

## **KEY QUALIFICATIONS:**

- Research on photonics, including: integrated micro/nano optical devices, fiber-optical devices and subsystems, optical sensors, high-speed WDM optical communication systems and networks, and biomedical instruments

## **EDUCATION:**

- Ph.D. in Electrical Engineering, Univ. of Southern California, USA, 2005  
Dissertation: “Dispersive and Nonlinear Effects in High-Speed Reconfigurable WDM Optical Fiber Communication Systems” (Advisor: Dr. Alan E. Willner)
- Master of Science in Electrical & Computer Engineering, Univ. of Miami, USA, 1999  
Thesis: “Flat-Top and Non-Diffracting Beam Shaping Using Phase-Only Diffractive Optical Elements”
- Bachelor of Science in Applied Physics and Bachelor of Economics in Enterprise Management, Tsinghua Univ., China, 1997  
Thesis: “Excitons in Quantum Dot of II-VI Semiconductor”  
Thesis: “Economic Development of South Korea and Its Enlightenment to China”

## **PROFESSIONAL EXPERIENCE:**

- Dept. of Electronic and Information Engineering, The Hong Kong Polytechnic University (**Tenured Assoc. Professor**, 12/2015-present)
- Dept. of Electrical and Computer Engineering, National University of Singapore, Singapore (**Adjunct Faculty Member**, 01/2016-present)
- Dept. of Electrical and Computer Engineering, National University of Singapore (**Founding Leader of Photonic System Research Group**, 12/2005-12/2015)
- A\*STAR Institute for Infocomm Research (**25% Joint Senior Scientist**, 12/2005-12/2015)
- National University of Singapore Graduate School for Integrative Sciences and Engineering (**Ph.D. Supervisor**, 07/2011-12/2015)
- NEC Labs America (**Visiting Researcher**, 9/2005-12/2005)
- Optical Communications Lab, Dept. of Electrical Engineering, University of Southern California (**Research and Teaching Assistant**, 8/2000-8/2005)
- Electro-Optics & Micro-Devices Lab, Dept. of Electrical & Computer Engineering, University of Miami (**Research and Teaching Assistant**, 8/1997-5/2000)

## **RESEARCH PROJECTS IN HONG KONG AND SINGAPORE (2006-present, with 5 million+ USD fund)**

- Timing and frequency synchronization in optical fiber CO-OFDM systems (PI, HK RGC GRF 152007/18E B-Q68J, 01/2019~12/2021)

- Advanced optical fiber sensing and measurement systems (PI, HK Scholars Program G- YZ2S, 01/2019~12/2020)
- Advanced broadband photonic measurement system based on 67-GHz lightwave component analyzer (PI, HKPU 1.42.27.DDBT, 10/2018)
- Low-cost visual light fiber Bragg grating (FBG) sensor system (PI, HKPU 4-ZZJF, 03/2018~02/2019)
- Graphene-assisted all-fiber modulator for optical communication systems (PI, HK RGC GRF 152113/17E B-Q60D, 01/2018~12/2020)
- Novel dimming control methods in indoor mobile visible light communication systems (PI, HKPU 1-ZVL3, 01/2018~06/2019)
- High-capacity fiber interconnects with optical filtering and electronic signal processing for data centers (PI, HKPU G-YBPH, 01/2017~12/2018)
- Signal processing in optical fiber communication and sensor systems (PI, HK Scholars Program G-YZ0J, 01/2017~12/2018)
- Smart fiber-optic sensor system for real-time monitoring of water quality (PI, HKPU 1-ZVHA, 03/2016~02/2019)
- Digital frequency offset compensation in coherent optical OFDM systems (PI, HKPU 1-ZE5K, 03/2016~02/2019)
- The cross-layer optical performance monitoring based on radio frequency spectrum analysis and two-dimension phase portrait recognition as well as control plane coordination (PI, National Natural Science Foundation of China 61471253, 01/2015~12/2018)
- Optical switching technologies for data center networks (PI, ZTT Group R-2015-H-001, 01/2015~12/2016)
- Carrier recovery based on DSP in Tbit/s coherent optical OFDM systems (PI, MOE AcRF Tier 2 MOE2013-T2-2-145, 05/2014~12/2015)
- Hybrid digital- and radio-over-fiber network for urban infrastructure (PI, MOE AcRF R -263-000-A43-112, 03/2013~12/2015)
- Application of photonic integrated circuits in optical communication networks (PI, NUSRI R-2012-N-009, 01/2012~12/2014)
- OPM for smart optical networks based on RF analysis with optical filtering (PI, MOE AcRF R-263-000-631-112, 03/2011~02/2014)
- General research on fiber optics and optical communications (PI, Gift Donation from NEC Labs America R-263-000-565-720, 11/2009~03/2014)
- The applications of digital signal processing in 100-Gbit/s coherent optical communication systems (PI, A\*STAR SERC PSF 092 101 0054, 09/2009~08/2012)
- Autocorrelator for optical pulses based on measurement of polarization effects (PI, MOE AcRF R-263-000-424-112, 03/2007~02/2010)
- Multi-channel wavelength-tunable short pulses generation in ultra-high-speed optical systems (PI, MOE AcRF R-263-000-354-112/133, 03/2006~03/2009)
- Basic research on optical interconnect based on cylindrical vector beam for high performance computing and key components and systems (co-I, NSFC-Guangdong Joint Integrated Research Project U170160003, 01/2018~12/2021)

