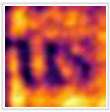


Narrow-linewidth III-V/Si/Si_3N_4 laser using multilayer heterogeneous integration

Chao Xiang, Warren Jin, Joel Guo, Jonathan D. Peters, M. J. Kennedy, Jennifer Selvidge, Paul A. Morton, and John E. Bowers

Optica **7**(1) 20-21 (2020) **View:** HTML | PDF

Silicon nitride is a dielectric material that is important for optical clocks and optical sensors. The authors integrate silicon nitride into a high-performance laser, potentially enabling a class of integrated photonic devices that do not require external light sources.



Hyperspectral terahertz microscopy via nonlinear ghost imaging

Luana Olivieri, Juan S. Totero Gongora, Luke Peters, Vittorio Cecconi, Antonio Cutrona, Jacob Tunesi, Robyn Tucker, Alessia Pasquazi, and Marco Peccianti

Optica **7**(2) 186-191 (2020) **View:** HTML | PDF [Suppl. Mat. (1)]

The authors experimentally demonstrate time-resolved nonlinear ghost imaging, a technique based on near-field, optical-to-terahertz nonlinear conversion and detection of illumination patterns. Their approach enables high-fidelity subwavelength imaging and enables reconstruction of hyperspectral images of complex samples inaccessible via standard fixed-time methods.

Ultrabroadband nonlinear optics in nanophotonic periodically poled lithium niobate waveguides

Marc Jankowski, Carsten Langrock, Boris Desiatov, Alireza Marandi, Cheng Wang, Mian Zhang, Christopher R. Phillips, Marko Lončar, and M. M. Fejer

Optica **7**(1) 40-46 (2020) **View:** HTML | PDF [Suppl. Mat. (1)]

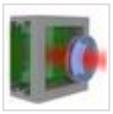
Pulsed interactions in nonlinear devices efficiently generate different frequencies of coherent laser light. Typical devices are limited to short lengths by the different velocities of the interacting waves. The authors report how nanophotonic devices can overcome these limits, and demonstrate efficient interactions with orders of magnitude less energy than conventional devices.

Large-scale optical phased array using a low-power multi-pass silicon photonic platform

Steven A. Miller, You-Chia Chang, Christopher T. Phare, Min Chul Shin, Moshe Zadka, Samantha P. Roberts, Brian Stern, Xingchen Ji, Aseema Mohanty, Oscar A. Jimenez Gordillo, Utsav D. Dave, and Michal Lipson

Optica **7**(1) 3-6 (2020) **View:** HTML | PDF [Suppl. Mat. (1)]

Long-range high-performance optical phased arrays require a large beam emission area, densely packed with thousands of actively phase-controlled and power-hungry light-emitting elements. The authors demonstrate a multipass photonic platform integrated into a large-scale phased array that lowers phase shifter power consumption by nearly nine times and could enable scalable phased arrays.



Two-dimensional topological quantum walks in the momentum space of structured light

Alessio D'Errico, Filippo Cardano, Maria Maffei, Alexandre Dauphin, Raouf Barboza, Chiara Esposito, Bruno Piccirillo, Maciej Lewenstein, Pietro Massignan, and Lorenzo Marrucci

Optica **7**(2) 108-114 (2020) **View:** HTML | PDF [Suppl. Mat. (1)]

This article reports the realization of two-dimensional quantum walks in an optical platform based on cascaded patterned geometric-phase elements. The devised evolution constitutes an easily tunable and configurable periodically-driven Chern topological insulator. The authors probe the topology of the underlying band structure in a Quantum Hall type experiment by reading out the quantized anomalous response arising in the direction orthogonal to an applied constant force.

Water window soft x-ray source enabled by a 25 W few-cycle 2.2 μm OPCPA at 100 kHz

J. Pupeikis, P.-A. Chevreuil, N. Bigler, L. Gallmann, C. R. Phillips, and U. Keller

Optica **7**(2) 168-171 (2020) **View:** HTML | PDF

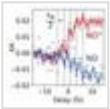
Long-wavelength ultrafast lasers enable coherent soft x-ray generation at photon energies beyond a few hundred electron volts. Extending sensitive attosecond time-domain studies into this spectral region requires production of soft x-ray flashes at high repetition rates, which is limited by long-wavelength laser technology. The authors designed a laser amplification system and a soft x-ray generation target to overcome these limitations and demonstrate a tabletop source producing coherent soft x-ray flashes at a rate of 100,000 shots per second, enabling applications in the physical and biological sciences.

Probing quantum optical excitations with fast electrons

Valerio Di Giulio, Mathieu Kociak, and F. Javier García de Abajo

Optica **6**(12) 1524-1534 (2019) **View:** HTML | PDF [Suppl. Mat. (1)]

Electron beams do not absorb or emit light in free space, but these processes have been demonstrated when a material structure mediates the electron-light interaction. The authors show that the quantum nature of the material as well as the photon population distribution of the light are imprinted on the resulting electron spectra, suggesting a range of experiments capable of reconstructing the dynamics of optical cavities and sampling the light statistics.



Real-time observation of electronic, vibrational, and rotational dynamics in nitric oxide with attosecond soft x-ray pulses at 400 eV

Nariyuki Saito, Hiroki Sannohe, Nobuhisa Ishii, Teruto Kanai, Nobuhiro Kosugi, Yi Wu, Andrew Chew, Seunghwoi Han, Zenghu Chang, and Jiro Itatani

Optica **6**(12) 1542-1546 (2019) **View:** HTML | PDF [Suppl. Mat. (1)]

Using high harmonics in the soft x-ray region, the authors demonstrate attosecond transient absorption spectroscopy at the nitrogen K-edge (400 eV). They observe electronic, vibrational, and rotational dynamics in a molecule simultaneously. Their method can be applied to investigate fundamental photoinduced processes inside various systems, such as biomolecules or in photocatalysis.

The Optical Society (OSA)
2010 Massachusetts Ave., N.W.
Washington, D.C. 20036 USA
www.osa.org
+1 202.223.8130