

CHAORAN HUANG

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RESEARCH INTEREST

I am broadly interested in optoelectronic materials, devices, and systems. My current research draws on techniques from different fields, e.g., silicon photonics and nanophotonics, material engineering, and electronics, serving applications in computing and intelligent information processing.

ACADEMIC APPOINTMENTS

The Chinese University of Hong Kong, Electronic Engineering *April 2021 - Present*
Assistant Professor

Princeton University, Lightwave Communications Research Lab *September 2017 - April 2021*
Postdoctoral Research Associate

EDUCATION

The Chinese University of Hong Kong *August 2012 - August 2016*
Ph.D in Electronic Engineering

Huazhong University of Science & Technology *September 2008 - June 2012*
B.E. *with distinction* in Optoelectronic Engineering

AWARDS & HONORS

- Optica Foundation 20th Anniversary Challenge Award, 2022
- The Rising Stars Women in Engineering, Asian Dean's Forum, 2019
- Corning Women in Optical Fiber Communications Travel Grant, the Optical Society (OSA), 2019
- Postdoctoral Research Fellowship, the Chinese University of Hong Kong, 2016
- The Outstanding Paper Award for Young Engineers/Researchers (finalist), The Hong Kong Institution of Engineers, 2015
- Postgraduate Studentship, the Chinese University of Hong Kong, 2012-2016
- China National Scholarship, China, 2012

INVITED TALKS, SEMINARS AND GUEST LECTURES

- "Neuromorphic Photonics for Intelligent Signal Processing and Beyond", Asia Communications and Photonics Conference (ACP), Shenzhen, China, 2022
- "Photonic Neural Networks for WDM Optical Communications", European Conference on Optical Communication (ECOC), Basel Switzerland, 2022
- "Photonic Neural Networks for WDM Optical Communications", Optical Fiber Communications Conference and Exhibition (OFC), USA, 2022
- "Intelligent Signal Processing by Neuromorphic Silicon Photonics", 8th International Workshop on Optical/Photonic Interconnects for Computing Systems (OPTICS Workshop), 2022

- “Neuromorphic Photonics and Applications”, Guest Lecture for The Silicon Electronic-Photonic Integrated Circuits (SiEPIC) Program, Active Silicon Photonics Course, 2022
- “Intelligent Signal Processing by Neuromorphic Silicon Photonics”, Photonics & Electromagnetics Research Symposium (PIERS), 2022
- “Intelligent Optical Signal Processing for Optical Communications,” Asia Communications and Photonics Conference (ACP), 2021
- “Silicon Photonic Neural Networks for High-Speed Signal Processing,” Asia Communications and Photonics Conference (ACP), 2021
- “Programmable Optical Nonlinearity for Photonic Neural Networks,”, Photonics in Switching and Computing (PSC), 2021
- “Silicon Photonic Neural Networks for Optical Communication Systems,”, IEEE Optoelectronics Global Conference (OGC), 2021
- “Neuromorphic Photonics for Optical Communication Systems,” Optical Fiber Communications Conference and Exhibition (OFC), USA, 2021
- “Photonic artificial intelligence accelerator and its applications,” University of Georgia, USA, 2021
- “Neuromorphic Photonics for Optical Communication Systems,” International Conferences on Optoelectronic and Microelectronic Technology and Application (OMAT), China, 2021

PROFESSIONAL ACTIVITIES

Editor

- Nature Group, Communications Engineering, editorial board member.
- SPIE The Journal of Photonics for Energy (JPE), guest editor of special issue on “Photonics for neuromorphic and unconventional computing”

Program Committees

- TPC member: European Conference on Optical Communication (ECOC), 2023
- Topic Co-Chair: IEEE Summer Topicals Meeting Series, 2023
- Subcommittee Chair: Photonics in Switching and Computing (PSC) conference 2023
- Subcommittee Chair: Topical Meeting of Integrated Photonics Research (IPR), OSA Advanced Photonics Congress, 2023
- Organization Committee: ACP/IPOC Workshop: What will Photonic Computing be Like in the Future?
- TPC member: Topical Meeting of Integrated Photonics Research (IPR), OSA Advanced Photonics Congress, 2022
- TPC member: IEEE Tencon, 2022
- TPC member: Optoelectronics Global Conference (OGC) 2021
- TPC member: OptoElectronics and Communications Conference (OECC) 2017
- TPC member: Asia Communications and Photonics Conference (APC) 2018

Journal Reviewer

- Nature Publishing group: Nature, Nature Communications, Light: Science & Applications

- Optical Society Publishing: Optica, Optics Express, Optics Letters, Photonics Research, etc.
- IEEE Publishing: Journal of Selected Topics in Quantum Electronics, IEEE Access, IEEE Communications Letters, Photonics Journal, etc.

