1918

Highland Room A

FiO

5E • Symposium on Integrated ıantum Photonics II—Continued

5E.3 • 17:00 Invited
ıantum Nanophotonics: From Inverse ·sign to Implementations, Jelena Vuckovic[1], nstantinos Lagoudakis[1]; [1]*Stanford Univ., A.* By exploring the full parameter space nanophotonics design, one can implement ɹctures for studies of new regimes in quantum d nonlinear optics, and for new applications communications, computing, and sensing.

Highland Room B

FF5F • Hybrid Integration—Continued

FF5F.3 • 16:45
Demonstration of Self-Aligned Flip-Chip Photonic Assembly with 1.1dB Loss and >120nm Bandwidth, Tymon Barwicz[1], Yves Martin[1], Jae-Woong Nah[1], Swetha Kamlapurkar[1], Robert L. Bruce[1], Sebastian Engelmann[1], Yurii A. Vlasov[1]; [1]*IBM TJ Watson Research Center, USA.* We demonstrate direct flip-chip assembly of photonic dies with solder-induced self-alignment to sub-micron accuracy. We find a peak chip-to-chip transmission of -1.1 dB with 0.2 dB penalty over the 120 nm spectrum measured.

FF5F.4 • 17:00 Invited
III-V-on-silicon Photonic Integrated Circuits for Optical Communication and Sensing, Gunther Roelkens[1]; [1]*Universiteit Gent, Belgium.* The integration of III-V sources, high-speed germanium optical modulators and photodetectors on silicon waveguide circuits, and the co-integration with electronic integrated circuits will be discussed in this paper.

Highland Room C

FF5G • Beams and Optical Coherence—Continued

FF5G.3 • 16:45
Beam shaping under extreme focusing conditions: Generalization of the Richards-Wolf formalism, Denis Panneton[1], Guillaume St-Onge[1], Michel Piché[1], Simon Thibault[1]; [1]*Universite Laval, Canada.* We rigorously model nonparaxial focusing of electromagnetic beams by arbitrary axisymmetric surfaces such as spheres, ellipses and hyperbolae. We consider light's diffraction and polarization properties.

FF5G.4 • 17:00
Evolution of coherence singularities of beams associated with structurally stable Gaussian modes, Tatiana Alieva[1], Eugeny Abramochkin[2], Jose A. Rodrigo[1]; [1]*Universidad Complutense de Madrid, Spain;* [2]*Lebedev Physical Inst., Russian Federation.* The propagation of partially coherent Schell model beams associated with structurally stable Gaussian modes is studied using ambiguity function. This allows deriving a simple expression for the cross-correlation function in near and far field.

FF5G.5 • 17:15
Multiple Wavelength Concentric Vortex Optics: λ = 1064 nm and 2090 nm, Wenzhe Li[1], Yuan Li[1], Keith Miller[1], Eric G. Johnson[1]; [1]*Clemson Univ., USA.* Using a single concentric vortex optic to generate vortices with multiplexed 1064 nm and 2090 nm laser sources is studied and experimentally confirmed. The rotation of the resulting diffracted patterns is also explored.

Highland Room D

FF5H • Exotic States and Applications II—Continued

FF5H.4 • 16:45
Dispersion Engineering in Whispering Gallery Mode Microbubble Resonators, Nicolas N. Riesen[1,2], Wen Qi Zhang[2], Tanya M. Monro[2,1]; [1]*Inst. for Photonics and Advanced Sensing (IPAS), Univ. of Adelaide, Australia;* [2]*Univ. of South Australia, Australia.* The opportunities for engineering dispersion in whispering gallery microbubbles are explored. Using certain materials it is shown that dispersion equalization can be realized at interesting wavelengths such as deep within the visible or mid-infrared.

