

Hsiang-Hua Jen

Personal data

Place of birth: Hualien, Taiwan, R.O.C.

Nationality: Taiwan, R.O.C.

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Google Scholar: <https://scholar.google.fr/citations?user=8QXa2W4AAAAJ&hl=en>;

ResearchGate: https://www.researchgate.net/profile/H_Jen

Academic Employment

Mar 2020 – present **Assistant research fellow**, IAMS, Academia Sinica, *Taiwan*

Aug 2017 – Feb 2020 **Assistant research scholar**, MOST and IOP, Academia Sinica, *Taiwan*

Aug 2014 – Jul 2017 **Postdoctoral researcher**, IOP, Academia Sinica, *Taiwan*

Aug 2013 – Jul 2014 **Postdoctoral researcher**, TU of Kaiserslautern, *Germany*

Mar 2011 – Jul 2013 **Postdoctoral researcher**, National Tsing Hua University, *Taiwan*

Research Areas

(I) Quantum optics:

- Photon-mediated dipole-dipole interactions; Chiral quantum optics; laser cooling; Non-Hermitian systems; Interpretable machine learning; Cooperative spontaneous emissions; Superradiant laser.

(II) Quantum information processing and Quantum communication:

- Quantum state engineering; multiphoton generation; Continuous frequency entanglement; Spectral shaping; Spectral compression; single photon source; Encoding/decoding nonorthogonal codes.

(III) Bose-Einstein condensate:

- Spin-1 and spin-2 Bose Einstein condensates; Spin-incoherent Luttinger liquid; $SU(\kappa)$ fermions.

(IV) Strongly interacting ultracold atoms:

- Non-Hermitian many-body localization; Hatano-Nelson model; Quantum optical probe of many-body systems using EIT; Single-particle Green's function extraction.

Education

Dec 2004 – Dec 2010 **Doctorate, Physics**, Georgia Institute of Technology

USA

Aug 2003 – Dec 2004 **MS, Physics**, Georgia Institute of Technology

USA

Jun 1996 – Jun 2000 **BS, Physics**, National Taiwan University

Taiwan

Award & Honor

- 2023 IOP trusted reviewer, in recognition of an exceptionally high level of peer review competency
- 2019 IOP Outstanding Reviewer for Journal of Physics B: Atomic, Molecular and Optical Physics
- Paper [Phys. Rev. A 95, 043840 (2017)] selected as Kaleidoscope in the issue of April 2017
- 2014 NCTS Best postdoc paper award, Taiwan (bonus: 10000 TWD)
- 2012 NSC (now MOST) Postdoc academic publication award, Taiwan (bonus: 100000 TWD)
- 1996 ROC national contest for Asian Pacific Mathematics Olympiad (40 contestants nationally)

Professional Activities & Experiences

- Core members in National Center of Theoretical Sciences, physics division TG1.2, Taiwan.
- Faculty member of Taiwan International Graduate Program (TIGP) in Academia Sinica-Molecular Science and Technology (MST) program; Mentor of 2022 first-year students of MST program.
- Reviewer of New J. of Phys., Physica B, Journal of Phys. B, Scientific Reports, Opt. Exp., Opt. Lett., Physica Scripta, J. of Opt. Soc. Am. B, J. of Phys. Comm., Chinese J. of Phys., Quantum information processing (Springer), Int. J. of Quantum Information, Int. J. Mod. Phys. B, The European Physical Journal Plus, Atoms, Photonic insights, Int. J. of Quant. Chem., IEEE Photonics Technology Letters.
- Co-organize 2022 NCTS Summer School on Frontier Topics in Strongly Correlated Electron Systems.
- Co-organized and session chair in NCTS Annual Theory Meeting 2021: Quantum Physics, Quantum Information, and Quantum Technologies.
- Co-organized “Workshop on the frontier studies of EIT and slow light” in NCTS on 9/24, 2012

Grant

(1) NSTC-112-2112-M-001-079-MY3 on a novel quantum interface with photon-mediated dipole-dipole interactions.

(2) MOST-111-2119-M-001-002; MOST-112-2119-M-001-007 (2022-2027), subproject in “Quantum Computing and Simulation with Neutral Atoms” under YC Chen (IAMS).

