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RESEARCH INTERESTS

- Metamaterials, plasmonics & nanophotonics
- Terahertz science and technology
- Scanning near-field microscopy

EDUCATION & TRAINING

• Postdoc	2005 – 2008	Materials	Los Alamos National Laboratory
• Ph.D.	2000 – 2004	Physics	Rensselaer Polytechnic Institute
• M.S.	1997 – 2000	Condensed Matter Physics	University of Science & Technology of China
• B.S.	1993 – 1997	Applied Physics	University of Science & Technology of China

APPOINTMENTS

• 2015 – present	Technical Staff Member (Scientist 4)	Los Alamos National Laboratory
• 2011 – 2015	Technical Staff Member (Scientist 3)	Los Alamos National Laboratory
• 2008 – 2011	Technical Staff Member (Scientist 2)	Los Alamos National Laboratory

AWARDS AND HONORS

- Fellow (2018), Optical Society (OSA)
- Outstanding Reviewer (2017), *Light: Science & Applications*
- Fellow (2015), American Physical Society (APS)
- Fellows' Prize for Outstanding Research (2015), Los Alamos National Laboratory
- LAAP Achievement Award (2007, 2013, 2016), Los Alamos National Laboratory
- Postdoctoral Publication Prize Honorable Mention (2007), Los Alamos National Laboratory

PROFESSIONAL ACTIVITIES

- Editorial:
  - Topical Editor, *Optics Letters* (since 01/2017)
  - Guest Editor, Ultrafast Phenomena and Terahertz Waves feature issue, *JOSA B*, 2019
  - Editorial Board Member, *Scientific Reports* (05/2014–05/2017)
- Conference Chair / Co-Chair, Symposium or Session Organizer:
  - Focus Topic Lead, APS March Meeting 2020, "Nanostructures and Metamaterials", Denver, CO, 2020
  - Chair, The 8th International Conference on Optical Terahertz Science and Technology (OTST 2019), Santa Fe, NM, 2019
  - Session Organizer, SPIE Image Sensing Technologies: Materials, Devices, Systems, and Applications V, Session "THz sensing and imaging", Orlando, FL, 2018
  - Session Organizer, OSA Advanced Photonics Congress Session "THz Sensing", New Orleans, LA, 2017; Zürich, Switzerland, 2018.
  - Symposium Organizer, MRS Spring Meeting Symposium "Frontiers in Terahertz Materials and Technology", Phoenix, AZ, 2017
- Organizing Committee:
  - THz Sensing in OSA SENSORS Meeting (Boston, MA, 2015)

  - International Workshop on Electromagnetic Metamaterials (IV, Albuquerque, NM, 2010; V, Albuquerque, NM, 2012; VI, Santa Fe, NM, 2014)
  - International Workshop on Metamaterials (Nanjing, China, 2012)
- Technical Program Committee:
  - Nanophotonics and Micro/Nano Optics International Conference (NANOP) (Munich, Germany, 2019; Paris, France, 2020)
  - SPIE/COS Photonics Asia – Infrared, Millimeter-Wave, and Terahertz Technologies (Beijing, China, 2012, 2014, 2016, 2018)
  - ACM NanoCOM (Washington, DC, 2017)
  - OTST (London, UK, 2017; San Diego, CA, 2015)
  - IRMMW-THz (Hong Kong, China, 2015; Copenhagen, Denmark, 2016; Cancun, Mexico, 2017; Nagoya, Japan, 2018)
  - NANOMETA (Seefeld, Austria, 2017)
- Reviewer:
  - Numerous governmental funding agencies in US and abroad: NSF Panelist (2013, 2015, 2016); Austrian Science Fund (2016); European Research Council (2016); Army Research Office (2016); Research Grants Council (RGC) of Hong Kong (2013-2016, 2019); Center for Nanoscale Materials (CNM), ANL (2014–2016); DOE BES (2015, 2018); DOE Early Career (2017–2019); DOE SBIR (2019); German Research Foundation (2015); Israel Ministry of Science, Technology & Space (2017, 2018); LANL internal LDRD-ER Committee (EPM, 2013-2015, 2017, 2018; QOS, 2011, 2012)
  - Regular reviewer for prestigious scientific journals

MAJOR RESEARCH PROJECTS

- 10/2019 – 09/2022 PI "Broadband Terahertz Circular Dichroism Spectroscopy"
  $0.92M, LANL/LDRD Program
- 10/2017 – 09/2020 PI "Breaking the efficiency limits in quantum dot emitters using dual-band metamaterials"
  $0.9M, LANL/LDRD Program
- 10/2017 – 09/2020 Co-I "Dominating the electromagnetic spectrum with spatio-temporal modulated metasurfaces"
  $5M, LANL/LDRD Program
- 10/2014 – 09/2017 PI "Meso-photonic materials for tailored light-matter interactions"
  $5.4M, LANL/LDRD Program
- 04/2015 – 12/2015 PI "Ultra light and extremely compact metamaterial lens antenna"
  $400K, NRO DII Program
- 10/2013 – 09/2014 PI "Meso-photonic materials"
  $400K, LANL/LDRD Program
- 10/2010 – 09/2013 PI "Harnessing nonlinearity for transformative metamaterial technology"
  $5.4M, LANL/LDRD Program
- 10/2009 – 09/2011 PI "Metamaterial based phase shifting and beam steering devices"
  $400K, National Nanotechnology Enterprise Development Center (NNEDC)
- 10/2008 – 09/2011 Co-I "Novel high performance THz metamaterial photonic devices"
  $1M, LANL/LDRD Program