PUBLICATIONS

Patents

- [P1] C. Huang, T. F. De Lima, A. Tait, S. Abbaslou, A. Jha, B. Shastri, P. R. Prucnal, M. A. Nahmias, and H.-T. Peng, “System and method for programmable nonlinear silicon photonic circuit,” Sep. 9 2021, uS Patent App. 16/775,746

Book Chapter

- [B1] B. A. Marquez, **C. Huang**, P. R. Prucnal, and B. J. Shastri, “Neuromorphic silicon photonics for artificial intelligence,” in *Silicon Photonics IV*. Springer, 2021, pp. 417–447
- [B2] S. Bilodeau, T. Ferreira de Lima, **C. Huang**, P. Y. Ma, B. J. Shastri, and P. R. Prucnal, “Neuromorphic silicon photonics,” in *Silicon Photonics for High-Performance Computing and Beyond*. CRC Press, 2021

Journal Articles

- [J1] W. Zhang, A. Tait, **C. Huang**, T. Ferreira de Lima, S. Bilodeau, E. C. Blow, A. Jha, B. J. Shastri, and P. Prucnal, “Broadband physical layer cognitive radio with an integrated photonic processor for blind source separation,” *Nature Communications*, vol. 14, no. 1, p. 1107, 2023
- [J2] B. Wang, T. F. de Lima, B. J. Shastri, P. R. Prucnal, and **C. Huang**, “Multi-wavelength photonic neuromorphic computing for intra and inter-channel distortion compensations in wdm optical communication systems,” *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 29, no. 2: Optical Computing, pp. 1–12, 2023 (**Invited**)
- [J3] H.-T. Peng, J. C. Lederman, L. Xu, T. F. de Lima, **C. Huang**, B. J. Shastri, D. Rosenbluth, and P. R. Prucnal, “A photonics-inspired compact network: Toward real-time ai processing in communication systems,” *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 28, no. 4: Mach. Learn. in Photon. Commun. and Meas. Syst., pp. 1–17, 2022
- [J4] A. Jha, **C. Huang**, T. F. deLima, H.-T. Peng, B. Shastri, and P. R. Prucnal, “Nanophotonic cavity based synapse for scalable photonic neural networks,” *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 28, no. 6: High Density Integr. Multipurpose Photon. Circ., pp. 1–8, 2022
- [J5] W. Zhang, **C. Huang**, H.-T. Peng, S. Bilodeau, A. Jha, E. Blow, T. F. de Lima, B. J. Shastri, and P. Prucnal, “Silicon microring synapses enable photonic deep learning beyond 9-bit precision,” *Optica*, vol. 9, no. 5, pp. 579–584, 2022
- [J6] **C. Huang**, D. Wang, W. Zhang, B. Wang, A. N. Tait, T. F. de Lima, B. J. Shastri, and P. R. Prucnal, “High-capacity space-division multiplexing communications with silicon photonic blind source separation,” *Journal of Lightwave Technology*, vol. 40, no. 6, pp. 1617–1632, 2022
- [J7] A. Jha, **C. Huang**, H.-T. Peng, B. Shastri, and P. R. Prucnal, “Photonic spiking neural networks and graphene-on-silicon spiking neurons,” *Journal of Lightwave Technology*, vol. 40, no. 9, pp. 2901–2914, 2022