(3) MOST-109-2112-M-001-035-MY3 (2020-2023) on chirally-coupled quantum emitters.

(4) MOST-106-2112-M-001-005-MY3 (2017-2020) on subradiant state engineering.

Present Postdoc, RAs, and Students

Dr. Sumit Goswami November 2022–present (Postdoc in Dr. YC Chen's group & co-supervision)

Tzu-Hsuan Chang Research assistant April 2021–present; NTU Phys. Master student 2017–2019

Chung-Hsien Wang Research assistant July 2023–present; NTU Phys. Master student Feb 2022–June 2023; NTU College project 2021-2022

Chun-Chi Wu Research assistant June 2023–present

Chimdessa Gashu PhD student, TIGP MST program, Lab rotation, Sep 2022–present

I Gusti Ngurah Yudi PhD student, TIGP MST program, Lab rotation, Sep 2022–present

Tianshu Guo NTU Phys. Master student Sep 2023–present; NCHU College project Feb–June 2023

Shao-Hong Chung NTU Phys. Master student Aug 2023–present;

Cheng-Hsuan Chien NTU College project May 2023–present; IAMS summer intern 2023

Alumni

Rajdeep Tah NISER, Bhubaneswar, India. IAMS-IIP intern June–July 2023

Wei-Seng Hiew NTU Phys. Master student Sep 2021–June 2023 (IAMS-NTNU-YCU online workshop (best oral award); 2022 IAMS YF poster award); NTU College project 2020–2021

Nai-Yu Tsai NTU College project Oct 2020–June 2023; IAMS summer intern 2022; MOST college research grant 2022 (declined); 2022 TPS college paper award (**Stony Brook Univ.**)

Yi-Cheng Wang NTU Phys. Master student Sep 2020–July 2022 and research assistant to Jan 2023, May-June 2023 (Poster prize/Best presentation award/oral award in IAMS YF 2020/2021/2022; Oral award in 2022 Annual meeting of the Physical Society of Taiwan; First awardee of the Dean's award in department of physics of NTU 2022; 2022 IAMS-NTNU-YCU online workshop (presentation award); 2022 IAMS research publication award; 2022 TPS postgraduates student thesis award); 2023 NCTS student outstanding paper award; (**UC Berkeley**)

R. Ravisankar Postdoc, July 2022–February 2023

Kuldeep Suthar Postdoc, April 2021–January 2023 (Oral award in 2023 TPS meeting) (**Central Univ. of Rajasthan, India**)

Chun-Che Wang Research assistant Sep 2021 – Jun 2022 (**U. Pittsburg**)

Yu-En Wong Summer intern 2020; College project Sep 2020–June 2022 (**Rice U.**)

Yi-Chun Lin	NSYSU College project Oct 2021 – May 2022 (<u>NCKU</u>)
Chi-Chih Chen	RA Feb 2021– Mar 2022 (<u>Stony Brook Univ.</u>)
Chin-Yang Lin	RA July 2020–March 2021, June–September 2021 (<u>NTU</u>)
Yan-Wei Su	NCTU College summer intern 2020