- 1 Terabit short reach optical interconnects (co-I, Huawei Technologies H-ZG6R, 06/2018~05/2020)
- Brillouin scattering based distributed optical sensing systems (co-I, Huawei Technologies H-ZG6B, 02/2018~08/2019)
- Low cost Ethernet grey light beyond 100G transmission techniques (co-I, Huawei Technologies H-ZG5S, 10/2017~12/2019)
- EVM measurement for high order modulation formats (co-I, Huawei Technologies H-ZG5L, 07/2017~03/2018)
- Single wavelength 100G IM/DD optical short reach system (co-I, Huawei Technologies H-ZG5F, 02/2017-12/2018)
- Low-cost coherent optical communication systems (co-I, Huawei Technologies H-ZG4X, 08/2016~07/2018)
- Phase estimation based on Viterbi MLSD algorithm in high-speed coherent optical OFDM communication system (co-PI, National Natural Science Foundation of China 61501313, 01/2016~12/2018)
- Low-cost and high-accuracy visible light indoor positioning system in smart building (Co-PI, A\*STAR SERC 1420200044, 04/2015~04/2017)
- Traffic Engineering and System Design for Hybrid Optical Data Center (co-PI, MOE AcRF Tier 2 MOE2013-T2-2-135, 05/2014~04/2017)
- Synthetic aperture radar on a nano-satellite swarm platform (Co-PI, MOE AcRF R-263-000-A51-112, 03/2013~02/2016)
- Investigations of decision-aided linear carrier phase estimation in ultra-high capacity wavelength division multiplexing optical coherent transmission systems (Co-PI, National Natural Science Foundation of China 61271239, 01/2013~12/2016)
- Microwave photonics in biomedical applications (Co-PI, International Program Development Fund of University of Sydney, 11/2012~10/2013)
- Visible light communications (Co-PI, A\*STAR SERC HOME2015 092 115 0111, 03/2010~08/2012)
- Small-footprint semiconductor optical transmitter for RZ transmission systems (Co-PI, MOE AcRF R-263-000-500-112, 05/2008~04/2011)
- Fabrication and testing of fiber optic hydrophones and arrays (Collaborator, A\*STAR EC-2007-20, 8/2007~1/2011)
- Distributed temperature and strain sensor (Collaborator, A\*STAR CR-2006-22, 4/2006~3/2007)

#### **RESEARCH PROJECTS IN USA (1997-2005):**

- High-special-efficiency DWDM optical fiber transmission systems (2005)
- Tunable delay line based on slow light in fiber (2004~2005)
- High speed all-optical logic gates, all-optical wavelength conversion and optical parametric amplification by fiber nonlinear effects (2002~2005)
- High speed short pulse train generation using phase modulator and PM fiber (2004~2005)
- Supercontinuum generation and multicasting in optical WDM networks (2004)

- Extending the transmission distance of directly modulated DFB laser system (2004)
- Monitoring and compensation of chromatic dispersion and polarization-mode dispersion (PMD) in WDM optical fiber transmission systems (2000~2003)
- Development of Labview-based beam profiler (1999~2000)
- Fabrication of holographic devices on ion-exchanged photo-chromic glass for optical interconnects and optical storage (1999~2000)
- High density nondiffracting beam array for optical interconnection (1997~1999)
- Fabrication of waveguide on HEBS glass by laser-writing assisted etching technique for chip-to-chip optical interconnects (1997~1999)
- Flat-top beam shaper fabricated by a non-lithographic technique (1997~1998)

### **TEACHING EXPERIENCE:**

- Lecture:
  1. EIE569 “Sensor Networks” (2019~present)
  2. EIE2302 “Electricity and Electronics” (2017~present)
  3. EIE2101 “Basic Circuit Analysis” (2017)
  4. EIE2261 “Logic Design” (2017)
  5. EIE2103 “Basic Electronics” (2016)
  6. EE6136 “Advanced Optical Communications” (2012~2015)
  7. EE4114 “Optical Communications” (2010~2015)
  8. EE3407 “Analog Electronics” (2007~2015)
  9. ESP1104 “Introduction to Electronic Systems” (2007~2009)
- Current Ph.D. students:  
DONG Shandong, WANG Biwei, TAN Fengze, WANG Zhuo, LUO Huaijian, YUAN Weihao, CHEN Shuyang
- Current Master students:  
LYU Weimin, LIU Zhongxu, LAI Ho Yin Koey
- Graduated Ph.D. students:
  1. LI Yan, “Carrier recovery and performance monitoring for coherent optical communications,” 08/2018
  2. DU Xinwei, “Optimum receiver design for coherent orthogonal frequency-division multiplexing,” 08/2018
  3. JIN Zhongwei, “Study of light manipulation via binary metasurface,” 08/2018
  4. HAO Chenglong, “Super-resolution with super-oscillatory/supercritical lens and gauged Graphene oxide flat lenses,” 08/2018
  5. TAN Kang, “Development of next-generation building blocks for Silicon photonic integrated circuits,” 08/2017
  6. ZHENG Huanhuan, “Design and analysis of visible light communication and positioning systems,” 01/2017

7. ZHOU Jingjing, "Optical access networks based on 1.5- $\mu\text{m}$  VCSELs," 08/2016
  8. HU Qikai, "Spectrum-sliced incoherent light source for optical access networks," 08/2016
  9. DONG Bo, "Miniaturized fiber modal interferometers and their applications as fiber sensors," 08/2015
  10. XU Zhuoran, "Maximum likelihood based carrier recovery for high speed coherent optical communication systems," 08/2014
  11. YU Yi, "Optical performance monitoring in high-speed optical communication systems," 08/2014
  12. CAO Shengjiao, "Digital signal processing for front-end non-idealities in coherent optical OFDM system," 01/2014
  13. ZHANG Hongyu, "Study on advanced modulation formats in coherent optical communication systems," 08/2012
  14. HU Junhao, "Advances measurement techniques in optical fiber sensor and communication systems," 08/2011
  15. ZHANG Shaoliang, "Coherent phase-modulated optical fiber communications with linear and nonlinear phase noise," 01/2011
  16. YANG Jing, "Management of fiber physical effects in high-speed optical communication and sensor systems," 08/2010
- Graduated Master students:
    1. YANG Zongru, "Investigation of the tilted fiber Bragg grating," 12/2018
    2. LI Pengfei, "Optical spectrometer based on smartphone," 12/2018
    3. QIAN Hao, "Low-cost visual light FBG sensor interrogation system," 12/2018
    4. HUANG Zhenyu, "Vital signs monitoring based on few-mode fiber sensors," 12/2018
    5. CHEN Shuyang, "Breath monitoring based on optical fiber interferometer," 12/2018
    6. GUAN Hang, "Novel polarization-diversity devices on a silicon-on-insulator platform," 08/2014
    7. Prasanna Caliapeourmal, "Optical performance monitoring in high-speed reconfigurable optical networks," 05/2012
    8. Raju Gottumukkala, "Dispersion monitoring based on RF spectrum analysis with optical filtering in high-speed optical communication systems," 12/2010
    9. YU Yi, "Filtering effects in high-speed differential phase-shift keying optical communication systems," 12/2009
    10. HAN Xue, "Comparison of modulation formats in 42.8-Gbit/s WDM fiber-optic communication systems," 05/2009
    11. LI Xiaojing, "Pilot-aided maximum likelihood phase estimation in optical  $M$ -ary phase-shift keying system," 12/2008
  - Post-doc researchers supervised:
    1. Dr. XUE Min, 01/2019- present
    2. Dr. DU Xinwei, 12/2018- present
    3. Dr. LI Yan, 10/2018- present