- [J8] H. Zhou, J. Dong, J. Cheng, W. Dong, **C. Huang**, Y. Shen, Q. Zhang, M. Gu, C. Qian, H. Chen, Z. Ruan, and X. Zhang, “Photonic matrix multiplication lights up photonic accelerator and beyond,” *Light: Science & Applications*, vol. 11, no. 1, pp. 1–21, 2022
- [J9] T. F. de Lima, E. A. Doris, S. Bilodeau, W. Zhang, A. Jha, H.-T. Peng, E. C. Blow, C. Huang, A. N. Tait, B. J. Shastri *et al.*, “Design automation of photonic resonator weights,” *Nanophotonics*, 2022
- [J10] **C. Huang**, S. Fujisawa, T. F. de Lima, A. N. Tait, E. Blow, Y. Tian, S. Bilodeau, A. Jha, F. Yaman, Batshon, H.-T. Peng, Y. Inada, B. Shastri, T. Wang, and P. R. Prucnal, “A silicon photonic–electronic neural network for fibre nonlinearity compensation,” *Nature Electronics*, vol. 4, no. 11, pp. 837–844, 2021
- [J11] **C. Huang**, V. J. Sorger, M. Miscuglio, M. Al-Qadasi, A. Mukherjee, L. Lampe, M. Nichols, A. N. Tait, T. Ferreira de Lima, B. A. Marquez, J. Wang, L. Chrostowski, M. P. Fok, D. Brunner, S. Fan, S. Shekhar, P. R. Prucnal, and B. J. Shastri, “Prospects and applications of photonic neural networks,” *Advances in Physics: X*, vol. 7, no. 1, p. 1981155, 2022 [Invited Review]
- [J12] A. Jha, **C. Huang**, H.-T. Peng, B. J. Shastri, and P. Prucnal, “Photonic spiking neural networks and graphene-on-silicon spiking neurons,” *Journal of Lightwave Technology*, pp. 1–1, 2022
- [J13] S. Fujisawa, F. Yaman, H. G. Batshon, M. Tanio, N. Ishii, **C. Huang**, T. F. De Lima, Y. Inada, P. R. Prucnal, N. Kamiya *et al.*, “Weight pruning techniques towards photonic implementation of nonlinear impairment compensation using neural networks,” *Journal of Lightwave Technology*, vol. 40, no. 5, pp. 1273–1282, 2022
- [J14] B. Wu, Y. Tang, C. Qiu, Y. Huang, **C. Huang**, and P. R. Prucnal, “Secure analysis of optical steganography with spectral signature measurement,” *IEEE Photonics Technology Letters*, vol. 33, no. 17, pp. 971–974, 2021
- [J15] M. A. Nahmias, H.-T. Peng, T. F. de Lima, **C. Huang**, A. N. Tait, B. J. Shastri, and P. R. Prucnal, “A laser spiking neuron in a photonic integrated circuit.” (*Nature Photonics in revision*)
- [J16] H.-T. Peng, J. Lederman, L. Xu, T. F. de Lima, **C. Huang**, B. Shastri, D. Rosenbluth, and P. Prucnal, “A photonic-circuits-inspired compact network: Toward real-time wireless signal classification at the edge,” *arXiv preprint arXiv:2106.13865*, 2021
- [J17] P. Y. Ma, A. N. Tait, W. Zhang, E. A. Karahan, T. F. de Lima, **C. Huang**, B. J. Shastri, and P. R. Prucnal, “Blind source separation with integrated photonics and reduced dimensional statistics,” *Optics Letters*, vol. 45, no. 23, pp. 6494–6497, 2020
- [J18] T. F. De Lima, A. N. Tait, A. Mehrabian, M. A. Nahmias, **C. Huang**, H.-T. Peng, B. A. Marquez, M. Miscuglio, T. El-Ghazawi, V. J. Sorger *et al.*, “Primer on silicon neuromorphic photonic processors: architecture and compiler,” *Nanophotonics*, vol. 9, no. 13, pp. 4055–4073, 2020 [Invited]
- [J19] **C. Huang**, A. Jha, T. F. De Lima, A. N. Tait, B. J. Shastri, and P. R. Prucnal, “On-chip programmable nonlinear optical signal processor and its applications,” *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 27, no. 2, pp. 1–11, 2020 [Invited]
- [J20] **C. Huang**, S. Bilodeau, T. Ferreira de Lima, A. N. Tait, P. Y. Ma, E. C. Blow, A. Jha, H.-T. Peng, B. J. Shastri, and P. R. Prucnal, “Demonstration of scalable microring weight bank control for large-scale photonic integrated circuits,” *APL Photonics*, vol. 5, no. 4, p. 040803, 2020