Refereed Publication

56. Che-Wei Lee, Jin-Yang Lin, Jun-Ho Hsieh, Jerson Chen, Y. Oliver Chen, Huan-Cheng Chang, **Hsiang-Hua Jen**, and Ming-Shien Chang, “*Relaxation Dynamics of Solid-State Spins in a Single-Crystalline Nanodiamond*”, in preparation.
55. I G. N. Y. Handayana, S.-H Chung, I-L. Tsao, C.-C. Wu, and **H. H. Jen**, “*Steady-state phase diagram of a weakly driven dissimilar atomic arrays*”, in preparation.
54. I G. N. Y. Handayana, C.-C. Wu, S. Goswami, Y.-C. Chen, and **H. H. Jen**, “*Atomic excitation trapping in dissimilar chirally-coupled atomic arrays*”, in preparation.
53. C.-H. Wang, N.-Y. Tsai, Y.-C. Wang, and **H. H. Jen**, “*Light scattering properties beyond weak-field excitation in a few-atom system*”, in preparation.
52. Y.-C. Wang, **H. H. Jen**, and J.-S. You, “*Controlling localization and topology in non-Hermitian domain-wall systems*”, in preparation.
51. C.-H. Chien, S. Goswami, C.-C. Wu, W.-S. Hiew, Y.-C. Chen, and **H. H. Jen**, “*Generating graph states in an atom-nanophotonic interface*”, in preparation.
50. C.-C. Wu, K.-T Lin, I G. N. Y. Handayana, C.-H. Chien, S. Goswami, G.-D. Lin, Y.-C. Chen, and **H. H. Jen**, “*Atomic excitation delocalization at the clean to disorder interface in a chirally-coupled atomic array*”, in preparation.
49. Chimdessa Gashu Feyisa and **H. H. Jen**, “*A photonic engine fueled by quantum-correlated atoms*”, submitted.
48. T. H. Chang, T. N. Wang, **H. H. Jen**, and Y.-C. Chen, “*High-fidelity Rydberg control-Z gate with time-optimal pulses*”, submitted.
47. N.-Y. Tsai and **H. H. Jen**, “*Nonorthogonal coding in spectrally entangled biphotons*”, submitted.
46. W.-S. Hiew and **H. H. Jen**, “*State carving in a chirally-coupled atom-nanophotonic cavity*”, **New J. Phys.** 25, 093018 (2023).
45. Y.-C. Wang, **H. H. Jen**, and J.-S. You, “*Scaling laws for non-Hermitian skin effect with long-range*

- couplings*”, **Phys. Rev. B** 108, 085418 (2023).
44. Y.-C. Wang, K. Suthar, **H. H. Jen**, Y.-T. Hsu, and J.-S. You, “*Non-Hermitian skin effects on thermal and many-body localized phases*”, **Phys. Rev. B** 107, L220205 (2023).
43. C.-C. Chen, Y.-C. Wang, C.-C. Wang, and **H. H. Jen**, “*Chiral-coupling-assisted refrigeration in trapped ions*”, **J. Phys. B: At. Mol. Opt. Phys.** 56, 105502 (2023).
42. C.-H. Wang, Y.-C. Wang, C.-C. Chen, C.-C. Wang, **H. H. Jen**, “*Enhanced dark-state sideband cooling in trapped atoms via photon-mediated dipole-dipole interaction*”, **Phys. Rev. A** 107, 023117 (2023).
41. C.-C. Wang, Y.-C. Wang, C.-H. Wang, C.-C. Chen, and **H. H. Jen**, “*Superior dark-state cooling via nonreciprocal couplings in trapped atoms*”, **New J. of Phys.** 24, 113020 (2022).
40. K. Suthar, Y.-C. Wang, Y.-P. Huang, **H. H. Jen**, and J.-S. You, “*Non-Hermitian Many-Body Localization with Open Boundaries*”, **Phys. Rev. B.** 106, 064208 (2022).
39. Y.-C. Wang, J.-S. You, and **H. H. Jen**, “*A non-Hermitian optical atomic mirror*”, **Nature Communications** 13, 4598 (2022). ****[Highlights in IAMS, NTU, NTNU]**
38. **H. H. Jen**, G.-D. Lin, and Y.-C. Chen, “*Resonant dipole-dipole interactions in electromagnetically induced transparency*”, **Phys. Rev. A** 105, 063711 (2022).
37. Y.-E Wong, T. H. Chang, and **H. H. Jen**, “*Almost indistinguishable single photons via multiplexing cascaded biphotons with cavity modulation and phase compensation*”, **Phys. Rev. A** 105, 063706 (2022).
36. C. Y. Lin and **H. H. Jen**, “*Interpretational machine-learning identification of the crossover from subradiance to superradiance in an atomic array*”, **J. Phys. B: At. Mol. Opt. Phys.** 55, 135501 (2022).
35. **H. H. Jen**, “*Quantum correlations of localized atomic excitations in a disordered atomic chain*”, **Phys. Rev. A** 105, 023717 (2022).
34. Y.-E Wong, N.-Y. Tsai, W.-S. Hiew, and **H. H. Jen**, “*Spectral compression and entanglement reduction in the cascaded biphoton state with cavities*”, **J. Phys. B: At. Mol. Opt. Phys.** 54, 195501 (2021).
33. **H. H. Jen**, “*Bound and subradiant multi-atom excitations in an atomic array with nonreciprocal couplings*”, **Phys. Rev. A** 103, 063711 (2021).
32. **H. H. Jen** and J.-S. You, “*Crossover from a delocalized to localized atomic excitation in an atom-waveguide interface*”, **J. Phys. B: At. Mol. Opt. Phys.** 54, 105002 (2021).