PATENTS

- 07/2019 "Reflective metasurfaces for broadband terahertz linear-to-circular polarization conversion and circular dichroism spectroscopy"
  Application No. 16/504,026
- 09/2014 "Dynamical frequency tuning of electric and magnetic metamaterial response"
  US Patent No. 8,836,439
- 11/2010 "Active terahertz metamaterial devices"
  US Patent No. 7,826,504

POSTDOCS, VISITING SCHOLAR & STUDENTS SUPERVISED

Dr. Teng Shi (Current PD, LANL)
Dr. Shai Vardeny (Unknown)
Dr. Precious Cantú (Unknown)
Mr. Andrew Cardin (Graduate Student, Duke University)
Dr. Dongfang Li (Current PD, LANL)
Ms. Honora Driscoll (Summer Undergraduate Student, University College London)
Mr. Chih-Feng Wang (Graduate Student, University of New Mexico, now Postdoc, PNNL)
Dr. Sinhara Silva (Current PD, LANL)
Mr. Conrad Corbella Bagot (Visiting Undergraduate Student, now Graduate Student, UC Boulder)
Dr. Zhiqin Huang (Visiting Graduate Student, Duke University)
Dr. Chun-Chieh Chang (PD, now National Taiwan Normal University)
Mr. Andrew Tang (Summer Undergraduate Student, UCLA)
Dr. Beibei Zeng (PD, now Optical Scientist, Corning Inc.)
Miss Jane Heyes (Postmaster Intern and Technologist, now Graduate Student, MIT)
Dr. Nathaniel Grady (PD, now R&D Optical Engineer, Sandia National Laboratories)
Dr. Li Huang (Visiting Scholar, Associate Professor, Harbin Institute of Technology, China)
Dr. Ranjan Singh (PD, now Associate Professor, Nanyang Technological University, Singapore)
Dr. Jiangfeng Zhou (PD, now Associate Professor, South Florida University)

PUBLICATIONS

Web of Science citations $> 10,000$, H-index 40
Google Scholar citations $> 14,400$, H-index 46

97. S. R. Silva, C. Corbella, A. D. Tang, P. Nath, A. K. Azad, and **H.-T. Chen**, "Microwave Metasurface-Based Alvarez Lens," *Applied Physics Letters*, submitted (2020).

96. S. Misra, D. Zhang, Z. Qi, D. Li, J. Lu, **H.-T. Chen**, and H. Wang, "Morphology control of self-assembled three-phase Au-$BaTiO_3$-ZnO hybrid metamaterial for tunable optical properties," *Crystal Growth & Design* **20**(9), 6101-6108 (2020). Link

95. J. Huang, X. Wang, D. Li, T. Jin, P. Lu, D. Zhang, P. Lu, P.-T. Lin, **H.-T. Chen**, J. Narayan, X. Zhang, and H. Wang, "3D hybrid plasmonic framework with Au nanopillars embedded in nitride multilayers integrated on Si," *Advanced Materials Interfaces* **7**(17), 2000493 (2020). Link

94. J. Huang, H. Wang, D. Li, Z. Qi, D. Zhang, P. Lu, **H.-T. Chen**, D. A. Yarotski, P.-T. Lin, X. Zhang, and H. Wang, "Room-temperature ferroelectric $LiNb_6Ba_5Ti_4O_30$ spinel phase in a nanocomposite thin film form for nonlinear photonics," *ACS Applied Materials & Interfaces* **12**, 23076–23083 (2020). Link

93. A. E. Cardin, S. R. Silva, S. R. Vardeny, W. J. Padilla, A. Saxena, A. J. Taylor, W. J. M. Kort-Kamp, **H.-T. Chen**, D. A. R. Dalvit, and A. K. Azad, "Surface-wave-assisted nonreciprocity in spatio-temporally modulated metasurfaces," *Nature Communications* **11**, 1469 (2020). Link

92. J. Zhang, X. Wei, I. D. Rukhlenko, **H.-T. Chen**, and W. Zhu, "Electrically tunable metasurface with independent frequency and amplitude modulations," *ACS Photonics* **7**(1), 265–271 (2020). Link

91. S. R. Silva, A. Rahman, W. M. Kort-Kamp, J. J. Rushton, J. Singleton, A. J. Taylor, D. A. R. Dalvit, **H.-T. Chen**, and A. K. Azad, "Metasurface-based ultra-lightweight high-gain off-axis flat parabolic reflectarray for microwave beam collimation/focusing," *Scientific Reports* **9**, 18984 (2019). Link

90. C.-C. Chang, Z. Zhao, D. Li, A. J. Taylor, S. Fan, and **H.-T. Chen**, "Broadband linear-to-circular polarization conversion enabled by birefringent off-resonance reflective metasurfaces," *Physical Review Letters* **123**(23), 237401 (2019). Link

89. C.-C. Chang, J. Nogan, Z.-P. Yang, W. J. M. Kort-Kamp, W. Ross, T. S. Luk, D. A. R. Dalvit, A. K. Azad, and **H.-T. Chen**, "Highly plasmonic titanium nitride by room-temperature sputtering," *Scientific Reports* **9**, 15287 (2019). Link

88. C.-F. Wang, T. G. Habteyes, T. S. Luk, J. F. Klem, I. Brener, **H.-T. Chen**, and O. Mitrofanov, "Observation of intersubband polaritons in a single nanoantenna using nano-FTIR spectroscopy," *Nano Letters* **19**(7), 4620–4626 (2019). Link

87. J. Guo, T. Wang, H. Zhao, X. Wang, S. Feng, P. Han, W. Sun, J. Ye, G. Situ, **H.-T. Chen**, and Y. Zhang, "Reconfigurable terahertz metasurface pure phase holograms," *Advanced Optical Materials* **7**, 1801696 (2019). Link