4. Dr. YOU Xiaodi, 10/2018- present
5. Dr. LIU Yi, 08/2017- present
6. Dr. TU Jiajing, 01/2017- present
7. Dr. ZHANG Jing, 03/2015-03/2016
8. Dr. XU Zhuoran, 12/2014-01/2016
9. Dr. YU Yi, 09/2014-08/2015
10. Dr. ZHENG Wei, 08/2014-07/2015
11. Dr. HU Junhao, 08/2011~08/2012
12. Dr. YANG Jing, 11/2010~08/2012
13. Dr. CHEN Wei, 08/2010~08/2012
14. Dr. ZHANG Banghong, 08/2010~08/2012
15. Dr. SHAO Xuguang, 03/2010~08/2011

#### **ACTIVITIES:**

- Senior Member, IEEE Photonics Society (IEEE/PS)
- Senior Member, Optical Society of America (OSA)
- Vice chair, IEEE/PS Hong Kong Chapter (2017-present)
- Secretary, IEEE/PS Hong Kong Chapter (2016-2017)
- Student activity chair, IEEE Singapore Section (2011~2012)
- **Chair, IEEE/PS Singapore Chapter (2010, won Best Chapter Award from IEEE Singapore Session, and Largest Membership Increase Chapter Award from IEEE/PS)**
- Supervisor, the Student Branch of IEEE/PS Singapore Chapter (2009~2015)
- Committee member, IEEE/PS Singapore Chapter (2007~2015)
- Founding secretary and committee member, OSA Singapore Chapter (2010~2015)
- Chair/Committee member, ECE Alumni Relations Committee, NUS (2012~2015)
- **Member, Telecommunications Standards Advisory Committee (TSAC) for Infocomm Development Authority (IDA) of Singapore: to define the standards of the physical layer for the next generation broadband network in Singapore (2009~present)**
- **Serve in organizing committee or technical program committee (TPC) for 80+ international conferences, including:**
  1. **TPC member and session chair, Europe Conference on Optical Communication (ECOC, prestigious conference on optical communications) 2018-present**
  2. **TPC chair, 13th Pacific Rim Conference on Lasers and Electro-Optics (CLEO-PR) 2018, Hong Kong, July 29-August 3, 2018 (900+ attendants)**
  3. Industry workshop co-chair, the IEEE Global Communications Conference (GLOBECOM) 2017, Singapore, December 4-8, 2017
  4. **TPC chair, Opto-Electronics and Communications Conference (OECC) 2017, Singapore, July 31-August 4, 2017 (collocated with CLEO-PR/PGC, 1,700+ attendants)**
  5. Co-chair of Optical Fibers and Fabrics Symposium, 6th International Multidisciplinary

Conference on Optofluidics (OPTOFLUIDICS) 2017, Singapore, July 25-28, 2017

6. **TPC member and session chair, Conference on Optical Fiber Communication (OFC, the flagship conference on optical communications) 2014-2016**
7. Conference chair, Optoelectronic Devices and Integration VI, Photonics Asia, Beijing, China, October 12-14, 2016
8. Chair of Photonics Sensors and Sensing Networks Subcommittee, 15th International Conference on Optical Communications and Networks (ICOON) 2016, Hangzhou, China, September 24-27, 2016
9. **General chair, Signal Processing in Photonics Communications Conference, OSA Advanced Photonics Congress (SPPCom) 2016, Vancouver, Canada, July 18-21, 2016**
10. Co-chair of Optical Symposium, 25th Wireless and Optical Communication Conference (WOCC) 2016, Chengdu, China, May 21-22, 2016
11. Chair of Optical Communications Symposium, IEEE Photonics Global Conference (PGC) 2015, Singapore, June 28 –July 3, 2015
12. **General chair, Signal Processing in Photonics Communications Conference, OSA Advanced Photonics Congress (SPPCom) 2015, Boston, MA, USA, June 27-July 1, 2015**
13. Chair of Optical Communications Special Session, 14th IEEE International Conference on Communication Systems (ICCS) 2014, Macau, November 19-21, 2014
14. Chair of Optical Transmission Subsystems and Techniques Subcommittee, 13th International Conference on Optical Communications and Networks (ICOON) 2014, Suzhou, China, November 9-10, 2014
15. Chair of Optical Communication Systems and Networks Symposium, 3rd IEEE/CIC International Conference on Communications in China (ICCC) 2014, Shanghai, China, October 13-15, 2014
16. Conference chair, Optoelectronic Devices and Integration V, Photonics Asia, Beijing, China, October 9-11, 2014
17. **TPC chair, Signal Processing in Photonics Communications Conference, OSA Advanced Photonics Congress (SPPCom) 2014, San Diego, CA, USA, July 13-17, 2014**
18. Co-chair of Biomedical Instrumentation Track, International Conference in Biomedical Engineering (ICBME) 2013, Singapore, December 4-7, 2013
19. Chair of Advanced Optical Communications Symposium and financial chair, IEEE Photonics Global Conference (PGC) 2012, Singapore, December 13-16, 2012
20. TPC member and session chair, 11th International Conference on Optical Communications and Networks (ICOON) 2012, Pattaya, Thailand, November 28-30, 2012
21. TPC member and session chair, Asia Communications and Photonics Conference and Exhibition (ACP) 2012, Guangzhou, China, November 7-10, 2012
22. Conference chair, Semiconductor Lasers and Applications V, Photonics Asia 2012, Beijing, China, November 5-9, 2012
23. **TPC co-chair, International Conference on Information Photonics & Optical Communications (IOPC) 2011, Singapore, October 21-23, 2011**
24. TPC member and publicity chair, IEEE Topical Meeting on Microwave Photonics (MWP) 2011, Singapore, October 18-21, 2011