31. **H. H. Jen**, “Disorder-assisted excitation localization in chirally coupled quantum emitters”, **Phys. Rev. A** 102, 043525 (2020).
- 30. H. H. Jen**, “Collective single excitation dynamics in a chirally coupled atomic chain”, **J. Phys. B: At. Mol. Opt. Phys.** 53, 205501 (2020). ****[after joining IAMS, Academia Sinica]**
29. T. H. Chang, G.-D. Lin, and **H. H. Jen**, “Spectral shaping of the biphoton state from multiplexed thermal atomic ensembles”, **J. Phys. B: At. Mol. Opt. Phys.** 53, 085403 (2020).
28. **H. H. Jen**, M.-S. Chang, G.-D. Lin, and Y.-C. Chen, “Subradiance dynamics in a singly excited chirally coupled atomic chain”, **Phys. Rev. A** 101, 023830 (2020).
27. **H. H. Jen**, “Steady-state phase diagram of a weakly driven chiral-coupled atomic chain”, **Phys. Rev. Research** 2, 013097 (2020).
26. **H. H. Jen**, “Super- and sub-radiance from two-dimensional resonant dipole-dipole interactions”, **Scientific Reports** 9, 5804 (2019).
25. T.-H. Chang, G.-D. Lin, and **H. H. Jen**, “Spectrally entangled biphoton state of cascade emissions from a Doppler-broadened atomic ensemble”, **J. Phys. B: At. Mol. Opt. Phys.** 52, 135501 (2019).
24. **H. H. Jen**, “Selective transport of atomic excitations in a driven chiral-coupled atomic chain”, **J. Phys. B: At. Mol. Opt. Phys.** 52, 065502 (2019).
23. **H. H. Jen**, and S.-K. Yip, “Spin-incoherent Luttinger liquid of one-dimensional $SU(\kappa)$ fermions”, **Phys. Rev. A** 98, 013623 (2018).
22. **H. H. Jen**, M.-S. Chang, and Y.-C. Chen, “Cooperative light scattering from helical-phase-imprinted atomic rings”, **Scientific Reports** 8, 9570 (2018).
21. **H. H. Jen**, “Directional subradiance from helical-phase-imprinted multiphoton states”, **Scientific Reports** 8, 7163 (2018).
20. **H. H. Jen**, “Phase-imprinted multiphoton subradiant states”, **Phys. Rev. A** 96, 023814 (2017).
19. **H. H. Jen**, and S.-K. Yip, “Spin-incoherent Luttinger liquid of one-dimensional spin-1 Tonks-Girardeau Bose gas: Spin-dependent properties”, **Phys. Rev. A** 95, 053631 (2017).
18. **H. H. Jen**, “Cascaded cold atomic ensembles in a diamond configuration as a spectrally entangled multiphoton source”, **Phys. Rev. A** 95, 043840 (2017). ****[selected as Kaleidoscope in PRA]**
17. **H. H. Jen**, “Superradiant laser: Effect of long-range dipole-dipole interaction”, **Phys. Rev. A** 94, 053813 (2016).
16. **H. H. Jen**, and S.-K. Yip, “Spin-incoherent one-dimensional spin-1 Bose Luttinger liquid”, **Phys. Rev.**