FF5H.5 • 17:00
Vortex beam characterization in terms of Hypergeometric-Gaussian modes, Bereneice C. Sephton[1,2], Angela Dudley[1,2], Andrew Forbes[2]; [1]*CSIR National Laser Centre, South Africa;* [2]*Physics, Univ. of Witwatersrand, South Africa.* Q-plates are commonly used for uncomplicated generation of polarization controlled vortex beams. Here we show experimentally that the output is not a pure vortex but rather a Hypergeometric-Gaussian mode. Results are in good agreement with theory.

FF5H.6 • 17:15
A Simple Hubbard Model for the Excited States of π Conjugated -acene Molecules, Zaheen S. Sadeq[1], John E. Sipe[1]; [1]*Physics, Univ. of Toronto, Canada.* We investigate the excited states of tetracene, pentacene, and hexacene using a truncated Hubbard model; our technique yields reasonable energies and oscillator strengths. We show that the lowest doubly excited state acts like two triplets.

Highland Room E

LS

LF5I • Topological Photonics II—Continued

LF5I.3 • 17:00 Invited
New Ideas on Photonic Topological Insulators, Miguel Bandres[1], Gal Harari[1], Yaakov Lumer[1], Eran Lustig[1], Yonatan Plotnik[1], Moshe-Ishay Cohen[1], Rivka Bekenstein[1], Mordechai Segev[1]; [1]*Technion Israel Inst. of Technology, Israel.* Recent progress on photonic topological insulators will be presented, with new ideas ranging from topo lasers and photonic topological quasicrystals to curved-space topo photonics and effects of disorder on photonic topological phenomena.

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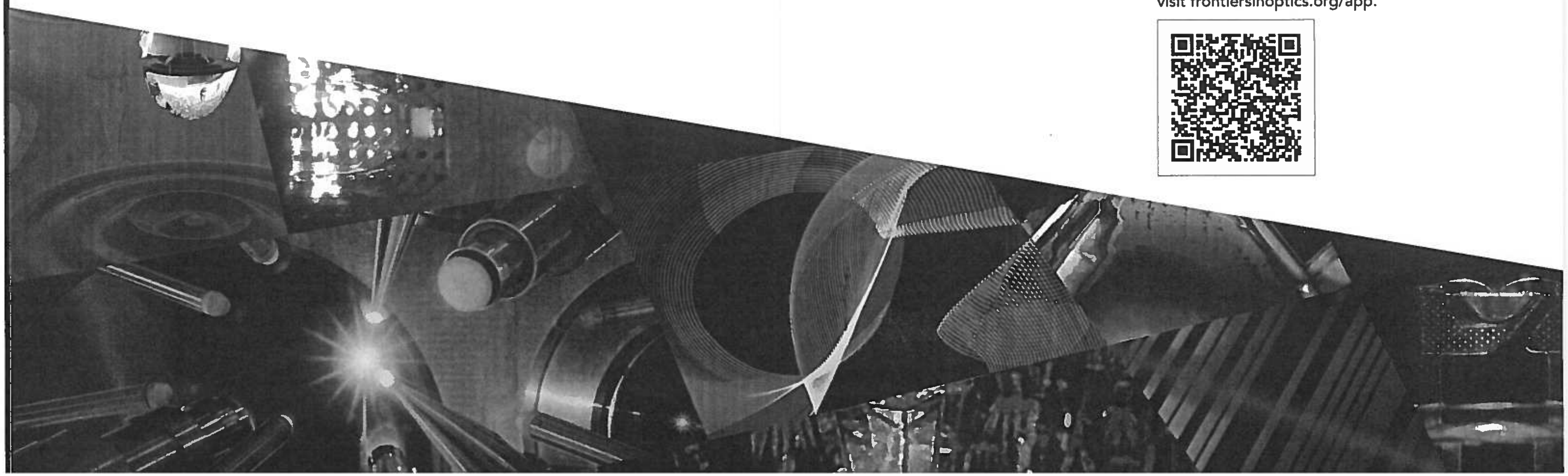

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