25. Co-chair of Optical Communication and Networks Symposium and local arrangement chair, IEEE Photonics Global Conference (PGC) 2010, Singapore, December 14-16, 2010
  26. Honorary conference chair, 1st Photonics Global Student Conference (PGSC) 2010, Singapore, December 14-16, 2010
  - 27. TPC co-chair, 12th IEEE International Conference on Communication Systems (ICCS) 2010, Singapore, November 17-19, 2010**
  28. Conference co-chair on optical transmission, 9th International Conference on Optical Communications and Networks (ICOON) 2010, Nanjing, China, October 24-27, 2010
  29. TPC member and session chair, Asia Communications and Photonics Conference and Exhibition (ACP) 2009, Shanghai, China, November 2-6, 2009
  30. TPC member and session chair, Opto-Electronics and Communications Conference (OECC) 2009, Hong Kong, July 13-17, 2009
  31. Co-chair of Symposium P (Fiber Optical Devices and Applications), 5th International Conference on Materials for Advanced Technologies (ICMAT) 2009, Singapore, June 28-July 3, 2009
  32. TPC member and organizing committee member, IEEE Photonics Global Conference (PGC) 2008, Singapore, December 8-11, 2008
  33. TPC member and session chair, Opto-Electronics and Communications Conference (OECC) 2008, Sydney, Australia, July 7-10, 2008
- Executive editor (01/02/2017-present), *Optical and Quantum Electronics* (ISSN: 0306-8919 print version, ISSN: 1572-817X electronic version), published by Springer
  - Editorial board member (01/10/2013-present), *Photonic Network Communications Journal* (ISSN: 1387-974X print version, 1572-8188 electronic version), published by Springer
  - Editorial board member (01/09/2013-31/08/2016), *Frontiers of Optoelectronics* (ISSN: 2095-2759 print version, 2095-2767 electronic version), published by Springer
  - Reviewer for *IEEE/OSA Journal of Lightwave Technology*, *IEEE Photonics Technology Letters*, *IEEE Transaction on Communications*, *IEEE Journal of Selected Topics in Quantum Electronics*, *IEEE Photonics Journal*, *Optics Letters*, *Optics Express*, *Applied Optics*, *Optics Communications*, *Optical Fiber Technology*, *Optics Engineering*, *IEEE Electronics Letters*, and a few other journals and international conferences

## HONORS:

- **Championship in biomedical area, the 3<sup>rd</sup> China Innovation and Entrepreneurship Competition (out of 10,000+ competitors, sponsored by Ministry of Science and Technology of China) 2014, reported by 10+ media**
- **6 best paper awards in international conferences**
- Academic Achievement Award, Univ. of Southern California, 2005
- **IEEE/LEOS (now IEEE Photonics Society) Graduate Student Fellowship Award, 2004 (12 winners from all over the world), reported in the IEEE LEOS website and also the IEEE LEOS newsletters**
- Teaching and Research Assistant Scholarship, Univ. of Southern California, 2000- 2005
- Award of Academic Merit, Graduate School of Univ. of Miami, 1999
- Teaching and Research Assistant Scholarship, Univ. of Miami, 1997- 2000



- Outstanding Student Scholarship, Tsinghua Univ., 1992-1996

**PUBLICATIONS (with 3800+ citations, H-index=29 till 01/2019, Good Scholar: <http://scholar.google.com.sg/citations?user=w0UGtSoAAAAJ>)**

**(US PATENT)**

1. U.S. Pat. # 6,646,774 (Co-inventors: Z. Pan, Y. Wang, T. Luo, A.B. Sahin, Q. Yu, and A.E. Willner), “Intra-bit polarization diversity modulation,” Issued on November 11, 2003

**(BOOK CHAPTERS)**

2. C. Yu, Z. Li, and S. Zhang, “Frontiers of high-speed optical fiber communications,” *Frontiers of Fiber Optics*, N.H. Zhu, L.-S. Yan, and J. Liu, editors, Science Press, 2011, ISBN: 978-7-03-032470-2 (in Chinese)
3. N. Liu and C. Yu, “Optical performance monitoring in optical fiber communications,” *Frontiers of Fiber Optics*, N.H. Zhu, L.-S. Yan, and J. Liu, editors, Science Press, 2011, ISBN: 978-7-03-032470-2 (in Chinese)
4. C. Yu, “Polarization mode dispersion monitoring,” *Optical Performance Monitoring: Advanced Techniques for Next-Generation Photonic Networks*, Calvin C. K. Chan, editor, Academic Press, Elsevier Inc., 2010, ISBN: 978-0-12-374950-5
5. A.E. Willner, C. Yu, Z. Pan, and Y. Xie, “WDM fiber optic communication networks,” *Handbook of Optics*, 3<sup>rd</sup> Edition, Vol. V, M. Bass, C.M. DeCusatis, J.M. Enoch, V. Lakshminarayanan, G. Li, C. MacDonald, V.N. Mahajan, E. Van Stryland, editors, McGraw-Hill, Inc., 2009, ISBN: 978-0-07-163313-0
6. A.E. Willner, Z. Pan, and C. Yu, “Optical performance monitoring,” *Optical Fiber Telecommunications VB*, Ivan P. Kaminow, Tingye Li, and Alan E. Willner, editors, Academic Press, Elsevier Inc., 2008, ISBN: 978-0-12-374172-1
7. C. Yu, “Comparison of advanced modulation formats for 40-Gbit/s DWDM optical fiber transmission systems with 50-GHz channel spacing,” *Advanced Technologies for High-Speed Optical Communications*, Lei Xu, editor, Research Signpost, 2007, ISBN: 81-308-0171-X