- A 94, 033601 (2016).
15. **H. H. Jen**, “Cooperative single-photon subradiant states in a three-dimensional atomic array”, **Annals of Physics** (N.Y.) 374, 27 (2016).
 14. **H. H. Jen**, M.-S. Chang, and Y.-C. Chen, “Cooperative single-photon subradiant states”, **Phys. Rev. A** 94, 013803 (2016).
 13. **H. H. Jen**, “Entropy of entanglement in continuous frequency space of the biphoton state from multiplexed cold atomic ensembles”, **J. Phys. B: At. Mol. Opt. Phys.** 49, 035503 (2016).
 12. **H. H. Jen**, Y.-C. Chen, “Spectral shaping in cascade emissions from multiplexed cold atomic ensembles”, **Phys. Rev. A** 93, 013811 (2016).
 11. **H. H. Jen**, “Superradiant cascade emission in an atomic ensemble via four-wave-mixing”, **Annals of Physics** (N.Y.) 360, 556 (2015)
 10. **H. H. Jen** and S.-K. Yip, “Fragmented many-body states of a spin-2 Bose gas”, **Phys. Rev. A** 91, 063603 (2015).
 9. **H. H. Jen** and Daw-Wei Wang, “Extracting dynamical Green's function of ultracold quantum gases via electromagnetically induced transparency,” **J. Opt. Soc. Am. B (JOSAB)** Vol. 31, 2931 (2014).
 8. Bo Xiong, **H. H. Jen**, and Daw-Wei Wang, “Topological superfluidity by blockade effects in a Rydberg-dressed Fermi gas”, **Phys. Rev. A** 90, 013631 (2014)
 7. **H. H. Jen** and Daw-Wei Wang, “Theory of Electromagnetically induced transparency in strongly correlated quantum gases”, **Phys. Rev. A** 87, 061802 (R) (2013). ****[2014 NCTS best postdoc paper award, Taiwan]**
 6. **H. H. Jen**, Bo Xiong, Ite A. Yu, and Daw-Wei Wang, “Electromagnetically induced transparency and slow light in interacting quantum degenerate atomic gas”, **JOSA B** Vol. 30, pp. 2855 (2013).
 5. **H. H. Jen**, “Spectral analysis for cascade-emission-based quantum communication in atomic ensembles”, **J. Phys. B: At. Mol. Opt. Phys.** 45, 165504 (2012).
 4. **H. H. Jen**, “Positive-P phase space method simulation of superradiant emission from a cascade atomic ensemble”, **Phys. Rev. A** 85, 013835 (2012). ****[2012 NSC (MOST) postdoc publication award]**
 3. A. G. Radnaev, Y. O. Dudin, R. Zhao, **H. H. Jen**, S. D. Jenkins, A. Kuzmich, and T. A. B. Kennedy, “A quantum memory with telecom wavelength conversion”, **Nature Physics** 6, 894 (2010).
 2. **H. H. Jen** and T. A. B. Kennedy, “Efficiency of light-frequency conversion in an atomic ensemble”, **Phys. Rev. A** 82, 023815 (2010).

1. P. Zhang, **H. H. Jen**, C. P. Sun, and L. You, “*Angular momentum of a magnetically trapped atomic condensate*”, **Phys. Rev. Lett.** 98, 030403 (2007).

Book & Other Publications

1. **Hsiang-Hua Jen**, “*Collective light emission: Many quantum emitters*”, Online ISBN: 978-0-7503-2699-5 • Print ISBN: 978-0-7503-2697-1, IOP publishing (October 2020).
2. **Hsiang-Hua Jen**, research reports in MOST Natural Science Newsletter 32, issue 3 (2020).
3. **Hsiang-Hua Jen**, research reports in MOST Natural Science Newsletter 30, issue 3 (2018).
4. A. G. Radnaev, *et al.*, “*Cold atom quantum memories and the telecom interface*,” Photonics society summer topical meeting series, 2011 IEEE, 27-28, 18-20 July 2011.
5. **Hsiang-Hua Jen**, PhD thesis, [arXiv:1106.2082](https://arxiv.org/abs/1106.2082).
6. S.D. Jenkins, *et al.*, *CLEO/Europe and IQEC 2007 Conference Digest*, (OSA, 2007), paper IF 1_4.