86. X. Wang, J. Jian, Z. Zhou, C. Fan, Y. Dai, L. Li, J. Huang, J. Sun, A. Donohue, P. Bermel, X. Zhang, **H.-T. Chen**, and H. Wang, "Self-assembled Ag-TiN hybrid plasmonic metamaterial: Tailorable tilted nanopillars and optical properties," *Advanced Optical Materials* **7**(3), 1801180 (2019). Link

85. W. Xu, L. Xie, J. Zhu, L. Tang, R. Singh, C. Wang, Y. Ma, **H.-T. Chen**, Y. Ying, "Terahertz biosensing with a graphene-metamaterial heterostructure platform," *Carbon* **141**, 247–252 (2019). Link

84. S. Misra, L. Li, D. Zhang, J. Jian, Z. Qi, M. Fan, **H.-T. Chen**, X. Zhang, and H. Wang, "Self-assembled ordered three-phase $AuBaTiO_3$–ZnO vertically aligned nanocomposites achieved by a templating method," *Advanced Materials* **31**, 1806529 (2019). Link

83. C.-C. Chang, W. J. M. Kort-Kamp, J. Nogan, T. S. Luk, A. K. Azad, A. J. Taylor, D. A. R. Dalvit, M. Sykora, and **H.-T. Chen**, "High-temperature refractory metasurfaces for solar thermophotovoltaic energy harvesting," *Nano Letters* **18**(12), 7665–7673 (2018). Link

82. B. Zeng, Z. Huang, A. Singh, Y. Yao, A. K. Azad, A. D. Mohite, A. J. Taylor, D. R. Smith, and **H.-T. Chen**, "Graphene metasurface devices for high-speed mid-infrared spatial light modulation and imaging," *Light: Science & Applications* **7**, 51 (2018). Link

81. J. Huang, T. Jin, S. Misra, H. Wang, Z. Qi, Y. Dai, X. Sun, L. Li, J. Okkema, **H.-T. Chen**, P.-T. Lin, X. Zhang, and H. Wang, "Tailorable optical response of Au-$LiNbO_3$ hybrid metamaterial thin films for optical waveguide applications," *Advanced Optical Materials* **6**(19), 1800510 (2018). Link

80. J. Huang, X. Wang, N. L. Hogan, S. Wu, P. Lu, Z. Fan, Y. Dai, B. Zeng, R. Starko-Bowes, J. Jian, H. Wang, L. Li, R. P. Prasankumar, D. Yarotski, M. Sheldon, **H.-T. Chen**, Z. Jacob, X. Zhang, and H. Wang, "Nanoscale artificial plasmonic lattice in self-assembled vertically aligned nitride-metal hybrid metamaterials," *Advanced Science* **5**(7), 1800416 (2018). Link

79. C.-C. Chang, L. Huang, J. Nogan, and **H.-T. Chen**, "Narrowband terahertz bandpass filters employing stacked bilayer metasurface antireflection structures," *APL Photonics* **3**(5), 051602 (2018). Link

78. C. Kadlec, V. Skoromets, F. Kadlec, H. Němec, **H.-T. Chen**, V. Jurka, K. Hruška, and P. Kužel, "Electric-field tuning of a planar terahertz metamaterial based on strained $SrTiO_3$," *Journal of Physics D: Applied Physics* **51**(5), 054001 (2018). Link

77. N. Karl, M. S. Heimbeck, H. O. Everitt, **H.-T. Chen**, A. J. Taylor, I. Brener, A. Benz, J. L. Reno, R. Mendis, and D. M. Mittleman, "Characterization of an active metasurface using terahertz ellipsometry," *Applied Physics Letters* **111**(19), 191101 (2017). Link

76. C. Li, C.-C. Chang, Q. Zhou, C. Zhang, and **H.-T. Chen**, "Resonance coupling and polarization conversion in terahertz metasurfaces with twisted split-ring resonator pairs," *Optics Express* **25**(21), 25842–25852 (2017). Link

75. W. Li, Q. He, L. Wang, H. Zeng, J. Bowlan, L. Ling, D. A. Yarotski, W. Zhang, R. Zhao, J. Dai, J. Gu, S. Shen, H. Guo, L. Pi, H. Wang, Y. Wang, I. A. Velasco-Davalos, Y. Wu, Z. Hu, B. Chen, R.-W. Li, Y. Sun, K. Jin, Y. Zhang, **H.-T. Chen**, S. Ju, A. Ruediger, D. Shi, A. Y. Borisevich, and H. Yang, "Manipulating multiple order parameters via oxygen vacancies: The case of $Eu_{0.5}Ba_{0.5}TiO_{3-\delta}$," *Physical Review B* **96**(11), 115105 (2017). Link

74. L. Huang, C.-C. Chang, B. Zeng, J. Nogan, S.-N. Luo, A. J. Taylor, A. K. Azad, and **H.-T. Chen**, "Bilayer metasurfaces for dual and broadband optical antireflection," *ACS Photonics* **4**(9), 2111–2116 (2017). Link

73. G. R. Keiser, N. Karl, C. Tulloss, **H. T. Chen**, A. J. Taylor, I. Brener, A. Benz, J. L. Reno, and D. M. Mittleman, "Nonlinear terahertz metamaterials with active electrical control," *Applied Physics Letters* **111**(12), 121101 (2017). Link

72. Z. Liu, Z. Li, Z. Liu, H. Cheng, W. Liu, C. Tang, C. Gu, J. Li, **H.-T. Chen**, S. Chen, and J. Tian, "Single-layer plasmonic metasurface half-wave plates with wavelength-independent polarization conversion angle," *ACS Photonics* **4**(8), 2061–2069 (2017). Link