**(JOURNALS)**

8. P. Zhu, J. Wang, F. Rao, C. Yu, G. Zhou, and X. Huang, “Differential Fresnel-reflection-based fiber biochemical sensor with temperature self-compensation for high-resolution measurement of  $\text{Cd}^{2+}$  concentration in solution,” *Sensors and Actuators B: Chemical*, vol. 282, pp.644-649, March 2019
9. X You, J Chen, and C. Yu, “Cold-start of coherent optical receivers with decision-aided maximum likelihood phase estimation scheme,” *Optics Communications*, vol. 435, pp. 41-45, March 2019
10. B. Wang, L. Wang, N. Guo, Z. Zhao, C. Yu, C. Yu, and C. Lu, “Deep neural networks assisted BOTDA for simultaneous temperature and strain measurement with enhanced accuracy,” *Optics Express*, vol. 27, no. 3, pp. 2530-2543, February 2019
11. Z. Jin, S. Mei, S. Chen, Y. Li, C. Zhang, Y. He, X. Yu, C. Yu, J.K.W. Yang, B. Luk’yanchuk, S. Xiao, and C.W. Qiu, “Complex inverse design of meta-optics by segmented hierarchical evolutionary algorithm,” *ACS Nano*, vol. 13, no. 1, pp. 821-829, January 2019 (**Impact factor: 13.71**)
12. J. Zhou, Y. Qiao, C. Yu, M. Guo, X. Tang, W. Liu, S. Chun, and Z. Li, “Joint Hartley-domain and time-domain equalizer for a 200-G ( $4 \times 56$ -Gbit/s) optical PAM-4 system using 10G-class optics,” *Optics Express*, vol. 26, no. 26, pp. 34451-34460, December 2018

13. J. Tu, B. Zhang, Z. Liu, X. Zhou, K. Long, Z. Li, C. Lu, and C. Yu, "Chalcogenide-glass nested anti-resonant nodeless fibers in mid-infrared region," *IEEE/OSA Journal of Lightwave Technology*, vol. 36, no. 11, pp. 5244-5253, November 2018
14. H. Ren, Z. Wang, S. Du, Y. He, J. Chen, S. Han, **C. Yu**, C. Xu, and J. Yu, "Performance improvement of NOMA visible light communication system by adjusting superposition constellation: a convex optimization approach," *Optics Express*, vol. 26, no. 23, pp. 29796-29806, November 2018
15. X. You, J. Chen and C. Yu, "Efficient Indoor Data Transmission With Full Dimming Control in Hybrid Visible Light/Infrared Communication Systems," *IEEE Access*, vol. 6, pp. 77675-77684, November 2018
16. F. Ni, Z. Xie, Q. Ma, J. Tao, L. Wu, C. Yu, and X. Huang, "Variable optical attenuator and modulator based on a graphene plasmonic gap waveguide," *Optics Communications*, vol. 426, pp. 70-74, November 2018
17. J. Huo, X. Zhou, K. Zhong, J. Tu, H. Wei, J. Yuan, Z. Kang, K. Long, C. Yu, A.P.T. Lau, and C. Lu, "Experimental study of single channel 100 Gbit/s PAM4 transmission over 40 km using 17 GHz EML and APD at O band," *Optical Fiber Technology*, vol. 45, pp. 411-414, November 2018
18. X. Shen, J. Huo, X. Zhou, K. Zhong, J. Yuan, J. Tu, K. Long, C. Yu, A.P.T. Lau, and C. Lu, "Performance comparison among three different Stokes vector direct-detection receivers," *Chinese Optics Letters*, vol. 16, no. 10, pp. 100605.1-6, October 2018
19. J. Huo, X. Zhou, K. Zhong, J. Tu, J. Yuan, C. Guo, K. Long, C. Yu, A.P.T. Lau, and C. Lu, "Transmitter and receiver DSP for 112 Gbit/s PAM-4 amplifier-less transmissions using 25G-class EML and APD," *Optics Express*, vol. 26, no. 18, pp. 22673-22686, September 2018
20. F. Tan, Z. Liu, J. Tu, C. Yu, C. Lu, and H.Y. Tam, "Torsion sensor based on inter-core mode coupling in seven-core fiber," *Optics Express*, vol. 26, no. 16, pp. 19835-19844, August 2018
21. Y. Li, T. Song, M. Gurusamy, C. Yu, and P.Y. Kam, "Enhanced adaptive DA-ML carrier phase estimator and its application to accurate laser linewidth and SNR estimation," *Optics Express*, vol. 26, no. 12, pp. 14817-14831, June 2018
22. N. Zhang, W. Xu, S. You, C.C. Yu, C. Yu, B. Dong, and K. Li, "Simultaneous measurement of refractive index, strain and temperature using a tapered structure based on SMF," *Optics Communications*, vol. 410, pp. 70-74, March 2018
23. S. Dong, B. Dong, C. Yu, and Y. Guo, "High sensitivity optical fiber curvature sensor based on cascaded fiber interferometer," *IEEE/OSA Journal of Lightwave Technology*, vol. 36, no. 4, pp. 1125-1130, February 2018
24. Y. Li, M. Wu, X. Du, Z. Xu, M. Gurusamy, C. Yu, and P.Y. Kam, "Nonlinear phase noise tolerance for coherent optical systems using soft-decision-aided ML carrier phase estimation enhanced with constellation partitioning," *Optics Communications*, vol. 409, pp. 45-51, February 2018
25. X. Li, M. Luo, Y. Qiu, A. Alphones, W. Zhong, C. Yu, and Q. Yang, "Independent component analysis based digital signal processing in coherent optical fiber communication systems," *Optics Communications*, vol. 409, pp. 13-22, February 2018
26. K. Zhong, X. Zhou, J. Huo, C. Yu, C. Lu, and A.P.T. Lau, "Digital signal processing for short-reach optical communications: a review of current technologies and future trends," *IEEE/OSA Journal of Lightwave Technology*, vol. 36, no. 2, pp. 377-400, January 2018 (Invited)
27. Y. Xu, Z. Wang, P. Liu, J. Chen, S. Han, C. Yu, and J. Yu, "Accuracy analysis and

- improvement of visible light positioning based on VLC system using orthogonal frequency division multiple access,” *Optics Express*, vol. 25, no. 15, pp. 32618-32630, December 2017
28. C. Hao, Z. Nie, H. Ye, H. Li, Y. Luo, R. Feng, X. Yu, F. Wen, Y. Zhang, C. Yu, J. Teng, B. Luk'yanchuk, and C.W. Qiu, “Three-dimensional supercritical resolved light-induced-magnetic holography,” *Science Advances*, vol. 3, pp. 1701398.1-9, October 2017 (**Impact Factor 11.51**)
  29. H. Zheng, Z. Xu, C. Yu, and M. Gurusamy, “A 3-D high accuracy positioning system based on visible light communication with novel positioning algorithm,” *Optics Communications*, vol. 396, pp. 160-168, August 2017
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245. C. Yu and Y. Yu, "Optical performance monitoring based on filtering effects," *Optoelectronic Global Conference (OGC) 2015*, Paper 39, pp. 1-1, Shenzhen, China, August 29-31, 2015 (Invited)
246. C. Yu, "Optical performance monitoring based on the 2-D phase portrait," *7<sup>th</sup> International Conference on Information Optics and Photonics (CIOP) 2015*, Paper 4.4, pp. 1, Nanjing, China, July 12-15, 2015 (Invited)