Presentation & Lecture

1. ****Invited lecture** in 2023 AMO summer school on 25 August.
2. ****Invited speaker** in 2023 Workshop on Quantum Science and Technology (QST), 4-7 July.
3. Poster and oral in 2023 Damop meeting, Spokane, USA.
4. ****Invited talk** in CQSE-NCTS seminar at NTU in May 12 2023.
5. ****Invited talk** in seminar at NCCU Physics department in May 3rd 2023.
6. ****Invited talk** in the AMO session and NCTS session of TPS annual meeting, 16-18 January 2023.
7. QIS seminar at NCKU, 12 December 2022.
8. ****Invited presentation** in the 2022 NCTS Physics Forum and Annual Meeting, November 18 2022.
9. ****Invited speaker** in the workshop on Quantum science and technology of NCTS, 25-27 August 2022.
10. ****Invited speaker** in 15th Asia Pacific Physics Conference (APPC15), Korea, 21-26 August 2022.
11. Six poster abstracts in ICAP virtual meeting, Canada, July 2022.
12. Two posters in Annual TPS meeting, Taiwan, January 2022.
13. Online seminar talk in Physics Department NSYSU, Taiwan, 21st Oct, 2021.
14. Online seminar talk in Physics Department NTHU, Taiwan, 26th May, 2021.
15. Seminar talk in Physics Department NTU, Taiwan, 12nd May, 2021.
16. Seminar talk in Physics Department NTNU, Taiwan, 10th March, 2021.
17. Seminar talk in Physics Department NTHU, Taiwan, 30th November, 2020.
18. Two posters in IAMS young fellow workshop 2020. Master student Y.-C. Wang won the poster prize.
19. ****Invited lecture** in AMO summer school 2020.
20. CQSE seminar, NTU, 6th March 2020.

21. **Invited research abroad** in OIST (Group of Prof. Chormaic), Okinawa, Japan, from 21st-25th October 2019.
22. ****Invited talk** for faculty interview in NSYSU, Taiwan, 1st August 2019.
23. “*Spectral shaping of biphoton state via multiplexing thermal ensembles*”, T. H. Zhang, G.-D. Lin, and H. H. Jen, poster in DAMOP 2019, USA.
24. ****Invited talk** for faculty interview in IAMS, Academia Sinica, Taiwan, 19th March 2019.
25. ****Invited talk** for faculty interview in CCU, Taiwan, 27th February 2019.
26. ****Invited talk** for faculty interview in NCTU, Taiwan, 21st February 2019.
27. “*Spectrally entangled two-photon state of cascade emissions from Doppler-broadened atomic ensemble*”, T. H. Zhang, G.-D. Lin, and H. H. Jen, poster in annual meeting of PS Taiwan, 2019.
28. ****Invited talk** for faculty interview in THU, Taiwan, 8th January 2019.
29. Seminar talk in Phys. Department NSYSU, Taiwan, 6th December 2018.
30. ****Invited presentation** for faculty interview in NCKU, Taiwan, 8th November 2018.
31. Seminar talk in Phys. Department NTHU 15th October 2018.
32. Seminar talk in NTU CQSE 14th September 2018.
33. ****Invited lecture** in AMO summer school, 29th August 2018.
34. Three posters of (a) Spectral entanglement of Doppler-broadened atoms, (b) Cooperative light scattering in atomic rings, and (c) Spin-incoherent Luttinger liquid, in APS DAMOP 2018 in Florida.
35. “*Spectrally entangled multiphoton source from cascaded and multiplexed cold atomic ensemble*,” T. H. Zhang and H. H. Jen, poster in annual meeting of the Physical Society of Taiwan, 2018.
36. ****Invited talk** for faculty interview in NCU, Taiwan, 26th December 2017.
37. “*Spin-incoherent Luttinger liquid of one-dimensional spin-1 Bose gas*,” poster session in Hong Kong, Croucher conference in frontiers of atomic physics 2017.
38. “*Effect of resonant dipole-dipole interaction in EIT and Slow light Experiments*,” Y.-C. Chen and H. H. Jen, NCTS seminar, Hsinchu, 30th June 2017.
39. One oral of “*Spin-incoherent Luttinger liquid*,” and one poster of “*Cooperative spontaneous emissions*” in APS DAMOP 2017 in USA.
40. ****Invited talk** for faculty interview in NCKU, Tainan, 2nd March 2017.
41. ****Invited talk** for faculty interview in CCU, Chiayi, 22nd February 2017.
42. “*Coherent scattering of near-resonant light by optically dense cold atomic cloud*”, S.-X. Lin, H. H. Jen, and Y.-C. Chen, poster in 2017 Annual Meeting of the Physical Society of ROC.
43. “*Cooperative single-photon subradiant states*”, poster in ICAP 2016, Seoul, Korea.
44. ****Invited talk** for faculty interview in IAMS, Taipei, 22nd July 2016.
45. Two posters of “*spin-1 Bose gas*” and “*Entropy of entanglement of the biphoton state from multiplexed cold atomic ensembles*”, in APS Damop 2016, Providence, Rhode Island, USA.
46. “*Cooperative single-photon subradiant states*”, colloquium in NCKU, 31st March 2016.
47. ****Invited talk** for faculty interview in TKU, Taipei, 22nd March 2016.
48. ****Invited talk** for faculty interview in NYSU, Kaohsiung, 16th March, 2016.