71. A. K. Azad, A. V. Efimov, S. Ghosh, J. Singleton, A. J. Taylor, and **H.-T. Chen**, "Ultra-thin metasurface microwave flat lens for broadband applications," *Applied Physics Letters* **110**(22), 224101 (2017). Link

70. C.-C. Chang, D. Headland, D. Abbott, W. Withayachumnankul, and **H.-T. Chen**, "Demonstration of a highly efficient terahertz flat lens employing tri-layer metasurfaces," *Optics Letters 42*(9), 1867–1870 (2017). Link

69. S.-Z. Lin and **H.-T. Chen**, "Intrinsic left-handed electromagnetic properties in anisotropic superconductors," *Applied Physics Letters* **110**(17), 172602 (2017). Link

68. I.-S. Yu, H.-E. Cheng, C.-C. Chang, Y.-W. Lin, **H.-T. Chen**, Y.-C. Wang, and Z.-P. Yang, "Substrate-insensitive atomic layer deposition of plasmonic titanium nitride films," *Optical Materials Express* **7**(3), 777–784 (2017). Link

67. **H.-T. Chen**, A. J. Taylor, and N. Yu, "A review of metasurfaces: physics and applications," *Reports on Progress in Physics* **79**(7), 076401 (2016). Link

66. L. Huang, B. Zeng, C.-C. Chang, and **H.-T. Chen**, "Terahertz antireflection coating enabled by a subwavelength metallic mesh capped with a thin dielectric film," *Terahertz Science and Technology* **9**(1), 1–9 (2016). Link

65. Azad, A. K., W. J. M. Kort-Kamp, M. Sykora, N. R. Weisse-Bernstein, T. S. Luk, A. J. Taylor, D. A. R. Dalvit, and **H.-T. Chen**, "Metasurface broadband solar absorber," *Scientific Reports* **6**, 20347 (2016). Link

64. Y. Zhang, T. Li, Q. Chen, H. Zhang, J. F. O'Hara, E. Abele, A. J. Taylor, **H.-T. Chen**, and A. K. Azad, "Independently tunable dual-band perfect absorber based on graphene at mid-infrared frequencies," *Scientific Reports* **5**, 18463 (2015). Link

63. L. Liang, M. Qi, J. Yang, X. Shen, J. Zhai, W. Xu, B. Jin, W. Liu, Y. Feng, C. Zhang, H. Lu, **H.-T. Chen**, L. Kang, W. Xu, J. Chen, T. J. Cui, P. Wu, and S. Liu, "Anomalous terahertz reflection

and scattering by flexible and conformal coding metamaterials," *Advanced Optical Materials* **3**(10), 1374–1380 (2015). Link

62. J. Li, S. Chen, H. Yang, J. Li, P. Yu, H. Cheng, C. Gu, **H.-T. Chen**, and J. Tian, "Simultaneous control of light polarization and phase distributions using plasmonic metasurfaces," *Advanced Functional Materials* **25**(5), 704–710 (2015). Link

61. **H.-T. Chen**, "Semiconductor activated terahertz metamaterials," *Frontiers of Optoelectronics* **8**(1), 27–43 (2015). Link

60. B. Zhang, J. Hendrickson, N. N. Esfahani, **H.-T. Chen**, and J. Guo, "Metasurface optical antireflection coating," *Applied Physics Letters* **105**(24), 241113 (2014). Link

59. J. E. Heyes, W. Withayachumnankul, N. K. Grady, D. Roy Chowdhury, A. K. Azad, and **H.-T. Chen**, "Hybrid metasurface for ultra-broadband terahertz modulation," *Applied Physics Letters* **105**(18), 181108 (2014). Link

58. N. Karl, K. Reichel, **H.-T. Chen**, A. J. Taylor, I. Brener, A. Benz, J. L. Reno, R. Mendis, and D. M. Mittleman, "An electrically driven terahertz metamaterial diffractive modulator with more than 20 dB of dynamic range," *Applied Physics Letters* **104**(9), 091115 (2014). Link

57. N. K. Grady, B. G. Perkins Jr., H. Y. Hwang, N. C. Brandt, D. Torchinsky, R. Singh, L. Yan, D. Trugman, S. A. Trugman, Q. X. Jia, A. J. Taylor, K. A. Nelson, and **H.-T. Chen**, "Nonlinear high-temperature superconducting terahertz metamaterials," *New Journal of Physics* **15**, 105016 (2013). Link

56. R. Singh, D. Roy Chowdhury, J. Xiong, H. Yang, A. K. Azad, A. J. Taylor, Q. X. Jia, and **H.-T. Chen**, "Influence of film thickness in THz active metamaterial devices: A comparison between superconductor and metal split-ring resonators," *Applied Physics Letters* **103**(6), 061117 (2013). Link

55. N. K. Grady, J. E. Heyes, D. Roy Chowdhury, Y. Zeng, M. T. Reiten, A. K. Azad, A. J. Taylor, D. A. R. Dalvit, and **H.-T. Chen**, "Terahertz metamaterials for linear polarization conversion and anomalous refraction," *Science* **340**(6138), 1304–1307 (2013). Link

54. T. S. Luk, I. Kim, S. Campione, S. W. Howell, G. S. Subramania, R. K. Grubbs, I. Brener, **H.-T. Chen**, S. Fan, and M. B. Sinclair, "Near-infrared surface plasmon polariton dispersion control with hyperbolic metamaterials," *Optics Express* **21**(9), 11107–11114 (2013). Link