247. C. Yu and Y. Yu, "Optical signal to noise ratio monitoring based on optical filtering effects in high-speed optical transmission systems," *17<sup>th</sup> International Conference on Transparent Optical Networks (ICTON) 2015*, Paper We.C1.3, pp. 1-4, Budapest, Hungary, July 5-9, 2015 (Invited)
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249. B. Dong, C. Yu, and Y. Wang, "Thermal characteristics of the ethanol-filled hollow-core photonic-crystal-fiber modal interferometer," *10<sup>th</sup> International Conference on Optical Communications and Networks (ICO CN) 2015*, Paper Sa2E.2, pp. 1-4, Nanjing, China, July 3-5, 2015 (Invited)
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253. X. You, J. Chen, H. Zheng, and C. Yu, "Time domain reshuffling for OFDM based indoor visible light communication systems," *IEEE Photonics Global Conference (PGC) 2015*, Paper H2-2, pp. 1, Singapore, June 28-July 3, 2015
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256. Y. Yu, K. Tan, and C. Yu, "Optical signal to noise ratio monitoring using 1D histogram with low bandwidth receiver in 100Gb/s PDMRZQPSK system," *IEEE Photonics Global Conference (PGC) 2015*, Paper H4-4, pp. 1, Singapore, June 28-July 3, 2015
257. K. Tan, Y. Huang, P. Lo, C. Lee, and C. Yu, "CMOS-Compatible broadband 1310-nm wavelength polarization splitter and rotator with high fabrication tolerance," *IEEE Photonics Global Conference (PGC) 2015*, Paper H9-3, pp. 1, Singapore, June 28-July 3, 2015
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262. J. Zhou, C. Yu, and H. Kim, "1.5- $\mu$ m, 21.4-Gb/s 4-PAM VCSEL link for optical access applications," *Conference on Optical Fiber Communication (OFC) 2015*, paper Th2A.54, pp. 1-3, Los Angeles, CA, USA, 22-26 March, 2015
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264. C. Yu, "Carrier recovery for digital coherent transmission," *Asia Communications and Photonics Conference and Exhibition (ACP) 2014*, pp. 1, Shanghai, China, November 11-14, 2014 (Invited Talk in Workshop "What Else Is Needed for Coherent Transmission")
265. Y. Fan, J. Chen, P. Cao, and C. Yu, "Performance of carrier phase estimation QPSK optical coherent receiver with N bit resolution ADCs," *13<sup>th</sup> International Conference on Optical Communications and Networks (ICOON) 2014*, Paper M32.3, pp. 1-4, Suzhou, China, November 9-10, 2014 (Invited)
266. J. Chen, N. Ma, H. Yang, and C. Yu, "On the performance of MU-MIMO indoor visible light communication system based on THP algorithm," *3<sup>rd</sup> IEEE/CIC International Conference on Communications in China (ICCC) 2014*, Paper OCSN-2, pp. 1-5, Shanghai, China, October 13-15, 2014 (Invited)
267. J. Chen, X. You, H. Zheng, and C. Yu, "Excess signal transmission with dimming control pattern in indoor visible light communication systems," *Photonics Asia 2014*, Paper 9270-40, pp. 1-8, Beijing, China, October 9-11, 2014 (Invited)
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270. C. Yu, Z. Chen, and J. Hu, "Long-range and biomedical measurements based on optical fiber strain sensor," *35<sup>th</sup> Progress in Electromagnetic Research Symposium (PIERS) 2014*, Paper 4A1-12, pp. 1, Guangzhou, China, August 25-28, 2014 (Invited)
271. J. Chen, Y. Hong, X. You, H. Zheng, and C. Yu, "Conceptual design of multi-user visible light communication systems over indoor lighting infrastructure," *9<sup>th</sup> International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP) 2014*, Paper 355, pp. 1-4, Manchester, UK, July 23-25, 2014 (Invited)
272. Y. Hong, J. Chen, and C. Yu, "Performance improvement of the pre-coded multi-user MIMO indoor visible light communication system," *9<sup>th</sup> International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP) 2014*, Paper 62, pp. 1-4, Manchester, UK, July 23-25, 2014
273. Y. Yu and C. Yu, "Pulse carver alignment monitoring for RZ-DPSK and DQPSK signals based on delay-tap sampling technique," *9<sup>th</sup> International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP) 2014*, Paper 233, pp. 1-4,

Manchester, UK, July 23-25, 2014

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275. C. Yu and Y. Yu, "Optical performance monitoring in fiber transmission systems based on electrical sampling technique," *16<sup>th</sup> International Conference on Transparent Optical Networks (ICTON) 2014*, Paper V.1, pp. 1-4, Graz, Austria, July 6-10, 2014 (Invited)
276. H. Zheng, C. Yu, and H. Kim, "The performance of inter-satellite BFSK and 4FSK optical communication system with pointing error," *OptoElectronics and Communications Conference (OECC) 2014*, Paper TU3F-3, pp. 1-3, Melbourne, Australia, July 6-10, 2014
277. Z. Xu, H. Zheng, C. Yu, and P.Y. Kam, "Performance of pilot-assisted maximum-likelihood sequence detection in a rotated-8QAM coherent optical system," *OptoElectronics and Communications Conference (OECC) 2014*, Paper TH10E-1, pp. 1-3, Melbourne, Australia, July 6-10, 2014
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282. S. Cao, P.Y. Kam, and C. Yu, "Pilot-aided log-likelihood ratio for LDPC coded M-QAM CO-OFDM system," *Conference on Optical Fiber Communication (OFC) 2014*, Paper W3J.1, pp. 1-3, San Francisco, CA, USA, March 9-13, 2014
283. Y. Yu and C. Yu, "OSNR monitoring by using single sampling channel generated 2-D phase portrait," *Conference on Optical Fiber Communication (OFC) 2014*, Paper Th2A.49, pp. 1-3, San Francisco, CA, USA, March 9-13, 2014
284. X. Li, W.D. Zhong, A. Alphones and C. Yu, "Channel equalization based on independent component analysis for coherent optical PDM-OFDM," *Conference on Optical Fiber Communication (OFC) 2014*, Paper Tu3G.2, pp. 1-3, San Francisco, CA, USA, March 9-13, 2014
285. J. Zhou, H. Kim, and C. Yu, "10-Gb/s, 20-km VCSEL optical access link at 1.5  $\mu\text{m}$  with 23-dB power budget," *Conference on Optical Fiber Communication (OFC) 2014*, Paper W2A.2, pp. 1-3, San Francisco, CA, USA, March 9-13, 2014
286. J. Chen, Y. Hong, Z. Wang, and C. Yu, "Precoded visible light communications," *9<sup>th</sup> International Conference on Information, Communications and Signal Processing (ICICS) 2013*, Paper. P0273, pp. 1-4, Tainan, Taiwan, December 10-13, 2013 (Invited)