49. “*Cooperative single-photon subradiant states*”, ECP meeting in NCTS, Hsinchu, 24th Feb. 2016.
50. ****Invited talk** in Annual Meeting 2015: Condensed Matter Physics, in NCTS, 17th December.
51. “*Superradiant cascade emissions and spectral shaping from multiplexed cold atomic ensembles*,” workshop on atom-photon interactions with Rydberg atom, superradiance, and EIT. NCTS 2015.
52. CQSE seminar, NTU, 18th September 2015.
53. “*Fragmented many-body states of a spin-2 Bose gas*”, poster in Damop 2015, Columbus, Ohio, USA.
54. ****Invited talk** for faculty interview, National Kaohsiung Normal University, Taiwan, May 14th, 2015
55. AMO seminar, IAMS Academia Sinica, Taiwan, 9th March 2015.
56. ****Invited talk** for faculty interview, National Kaohsiung Normal University, Taiwan, Dec. 18th, 2014
57. “*Bulk phases and topological edge state in the extended 1D superlattice Bose-Hubbard model*,” H. H. Jen, in conference “Topological aspects of quantum matter”, Hsinchu, 11th Dec. 2014.
58. **NCTS best postdoc paper award presentation**, Taiwan, 26th September 2014.
59. IAMS seminar, Academia Sinica, Taiwan, 16th April 2014.
60. Seminar, Tamkang University, Taiwan, 15th April 2014.
61. Seminar, National Dong Hwa University, Taiwan, 14th April 2014.
62. “*Bulk phases and topological edge state in the extended 1D superlattice Bose-Hubbard model*,” H. H. Jen and M. Höning, F. Grusdt, M. Fleischhauer, DPG Berlin 2014, Germany.
63. ****Invited talk** for faculty interview, National Central University, Taiwan, February 19th 2014.
64. Seminar, Chung Cheng University, Taiwan, 3rd January 2014.
65. Seminar, National Sun Yat-Sen University, Taiwan, 2nd January 2014.
66. Poster in Damop 2013, Quebec, Canada.
67. AMO seminar, IAMS Academia Sinica, Taiwan, 22nd October 2012.
68. One oral of “*Superradiant emission from a cascade atomic ensemble*” and one poster of “*Long distance quantum communication using cascade emission*” in APS DAMOP 2012, Ca., USA.
69. Poster in 2012 Annual Meeting of the Physical Society of ROC.
70. Condensed matter seminar, National Taiwan Normal University, Taiwan, 10th November 2011.
71. Seminar, National Taiwan University, Taiwan, 27th September 2011.
72. ****Invited lecture** in AMO summer school 2011, NCKU, Tainan, Taiwan.
73. QIS seminar, National Cheng Kung University, 2nd May 2011.
74. AMO seminar, National Tsing Hua University, Taiwan, 7th March 2011.
75. Poster of “*Efficiency of light-frequency conversion*,” in OCPA7 2011, Kaohsiung, Taiwan, ROC.
76. “*Superradiant cascade emission*,” H. H. Jen, S. D. Jenkins and T. A. B. Kennedy, DAMOP 2009, USA.
77. Poster in APS DAMOP 2007, Calgary, Canada.
78. Poster in APS DAMOP 2006, Tennessee, USA.