- [J21] A. Jha, **C. Huang**, and P. R. Prucnal, “Reconfigurable all-optical nonlinear activation functions for neuromorphic photonics,” *Optics Letters*, vol. 45, no. 17, pp. 4819–4822, 2020
- [J22] A. Jha, **C. Huang**, T. F. de Lima, and P. R. Prucnal, “High-speed all-optical thresholding via carrier lifetime tunability,” *Optics Letters*, vol. 45, no. 8, pp. 2287–2290, 2020
- [J23] A. Jha, T. F. de Lima, H. Saeidi, S. Bilodeau, A. N. Tait, , **C. Huang**, S. Abbaslou, B. Shastri, and P. R. Prucnal, “Lateral bipolar junction transistor on a silicon photonics platform,” *Optics Express*, vol. 28, no. 8, pp. 11 692–11 704, 2020
- [J24] **C. Huang**, P. Y. Ma, E. C. Blow, P. Mittal, and P. R. Prucnal, “Accelerated secure key distribution based on localized and asymmetric fiber interferometers,” *Optics Express*, vol. 27, no. 22, pp. 32 096–32 110, 2019
- [J25] **C. Huang**, T. F. De Lima, A. Jha, S. Abbaslou, A. N. Tait, B. J. Shastri, and P. R. Prucnal, “Programmable silicon photonic optical thresholder,” *IEEE Photonics Technology Letters*, vol. 31, no. 22, pp. 1834–1837, 2019
- [J26] **C. Huang**, P. Y. Ma, B. J. Shastri, P. Mittal, and P. R. Prucnal, “Robustness of optical steganographic communication under coherent detection attack,” *IEEE Photonics Technology Letters*, vol. 31, no. 4, pp. 327–330, 2019
- [J27] P. Y. Ma, A. N. Tait, T. F. de Lima, **C. Huang**, B. J. Shastri, and P. R. Prucnal, “Photonic independent component analysis using an on-chip microring weight bank,” *Optics Express*, vol. 28, no. 2, pp. 1827–1844, 2020
- [J28] P. Y. Ma, B. J. Shastri, T. F. De Lima, **C. Huang**, A. N. Tait, M. A. Nahmias, H.-T. Peng, and P. R. Prucnal, “Simultaneous excitatory and inhibitory dynamics in an excitable laser,” *Optics Letters*, vol. 43, no. 15, pp. 3802–3805, 2018
- [J29] **C. Huang** and C. Shu, “Raman-enhanced optical phase conjugator in WDM transmission systems,” *Optics Express*, vol. 26, no. 8, pp. 10 274–10 281, 2018
- [J30] J. Liu, X. Wu, **C. Huang**, H. K. Tsang, and C. Shu, “Compensation of dispersion-induced power fading in analog photonic links by gain-transparent SBS,” *IEEE Photonics Technology Letters*, vol. 30, no. 8, pp. 688–691, 2018
- [J31] N. Zhang, J. Liu, **C. Huang**, and C. Shu, “Enhanced performance of wavelength multicasting by gain-transparent stimulated Brillouin scattering,” *IEEE Photonics Technology Letters*, vol. 30, no. 6, pp. 585–588, 2018
- [J32] X. Wu, **C. Huang**, K. Xu, W. Zhou, C. Shu, and H. K. Tsang, “3× 104 Gb/s single-λ interconnect of mode-division multiplexed network with a multicore fiber,” *Journal of Lightwave Technology*, vol. 36, no. 2, pp. 318–324, 2018
- [J33] J. Ru, **C. Huang**, and C. Shu, “Crosstalk mitigation in multichannel optical parametric sampling via Raman amplification,” *IEEE Photonics Technology Letters*, vol. 29, no. 24, pp. 2272–2275, 2017
- [J34] **C. Huang**, N. Zhang, and C. Shu, “SBS-enhanced FWM for polarization division multiplexed signals in coherent communication systems,” *Optics Letters*, vol. 42, no. 21, pp. 4271–4274, 2017
- [J35] J. Liu, **C. Huang**, and C. Shu, “Photonic assisted microwave waveform generation by gain-transparent SBS-induced carrier processing: erratum,” *Optics Letters*, vol. 42, no. 22, pp. 4707–4707, 2017
- [J36] J. Ru, Q. Xie, **C. Huang**, B. Zheng, and C. Shu, “Enhanced performance in serial-to-parallel data conversion via Raman-assisted time lens processing,” *Optics Letters*, vol. 42,