287. D. Huang, T.-H. Cheng, and C. Yu, "Decision-aided carrier phase estimation with selective averaging for low-cost optical coherent communication," *9<sup>th</sup> International Conference on Information, Communications and Signal Processing (ICICS) 2013*, Paper. P0214, pp. 1-4, Tainan, Taiwan, December 10-13, 2013
288. J. Chen, Y. Hong, Z. Wang, and C. Yu, "Enhanced signal processing and system configurations for visible light communication," *Asia Communications and Photonics Conference and Exhibition (ACP) 2013*, pp. 1-3, Beijing, China, November 12-15, 2013 (Invited)
289. J. Chen, Y. Hong, X. Ma, Z. Wang, and C. Yu, "Advanced technologies in visible light communication systems," Paper V-2.1, *11<sup>th</sup> International Conference on Optical Internet (COIN) 2013*, pp. 1-3, Beijing, China, October 18-20, 2013 (Invited)
290. X. Ma, J. Chen, X. You, and C. Yu, "Time domain reshuffling of DC-biased optical OFDM signals," *11<sup>th</sup> International Conference on Optical Internet (COIN) 2013*, Paper. V-3.5, pp. 1-3, Beijing, China, October 18-20, 2013
291. C. Yu, Z. Chen, and J. Hu, "Biomedical optical fiber sensor," *Australian Biomedical Engineering Conference (ABEC) 2013*, Paper a54, pp. 1, Sydney, Australia, October 13-16, 2013 (Invited)
292. C. Yu, and Y. Yu, "OSNR monitoring in optical fiber communication systems," *International Conference on Lasers, Optics & Photonics (OPTICS) 2013*, pp. 1, San Antonio, TX, USA, October 7-9, 2013 (Invited)
293. J. Chen, X. Ma, and C. Yu, "Time domain reshuffling of asymmetrically clipped optical OFDM signals," *IEEE Photonics Conference (IPC) 2013*, pp. 1-2, Bellevue, WA, USA, September 8-12, 2013
294. Y. Yu, C.F. Loh, Z. Xu and C. Yu, "OSNR Monitoring for PDM RZ-DQPSK System by Low Bandwidth Sampling Technique," *Asia-Pacific Conference on Communications (APCC) 2013*, Paper V-2.1, pp. 1-2, Bali Dynasty Resort, Bali, Indonesia, August 29-31, 2013
295. Y. Yu and C. Yu, "Simultaneous OSNR and CD Monitoring for NRZ-DPSK and DQPSK Signals by Single-Channel Sampling Technique," *Asia-Pacific Conference on Communications (APCC) 2013*, Paper VII-3.1, pp. 1-2, Bali Dynasty Resort, Bali, Indonesia, August 29-31, 2013
296. C. Yu, and Y. Yu, "Optical performance monitoring in high-speed fiber communication systems based on low-bandwidth delay-tap sampling," *8<sup>th</sup> International Conference on Communications and Networking in China (ChinaCom) 2013*, pp. 1-4, Guilin, China, August 14-16, 2013 (Invited)
297. Z. Chen, J. Hu, and C. Yu, "Fiber sensor for long-range and biomedical measurements," *12<sup>th</sup> International Conference on Optical Communications and Networks (ICOON) 2013*, Paper SC2In1, Paper SC2In2, pp. 1-4, Chengdu, China, July 26-28, 2013 (Invited)
298. C. Yu, and Y. Yu, "Optical performance monitoring based on filtering in high-speed optical fiber communication systems," *Signal Processing in Photonics Communications Conference, OSA Advanced Photonics Congress (SPPCom) 2013*, Paper SP4D.4, pp. 1-3, Rio Grande, Puerto Rico, USA, July 14-17, 2013 (Invited)
299. X. Li, A. Alphones, W.D. Zhong and C. Yu, "Improved U-S OFDM for fiber nonlinearity mitigation in long haul transmission," *OptoElectronics and Communications Conference (OECC) 2013*, Paper TuR4-5, pp. 1-2, Kyoto, Japan, June 30-July 4, 2013
300. Z. Xu, C. Yu, and P.Y. Kam, "Performance of adaptive maximum likelihood sequence detection with nonlinear phase Noise," *OptoElectronics and Communications Conference*