53. L. Huang and **H.-T. Chen**, "A Brief review on terahertz metamaterial perfect absorbers," *International Jounal of Terahertz Science and Technology* **6**(1), 26–39 (2013). Link

52. Y. Zeng, **H.-T. Chen**, and D. A. R. Dalvit, "The role of magnetic dipoles and non-zero-order Bragg waves in metamaterial perfect absorbers," *Optics Express* **21**(3), 3540–3546 (2013). Link

51. A. K. Azad, J. F. O'Hara, R. Singh, **H.-T. Chen**, and A. J. Taylor, "A review of terahertz plasmonics in subwavelength holes on conducting films," *IEEE Journal of Selected Topics in Quantum Electronics* **19**(1), 8400416 (2013). Link

50. B. S. Alexandrov, M. L. Phipps, L. B. Alexandrov, L. G. Booshehri, A. Erat, J. Zabolotny, C. H. Mielke, **H.-T. Chen**, G. Rodriguez, K. Ø. Rasmussen, J. S. Martinez, A. R. Bishop and A. Usheva, "Specificity and heterogeneity of terahertz radiation effect on gene expression in mouse mesenchymal stem cells," *Scientific Reports* **3**, 1184 (2013). Link

49. D. Roy Chowdhury, R. Singh, A. J. Taylor, **H.-T. Chen**, and A. K. Azad, "Ultrafast manipulation of near field coupling between bright and dark modes in terahertz metamaterial," *Applied Physics Letters* **102**(1), 011122 (2013). Link

48. J. Q. Gu, R. Singh, X. J. Liu, X. Q. Zhang, Y. F. Ma, S. Zhang, S. A. Maier, Z. Tian, A. K. Azad, **H.-T. Chen**, A. J. Taylor, J. G. Han, and W. L. Zhang, "Active control of electromagnetically induced transparency analogue in terahertz metamaterials," *Nature Communications* **3**, 1151 (2012). Link

47. L. Huang, D. Roy Chowdhury, S. Ramani, M. T. Reiten, S.-N. Luo, A. K. Azad, A. J. Taylor, and **H.-T. Chen**, "Impact of resonator geometry and its coupling with ground plane on ultrathin metamaterial perfect absorbers," *Applied Physics Letters* **101**(10), 101102 (2012). Link

46. J. F. Zhou, D. Roy Chowdhury, R. Zhao, A. K. Azad, **H.-T. Chen**, C. M. Soukoulis, A. J. Taylor, and J. F. O'Hara, "Terahertz chiral metamaterials with giant and dynamically tunable optical activity," *Physical Review B* **86**(3), 035448 (2012). Link

45. S. Zhang, J. F. Zhou, Y.-S. Park, J. Rho, R. Singh, S. Nam, A. K. Azad, **H.-T. Chen**, X. B. Yin, A. J. Taylor, and X. Zhang, "Photoinduced handedness switching in terahertz chiral meta-molecules," *Nature Communications* **3**, 942 (2012). Link

44. R. Singh, J. Xiong, A. K. Azad, H. Yang, S. A. Trugman, Q. X. Jia, A. J. Taylor, and **H.-T. Chen**, "Optical tuning and ultrafast dynamics of high-temperature superconducting terahertz metamaterials," *Nanophotonics* **1**(1), 117–123 (2012). Link

43. D. Roy Chowdhury, R. Singh, A. J. Taylor, **H.-T. Chen**, W. Zhang, and A. K. Azad, "Coupling schemes in terahertz planar metamaterials," *International Journal of Optics* **2012**, 148985 (2012). Link

42. **H.-T. Chen**, "Interference theory of metamaterial perfect absorbers," *Optics Express* **20**(7), 7165–7172 (2012). Link

41. W. Han, L. Huang, Q. An, **H.-T. Chen**, S.-N. Luo, "Crystallization of liquid Cu nanodroplets on single crystal Cu substrates prefers closest-packed planes regardless of the substrate orientations," *Journal of Crystal Growth* **345**(1), 34–38 (2012). Link

40. L. Huang, D. Roy Chowdhury, S. Ramani, M. T. Reiten, S.-N. Luo, A. J. Taylor, and **H.-T. Chen**, "Experimental demonstration of terahertz metamaterial absorbers with a broad and flat high absorption band," *Optics Letters* **37**(2), 154–156 (2012). Link

39. J. Zhou, **H.-T. Chen**, T. Koschny, A. K. Azad, A. J. Taylor, C. M. Soukoulis, and J. F. O'Hara, "Application of metasurface description for multilayered metamaterials and an alternative theory for metamaterial perfect absorber," arXiv:1111.0343v1 (2011). Link

38. D. Roy Chowdhury, R. Singh, J. F. O'Hara, **H.-T. Chen**, A. J. Taylor, and A. K. Azad, "Dynamically reconfigurable terahertz metamaterial through photo-doped semiconductor," *Applied Physics Letters* **99**(23), 231101 (2011). Link

37. B. S. Alexandrov, K. Ø. Rasmussen, A. R. Bishop, A. Usheva, L. B. Alexandrov, S. Chong, Y. Dagon, L. G. Booshehri, C. H. Mielke, M. L. Phipps, J. S. Martinez, **H.-T. Chen**, and G. Rodriguez, "Non-thermal effects of terahertz radiation on gene expression in mouse stem cells," *Biomedical Optics Express* **2**(9), 2679–2689 (2011). Link

36. D. Roy Chowdhury, R. Singh, M. Reiten, **H.-T. Chen**, A. J. Taylor, J. F. O'Hara and A. K. Azad, "A broadband planar terahertz metamaterial with nested structure," *Optics Express* **19**(17), 15817–15823 (2011). Link