no. 10, pp. 1939–1942, 2017

- [J37] **C. Huang**, N. Zhang, and C. Shu, “High performance wavelength multicast with beat noise suppression via backward Raman amplification in a nonlinear fiber,” *Journal of Lightwave Technology*, vol. 35, no. 13, pp. 2587–2592, 2017
- [J38] X. Wu, **C. Huang**, K. Xu, C. Shu, and H. K. Tsang, “Mode-division multiplexing for silicon photonic network-on-chip,” *Journal of Lightwave Technology*, vol. 35, no. 15, pp. 3223–3228, 2017
- [J39] Q. Zhang, **C. Huang**, B. Zheng, and C. Shu, “Mitigation of nonlinear impairment by coherently superimposing cap sideband signals,” *IEEE Photonics Technology Letters*, vol. 28, no. 23, pp. 2744–2747, 2016
- [J40] **C. Huang** and C. Shu, “Effective suppression of nonlinear distortion in optical phase conjugation of optical ofdm signals using backward Raman pumping,” *HKIE Transactions*, vol. 23, no. 4, pp. 214–221, 2016
- [J41] **C. Huang**, B. Zheng, N. Zhang, and C. Shu, “Brillouin controlled phase matching in optical parametric processing of coherent signals,” *IEEE Photonics Technology Letters*, vol. 28, no. 21, pp. 2347–2350, 2016
- [J42] X. Wu, **C. Huang**, K. Xu, C. Shu, and H. K. Tsang, “128-Gb/s line rate ofdm signal modulation using an integrated silicon microring modulator,” *IEEE Photonics Technology Letters*, vol. 28, no. 19, pp. 2058–2061, 2016
- [J43] **C. Huang**, Y. Wu, X. Guo, M. Li, and C. Shu, “Improving the nonlinear tolerance of fiber-based optical phase conjugation,” *IEEE Photonics Technology Letters*, vol. 27, no. 4, pp. 439–442, 2014
- [J44] **C. Huang**, X. Guo, X. Fu, L. Wang, and C. Shu, “Active control of gain saturation in fiber-optical parametric amplifier using stimulated Brillouin scattering,” *Optics Letters*, vol. 39, no. 19, pp. 5713–5716, 2014
- [J45] L. Wang, **C. Huang**, and C. Shu, “Extended tunable optical delay using gain-transparent stimulated Brillouin scattering control in four-wave-mixing wavelength conversion,” *Applied Optics*, vol. 53, no. 3, pp. 441–446, 2014

* corresponding authors

Conference Proceedings

- [C1] D. Wang, B. Wang, W. Zhang, T. F. de Lima, B. J. Shastri, P. R. Prucnal, and **C. Huang**, “Photonic blind source separation for multimode optical fiber interconnects,” in *2022 Conference on Lasers and Electro-Optics (CLEO)*, 2022, pp. 1–2
- [C2] H.-T. Peng, T. F. de Lima, E. C. Blow, S. Bilodeau, A. Jha, **C. Huang**, B. J. Shastri, and P. R. Prucnal, “Time series prediction and classification using silicon photonic neuron with a self-connection,” in *CLEO: Science and Innovations*. Optica Publishing Group, 2022, pp. SS2B–2
- [C3] A. Jha, **C. Huang**, H.-T. Peng, W. Zhang, B. Shastri, and P. R. Prucnal, “High-speed time series prediction and classification on an all-optical neural network,” in *Optical Fiber Communication Conference*. Optica Publishing Group, 2022, pp. Tu3G–3
- [C4] **C. Huang**, B. J. Shastri, P. R. Prucnal *et al.*, “Silicon photonic neural networks and applications,” in *IEEE Photonics Conference (IPC)*. IEEE, 2021 (**Invited**)