(*OECC*) 2013, Paper TuPR-16, pp. 1-2, Kyoto, Japan, June 30-July 4, 2013

301. W. Zhong, Z. Wang, and C. Yu, "Performance enhancement techniques for free-space optical transmission systems," *15<sup>th</sup> Anniversary International Conference on Transparent Optical Networks (ICTON) 2013*, Paper TuA3.1, pp. 1-4, Cartagena, Spain, June 23-27, 2013 (Invited)
302. Z. Xu, B. Zhang, C. Yu, and P.Y. Kam, "Adaptive maximum likelihood sequence detection in 100-Gb/s coherent optical communication systems," *Conference on Optical Fiber Communication (OFC) 2013*, Paper JTh2A.46, pp. 1-3, Anaheim, CA, USA, March 17-21, 2013
303. S. Cao, S. Zhang, C. Yu, and P.Y. Kam, "Full-range pilot-assisted frequency offset estimation for OFDM systems," *Conference on Optical Fiber Communication (OFC) 2013*, Paper JW2A.53, pp. 1-3, Anaheim, CA, USA, March 17-21, 2013
304. H. Ju, C. Yu, C.P. Chin, and Y.S. Kwok, "LED-camera communication system with RGB coding," *IEEE Photonics Global Conference (PGC) 2012*, Paper 2-3G-4, pp. 1-4, Singapore, December 13-16, 2012
305. Y. Yu, J. Yang, and C. Yu, "Optical signal to noise ratio monitoring using a novel optical notch filtering scheme," *IEEE Photonics Global Conference (PGC) 2012*, Paper 2-2G-4, pp. 1-4, Singapore, December 13-16, 2012
306. S. Cao, C. Yu, and P.Y. Kam, "Mitigation of nonlinearity based on optimized percentage of dispersion pre-compensation in coherent optical PDM-OFDM systems," *IEEE Photonics Global Conference (PGC) 2012*, Paper 2-1G-3, pp. 1-4, Singapore, December 13-16, 2012 (Best Student Paper Award)
307. C. Yu, J. Yang, and Y. Yu, "Dispersion and OSNR monitoring in high-speed optical fiber communication system," *11<sup>th</sup> International Conference on Optical Communications and Networks (ICOON) 2012*, Paper FRI-18, pp. 1-4, Pattaya, Thailand, November 28-30, 2012 (Invited)
308. Z. Wang, J. Chen, W. Zhong, C. Yu, and W. Chen, "User-oriented visible light communication system with dimming control scheme," *11<sup>th</sup> International Conference on Optical Communications and Networks (ICOON) 2012*, Paper THU-09, pp. 1-4, Pattaya, Thailand, November 28-30, 2012 (Invited)
309. Y. Yu, J. Yang, and C. Yu, "Low cost and CD insensitive optical signal to noise ratio monitoring method using beat noise," *International Conference on Communications Systems (ICCS) 2012*, Paper MC7-2, pp. 1-4, Singapore, November 21-23, 2012
310. C. Yu, P.Y. Kam, and S. Cao, "Decision-aided phase estimation in single carrier and OFDM coherent optical communication systems," *Asia Communications and Photonics Conference and Exhibition (ACP) 2012*, Paper AS4C.1, pp. 1-4, Guangzhou, China, November 7-10, 2012 (Invited)
311. C. Yu, "Optical performance monitoring in high-speed reconfigurable optical fiber communication networks," *7<sup>th</sup> International Conference on Communications and Networking in China (ChinaCom) 2012*, Paper OCN04-1, pp. 1-4, Dianchi Garden Hotel, Kunming, China, August 8-10, 2012 (Invited)
312. S. Cao, P.Y. Kam, and C. Yu, "Log-likelihood Metric for LDPC coded BDPSK-OFDM Transmission," *OptoElectronics and Communications Conference (OECC) 2012*, Paper 4B3-4, pp. 1-2, BEXCO, Busan, Korea, July 2-6, 2012
313. S. Cao, P.Y. Kam, and C. Yu, "Pre-distortion versus Post-equalization for IQ Mismatch Compensation in CO-OFDM," *OptoElectronics and Communications Conference (OECC)*

2012, Paper 4B3-2, pp. 1-2, BEXCO, Busan, Korea, July 2-6, 2012

314. Z. Wang, W. Zhong, C. Yu, J. Chen, and W. Chen, "Performance of variable M-QAM OFDM visible light communication system with dimming control," *OptoElectronics and Communications Conference (OECC) 2012*, Paper 6B1-3, pp. 1-2, BEXCO, Busan, Korea, July 2-6, 2012
315. C. Yu, P.Y. Kam, S. Zhang and J. Chen, "Decision-aided carrier phase estimation for coherent optical communication systems," *Signal Processing in Photonics Communications Conference, OSA Advanced Photonics Congress (SPPCom) 2012*, Paper SpTh1B.1, pp. 1-2, Cheyenne Mountain Resort, Colorado Springs, CO, USA, June 19-21, 2012 (Invited)
316. C. Yu, "Dispersion monitoring in high-speed optical communication systems," *21<sup>st</sup> Wireless and Optical Communications Conference (WOCC) 2012*, pp. 16-19, Kaohsiung, Taiwan, April 19-21, 2012 (Invited)
317. C. Yu, P.Y. Kam, S. Zhang and J. Chen, "Phase estimation in coherent optical fiber communication systems with advanced modulation formats," *Conference on Optical Fiber Communication (OFC) 2012*, Paper OTu2G.7, pp. 1-3, Los Angeles, CA, USA, March 4-8, 2012 (Invited)
318. Z. Wang, C. Yu, W. Zhong, and J. Chen, "A novel LED arrangement to reduce SNR fluctuation for multi-user in visible light communication systems," *International Conference on Information, Communications and Signal Processing (ICICS) 2011*, Paper TM6, pp. 1-4, Singapore, December 13-16, 2011
319. Z. Wang, W. Zhong, and C. Yu, "Dynamic decision threshold and adaptive coherent detection in FSO communication system," *International Conference on Information, Communications and Signal Processing (ICICS) 2011*, Paper WA6, pp. 1-5, Singapore, December 13-16, 2011
320. C. Yu, J. Yang, J. Hu, and B. Zhang, "Chromatic dispersion monitoring based on RF spectrum analysis and delay-tap sampling," *10<sup>th</sup> International Conference on Optical Communications and Networks (ICOON) 2011*, Paper WE1, pp. 1-2, Guangzhou, China, December 5-7, 2011 (Invited)
321. J. Chen, C. Yu, Z. Wang, J. Shen, and Y. Li, "Indoor optical wireless integrated with white LED lighting: perspective & challenge," *10<sup>th</sup> International Conference on Optical Communications and Networks (ICOON) 2011*, Paper MO6, pp. 1-2, Guangzhou, China, December 5-7, 2011 (Invited)
322. C. Yu, J. Yang, J. Hu, and B. Zhang, "Optical performance monitoring in high-speed optical fiber communication systems," *International Photonics and OptoElectronics Meetings (POEM) 2011*, Paper OCSN-2, pp. 1-10, Wuhan, China, November 2-5, 2011 (Invited)
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