35. **H.-T. Chen**, J. F. O'Hara, A. K. Azad, and A. J. Taylor, "Manipulation of terahertz radiation using metamaterials," *Laser & Photonics Reviews* **5**(4), 513–533 (2011). Link

34. R. Singh, A. K. Azad, Q. X. Jia, A. J. Taylor, and **H.-T. Chen**, "Thermal tunability in terahertz metamaterials fabricated on strontium titanate single-crystal substrates," *Optics Letters* **36**(7), 1230–1232 (2011). Link

33. J. Bock, Y. Fukuyo, S. Kang, M. L. Phipps, L. B. Alexandrov, K. Ø. Rasmussen, A. R. Bishop, E. D. Rosen, J. S. Martinez, **H.-T. Chen**, G. Rodriguez, B. S. Alexandrov, and A. Usheva, "Mammalian stem cells reprogramming in response to terahertz radiation," *PLoS ONE* **5**, e15806 (2010). Link

32. P. Xu, S.-H. Jeon, **H.-T. Chen**, H. M. Luo, G. F. Zou, Q. X. Jia, M. Anghel, C. Teuscher, D. J. Williams, B. Zhang, X. J. Han, and H.-L. Wang, "Facile synthesis and electrical properties of silver wires through chemical reduction by polyaniline," *The Journal of Physical Chemistry C* **114**(50), 22147–22154 (2010). Link

31. **H.-T. Chen**, H. Yang, R. Singh, J. F. O'Hara, A. K. Azad, S. A. Trugman, Q. X. Jia, A. J. Taylor, "Tuning the resonance in high temperature superconducting terahertz metamaterials," *Physical Review Letters* **105**(24), 247402 (2010). Link

30. J. Q. Gu, R. Singh, Z. Tian, W. Cao, Q. R. Xing, M. X. He, J. W. Zhang, J. G. Han, **H.-T. Chen**, and W. L. Zhang, "Terahertz superconductor metamaterial," *Applied Physics Letters* **97**(7), 071102 (2010). Link

29. **H.-T. Chen**, J. F. Zhou, J. F. O'Hara, F. Chen, A. K. Azad, and A. J. Taylor, "Antireflection coating using metamaterials and identification of its mechanism," *Physical Review Letters* **105**(7), 073901 (2010).Link
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28. **H.-T. Chen**, J. F. Zhou, J. F. O'Hara, and A. J. Taylor, "A numerical investigation of metamaterial antireflection coatings," *Terahertz Science and Technology* **3**(2), 66–73 (2010). Link

27. **H.-T. Chen**, J. F. O'Hara, and A. J. Taylor, "Active Terahertz Metamaterials," *Optics and Spectroscopy* **108**(6), 834–840 (2010). Link

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25. A. K. Azad, **H.-T. Chen**, S. R. Kasarla, A. J. Taylor, J. F. O'Hara, Z. Tian, X. C. Lu, W. L. Zhang, H. Lu, and A. C. Gossard, "Ultrafast optical control of terahertz surface plasmons in subwavelength hole-arrays at room temperature," *Applied Physics Letters* **95**(1), 011105 (2009). Link

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23. A. K. Azad, **H.-T. Chen**, X. C. Lu, J. Q. Gu, N. R. Weisse-Bernstein, E. Akhadov, A. J. Taylor, W. L. Zhang, J. F. O'Hara, "Flexible quasi-three-dimensional terahertz electric metamaterials," *Terahertz Science and Technology* **2**(1), 15–22 (2009). Link

22. **H.-T. Chen**, W. J. Padilla, M. J. Cich, A. K. Azad, R. D. Averitt, and A. J. Taylor, "A metamaterial solid-state terahertz phase modulator," *Nature Photonics* **3**(3), 148–151 (2009). Link

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19. **H.-T. Chen**, S. Palit, T. Tyler, C. M. Bingham, J. M. O. Zide, J. F. O'Hara, D. R. Smith, A. C. Gossard, R. D. Averitt, W. J. Padilla, N. M. Jokerst, and A. J. Taylor, "Hybrid metamaterials enable fast electrical modulation of freely propagating terahertz waves," *Applied Physics Letters* **93**(9), 091117 (2008). Link

18. **H.-T. Chen**, H. Lu, A. K. Azad, R. D. Averitt, A. C. Gossard, S. A. Trugman, J. F. O'Hara, and A. J. Taylor, "Electronic control of extraordinary terahertz transmission through subwavelength metal hole arrays," *Optics Express* **16**(11), 7641–7648 (2008). Link

17. **H.-T. Chen**, J. F. O'Hara, A. K. Azad, A. J. Taylor, R. D. Averitt, D. B. Shrekenhamer, and W. J. Padilla, "Experimental demonstration of frequency agile terahertz metamaterials," *Nature Photonics* **2**(5), 295–298 (2008). Link

16. **H.-T. Chen**, W. J. Padilla, R. D. Averitt, A. C. Gossard, C. Highstrete, M. Lee, J. F. O'Hara, and A. J. Taylor, "Electromagnetic metamaterials for terahertz applications," *Terahertz Science and Technology* **1**(1), 42–50 (2008). Link

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14. **H.-T. Chen**, W. J. Padilla, J. M. O. Zide, S. R. Bank, A. C. Gossard, A. J. Taylor, and R. D. Averitt, "Ultrafast optical switching of terahertz metamaterials fabricated on ErAs/GaAs nanoisland superlattices," *Optics Letters* **32**(12), 1620–1622 (2007). Link