- [C5] **C. Huang**, T. F. de Lima, S. Fujisawa, A. N. Tait, H.-T. Peng, B. J. Shastri, T. Wang, and P. R. Prucnal, “Neuromorphic photonics for optical communication systems,” in *Optical Fiber Communication Conference (OFC) 2021*. Optical Society of America, 2021, p. M5B.1(**Invited**)
- [C6] S. Fujisawa, F. Yaman, H. G. Batshon, M. Tanio, N. Ishii, **C. Huang**, T. F. de Lima, Y. Inada, P. R. Prucnal, N. Kamiya, and T. Wang, “Nonlinear impairment compensation using neural networks,” in *Optical Fiber Communication Conference (OFC) 2021*. Optical Society of America, 2021, p. M5F.1 (**Invited**)
- [C7] J. Aashu, **C. Huang**, and P. R. Prucnal, “Programmable, high-speed all-optical nonlinear activation functions for neuromorphic photonics,” in *Optical Fiber Communication Conference (OFC)*. OSA, 2021
- [C8] P. R. Prucnal, T. F. de Lima, **C. Huang**, B. A. Marquez, and B. J. Shastri, “Neuromorphic photonics: Current status and challenges,” in *2020 European Conference on Optical Communications (ECOC)*. IEEE, 2020, pp. 1–4 (**Invited**)
- [C9] **C. Huang**, S. Fujisawa, T. F. de Lima, A. N. Tait, E. Blow, Y. Tian, S. Bilodeau, A. Jha, F. Yaman, Batshon, H.-T. Peng, Y. Inada, B. Shastri, T. Wang, and P. R. Prucnal, “Demonstration of photonic neural network for fiber nonlinearity compensation in long-haul transmission systems,” in *Optical Fiber Communication Conference*. Optical Society of America, 2020, pp. Th4C–6 (**Postdeadline**)
- [C10] **C. Huang**, S. Bilodeau, T. F. de Lima, A. N. Tait, P. Y. Ma, E. C. Blow, A. Jha, H.-T. Peng, B. J. Shastri, and P. R. Prucnal, “Demonstration of multi-channel feedback control for on-chip microring weight banks,” in *Optical Fiber Communication Conference*. Optical Society of America, 2020, pp. W3A–7
- [C11] A. Jha, **C. Huang**, T. F. de Lima, and P. R. Prucnal, “Programmable fast all-optical thresholder,” in *Conference on Lasers and Electro-Optics (CLEO)*. Optical Society of America, 2020
- [C12] E. C. Blow, **C. Huang**, Z. Liu, S. J. Markoff, and P. R. Prucnal, “Silicon photonic weights for microwave photonic canceller,” in *Conference on Lasers and Electro-Optics (CLEO)*. Optical Society of America, 2020
- [C13] B. Shastri, T. F. de Lima, A. Tait, B. Marquez, H. Peng, **C. Huang**, V. Sorger, and P. Prucnal, “Advances in neuromorphic photonics (conference presentation),” in *Integrated Optics: Devices, Materials, and Technologies XXIV*, vol. 11283. International Society for Optics and Photonics, 2020, p. 1128314
- [C14] T. F. de Lima, **C. Huang**, S. Bilodeau, A. N. Tait, H.-T. Peng, P. Y. Ma, E. C. Blow, B. J. Shastri, and P. Prucnal, “Real-time operation of silicon photonic neurons,” in *Optical Fiber Communication Conference*. Optical Society of America, 2020, pp. M2K–4
- [C15] T. F. de Lima, H.-T. Peng, M. A. Nahmias, **C. Huang**, S. Abbaslou, A. N. Tait, B. J. Shastri, and P. R. Prucnal, “Enhancing SOI waveguide nonlinearities via microring resonators,” in *CLEO: Science and Innovations*. Optical Society of America, 2019, pp. SW3H–7
- [C16] **C. Huang**, T. F. De Lima, A. Jha, S. Abbaslou, B. J. Shastri, and P. R. Prucnal, “Giant enhancement in signal contrast using integrated all-optical nonlinear thresholder,” in *Optical Fiber Communications Conference and Exhibition*. Optical Society of America, 2019, p. M3J2
- [C17] M. A. Nahmias, H.-T. Peng, T. F. De Lima, **C. Huang**, A. N. Tait, B. J. Shastri, and