13. J. F. O'Hara, E. Smirnova, **H.-T. Chen**, A. J. Taylor, R. D. Averitt, C. Highstrete, M. Lee, and W. J. Padilla, "Properties of planar electric metamaterials for novel terahertz applications," *Journal of Nanoelectronics and Optoelectronics* **2**(1), 90–95 (2007). Link

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11. **H.-T. Chen**, W. J. Padilla, J. M. O. Zide, A. C. Gossard, A. J. Taylor, and R. D. Averitt, "Active terahertz metamaterial devices," *Nature* **444**(7119), 597–600 (2006). Link

10. F. Buersgens, R. Kersting, and **H.-T. Chen**, "Terahertz microscopy of charge carriers in semiconductors," *Applied Physics Letters* **88**(11), 112115 (2006). Link

9. G. C. Cho, **H.-T. Chen**, S. Kraatz, N. Karpowicz, and R. Kersting, "Apertureless terahertz near-field microscopy," *Semiconductor Science and Technology* **20**(7), S286–S292 (2005). Link

8. R. Kersting, **H.-T. Chen**, N. Karpowicz, and G. C. Cho, "Terahertz microscopy with submicrometer resolution," *Journal of Optics A: Pure and Applied Optics* **7**(2), S184–S189 (2005). Link

7. **H.-T. Chen**, S. Kraatz, R. Kersting, and G. C. Cho, "Identification of a resonant imaging process in apertureless near-field microscopy," *Physical Review Letters* **93**(26), 267401 (2004). Link

6. **H.-T. Chen**, G. C. Cho, and R. Kersting, "Terahertz imaging with nanometer resolution," *Applied Physics Letters* **83**(15), 3009–3011 (2003). Link

5. W. W. Zhang, W. P. Zhang, P. B. Xie, M. Yin, **H.-T. Chen**, L. Jing, Y.-S. Zhang, L.-R. Lou, and S.-D. Xia, "Optical properties of nanocrystalline Y_2O_3:Eu depending on the odd structure," *Journal of Colloid and Interface Science* **262**(2), 588–593 (2003). Link

4. **H. T. Chen**, R. Lian, M. Yin, L. R. Lou, W. P. Zhang, S. D. Xia, and J. C. Krupa, "Luminescence concentration quenching of $^1D_2$ state in $YPO_3:Pr^{3+}$," *Journal of Physics: Condensed Matter* **13**(5), 1151–1158 (2001). Link

3. **H. T. Chen**, M. Yin, R. Lian, L. R. Lou, W. P. Zheng, and S. D. Xia, "Luminescence dependence upon concentration and temperature in $YPO_3:Pr^{3+}$," *Spectroscopy and Spectral Analysis* **21**(2), 151–154 (2001).

2. D. F. Zhou, Y. H. Chen, C. S. Shi, Y. G. Wei, **H. T. Chen**, and M. Yin, "Energy transfer in $PbWO_4/Dy^{3+}$ luminescence," *Journal of Alloys and Compounds* **322**(1-2), 298–301 (2001). Link

1. P. B. Xie, W. P. Zhang, M. Yin, **H. T. Chen**, W. W. Zhang, L. R. Lou, and S. D. Xia, "Photoluminescence properties of surface-modified nanocrystalline ZnS:Mn," *Journal of Colloid and Interface Science* **229**(2), 534–539 (2000). Link

INVITED PRESENTATIONS

Invited Conference Presentations

104. "Metasurfaces accomplish ultra-broadband optical polarization conversions,"
CLEO Pacific Rim, Virtual, August 3–5, 2020.

103. (**Plenary**)"Metasurfaces for broadband terahertz polarization conversions,"
The 5th International Symposium on Microwave/THz Science and Applications (MTSA 2019), Busan, South Korea, September 29–October 3, 2019.

102. "Refractory metasurfaces for solar thermophotovoltaics,"
Metamaterials 2019, Rome, Italy, September 16–19, 2019.

101. "Hybrid graphene metasurface for high-speed mid-infrared light modulation and single-pixel imaging,"
The 10th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2019), Lisbon, Portugal, July 23–26, 2019.

100. (**Keynote**) "Hybrid graphene metasurfaces for high-speed mid-Infrared light modulation and single-pixel imaging,"
ICMAT 2019, Singapore, June 23–28, 2019.

99. (**Keynote**) "Broadband terahertz linear-to-circular polarization conversion,"
IRMMW-THz 2019, Nagoya, Japan, September 10–14, 2018.

98. "Broadband terahertz polarization conversion using metasurfaces,"
SPIE Optics + Photonics, San Diego, CA, August 19–24, 2018.

97. "Hybrid graphene metasurface for high-speed mid-infrared light modulation and single-pixel imaging,"
The 9th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2018), Marseille, France, June 24–July 1, 2018.

96. "Hybrid graphene metasurface for high-speed mid-infrared modulation,"
2018 Conference on Excited State Processes (ESP 2018), Santa Fe, NM, June 4–7, 2018.

95. "Metasurfaces for broadband terahertz polarization conversion," *The 9th International Symposium on Ultrafast Phenomena and Terahertz Waves (ISUPTW2018)*, Changsha, China, April 23–26, 2018.

94. "Hybrid graphene metasurfaces for high-speed mid-infrared modulation,"
The 5th International Conference on Frontiers of Plasmonics (FOP5), Nanjing, China, April 20–24, 2018.

93. "Narrowband terahertz bandpass filters based on metasurfaces,"
SPIE Defense + Commercial Sensing, Orlando, FL, April 15–19, 2018.

92. "Few-layer THz metasurfaces for effective control of amplitude, phase and polarization states,"
The 4th International Symposium on Microwave/Terahertz Science and Applications & the 8th International Symposium on Terahertz Nanoscience, Okayama, Japan, November 19–23, 2017.