- P. R. Prucnal, "A teraMAC neuromorphic photonic processor," in *2018 IEEE Photonics Conference (IPC)*. IEEE, 2018, pp. 1–2
- [C18] H. Zhang, Q. Zhang, **C. Huang**, and C. Shu, "Optical phase conjugation enhanced direct detection with Kramers-Kronig receiver," in *Optical Fiber Communications Conference*. Optical Society of America, 2019, pp. 1–3
- [C19] C. Shu and **C. Huang**, "Dynamic phase matching control for enhanced four-wave mixing processing of polarization-division-multiplexed coherent optical signals," in *Asia Communications and Photonics Conference*. Optical Society of America, 2017, pp. Su4A–4 (**Invited**)
- [C20] J. Liu, **C. Huang**, and C. Shu, "Photonic generation of microwave arbitrary waveforms based on gain-transparent SBS-induced phase shift," in *2017 IEEE Photonics Conference (IPC)*. IEEE, 2017, pp. 211–212
- [C21] J. Ru, **C. Huang**, and C. Shu, "Crosstalk mitigation in polychromatic sampling via backward Raman amplification," in *CLEO: QELS-Fundamental Science*. Optical Society of America, 2017, pp. JTh2A–86
- [C22] X. Wu, **C. Huang**, K. Xu, W. Zhou, C. Shu, and H. K. Tsang, "Single- λ 312 Gb/s discrete multi-tone interconnect of mode-division multiplexed network with a multicore fiber," in *Optical Fiber Communication Conference*. Optical Society of America, 2017, pp. Th3I–8
- [C23] J. Ru, **C. Huang**, Q. Xie, and C. Shu, "Uniformity improvement in serial-to-parallel data conversion via time lens processing with Raman amplification," in *2016 Asia Communications and Photonics Conference (ACP)*. IEEE, 2016, pp. 1–3
- [C24] **C. Huang**, N. Zhang, and C. Shu, "Suppression of pump beats in fiber-based wavelength multicast by backward Raman amplification," in *Nonlinear Photonics, OSA Topical Meeting*. Optical Society of America, 2016, pp. NTh2B–4
- [C25] X. Wu, K. Xu, **C. Huang**, C. Shu, and H. K. Tsang, "Mode division multiplexed 3×28 gbit/s on-chip photonic interconnects," in *CLEO: Science and Innovations*. Optical Society of America, 2016, pp. STu4G–6
- [C26] **C. Huang**, N. Zhang, B. Zheng, and C. Shu, "Enhancing performance of fiber-based FWM in coherent communication system by SBS-induced nonlinear phase," in *CLEO: Science and Innovations*. Optical Society of America, 2016, pp. SM2F–3
- [C27] **C. Huang**, Q. Xie, and C. Shu, "Reduction of nonlinear distortion in optical parametric sampling using backward Raman amplification," in *2016 Optical Fiber Communications Conference and Exhibition (OFC)*. Optical Society of America, 2016, pp. 1–3
- [C28] C. Shu, X. Fu, X. Guo, and **C. Huang**, "Advances in Raman-mediated parametric processing in nonlinear fibers," in *2015 IEEE Summer Topicals Meeting Series (SUM)*. IEEE, 2015, pp. 80–81 (**Invited**)
- [C29] **C. Huang**, Y. Wu, X. Guo, M. Li, and C. Shu, "Mitigation of nonlinear distortion in OPC module with backward Raman pumping," in *Optical Fiber Communication Conference*. Optical Society of America, 2015, pp. W1K–1
- [C30] C. Huang, X. Guo, X. Fu, L. Wang, and C. Shu, "Tailoring of saturation in fiber optical parametric amplifier by sbs-induced nonlinear phase," in *CLEO: QELS-Fundamental Science*. Optical Society of America, 2014, pp. JW2A–73
- [C31] L. Wang, **C. Huang**, X. Cheng, and C. Shu, "Enhanced tunable parametric delay assisted by gain-transparent stimulated Brillouin scattering," in *Optical Fiber Communica-*

tion Conference. Optical Society of America, 2014, pp. W4F–4