91. "Hybrid metasurfaces – functionalities arising from enhanced light-matter interactions,"
BU MATERIALS WORKSHOP – Integrating Metamaterials with Quantum Materials, Boston, September 29, 2017.

90. (**Keynote**) "Few-layer metasurfaces for broadband optical antireflection and highly efficient flat lenses," *The 7th Internatonal Multidiscipline Conference on Optofluidics*, Singapore, July 25–28, 2017.
89. "Few-layer plasmonic metasurfaces for high-performance antireflection, polarization conversion, and flat optics,"
Light Conference 2017, Changchun, China, July 17–18, 2017.
88. "Optical antireflection without index match using bi-layer metasurfaces,"
The 9th International Conference on Materials for Advanced Technologies (ICMAT), Singapore, June 18–23, 2017.
87. "Terahertz metamaterials: manipulating the amplitude, phase, and polarization,"
Terahertz Science and Technology: The Mansion Meeting, Newport, RI, May 23–26, 2017.
86. "Highly efficient terahertz metasurface flat lenses",
SPIE Defense + Commercial Sensing, Anaheim, CA, April 9–13, 2017.
85. "Highly efficient terahertz metasurface flat lens,"
Optical Terahertz Science and Technology (OTST), London, UK, April 2–7, 2017.
84. "High-performance terahertz metasurface lenses",
SPIE Photonics West, San Francisco, CA, January 28 – February 2, 2017.
83. "Optical antireflection without index match using bi-layer metasurfaces,"
The 6th International Topical Meeting on Nanophotonics and Metamaterials, Seefeld, Austria, January 4–7, 2017.
82. "Active terahertz metasurface devices,"
The 62nd International Electron Devices Meeting (IEEE-IEDM), San Francisco, CA, December 3–7, 2016.
81. "Broadband terahertz metasurfaces for high-efficiency polarization conversion and beam focusing,"
ACS Southwest Regional Meeting, Galveston, TX, November 10–13, 2016.
80. "Development of high-performance terahertz metasurface flat lens,"
SPIE Photonics Asia, Beijing, China, October 12–14, 2016.
79. "Terahertz metasurfaces for antireflection and polarization manipulation,"
The 8th International Symposium on Ultrafast Phenomena and Terahertz Waves (ISUPTW2016), Chongqing, China, October 10–12, 2016.
78. (**Tutorial**) "Metamaterials and metasurfaces in arbitrary control of electromagnetic waves and their applications in THz communication components and systems,"
The 3rd ACM International Conference on Nanoscale Computing and Communication, New York City, NY, September 28–30, 2016.
77. "Few-layer terahertz metasurfaces for antireflection, polarization conversion & flat lens,"
OSA Subwavelength Photonics Incubator, Washington, DC, September 21–23, 2016.
76. "Electrically switchable metamaterials and devices,"
SPIE Optics + Photonics, San Diego, CA, August 28 – September 1, 2016.
75. (**Keynote**) "Electrically switchable metamaterials,"
"High-Performance Metasurface Lenses",
The 37th Progress in Electromagnetics Research Symposium, Shanghai, China, August 8–11, 2016.
74. "High-efficiency metasurface flat lenses,"
The 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META?16), Torremolinos (Malaga), Spain, July 25–28, 2016.

73. "Metamaterial-enabled narrow- and broad-band terahertz antireflection coatings,"
Optical Sensors', Vancouver, British Columbia, Canada, July 18–20, 2016.

72. "Metasurface spatial light modulators for infrared imaging,"
SPIE Defense + Commercial Sensing, Baltimore, MD, April 17–21, 2016.

71. "Metasurfaces for optical antireflection and polarization manipulation,"
MRS Fall Meeting, Boston, MA, November 29 – December 4, 2015.

70. (**Keynote**) "Terahertz metasurfaces for antireflection coatings,"
The 40th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), Hong Kong, China, August 23–28, 2015.

69. (**Plenary**)"Functional terahertz metamaterials and metasurfaces,"
The Fifth Shenzhen International Conference on Science and Technology (SICAST 5), Shenzhen, China, August 19–22, 2015.

68. "Electrically driven terahertz metamaterial diffraction modulators,"
"Terahertz metasurface antireflection coatings,"
"Few-layer metasurfaces for high efficiency linear polarization conversion and toward planar flat optics,"
The 36th Progress In Electromagnetics Research Symposium (PIERS), Prague, Czech Republic, July 6–9, 2015

67. "New opportunities arising from THz metamaterials: Propagation control and signal modulation,"
Keck Center for Terahertz Communications and Imaging Kick-off Review, Rice University, Houston, TX, November 14, 2014

66. "Few-layer ultrathin terahertz metamaterials,"
The 6th International Workshop on Electromagnetic Metamaterials (IWEM-VI), Santa Fe, NM, September 22–23, 2014.

65. "Ultra-broadband terahertz modulation by active hybrid metamaterials,"
The 39th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), Tucson, AZ, September 14–19, 2014.

64. "Few-layer planar terahertz metamaterials for antireflection, perfect absorption, polarization control, and wavefront shaping,"
The 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials'2014), Copenhagen, Denmark, August 25–28, 2014.

63. (**Keynote**) "From metamaterials to metasurfaces,"
The 8th Joint Meeting of Chinese Physicists Worldwide (OCPA8), Singapore, June 23–27, 2014.

62. "Electrically driven terahertz metamaterial diffraction modulators,"
The 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2014), Singapore, May 20–23, 2014.

61. "Tunable and nonlinear superconducting terahertz metamaterials,"
The 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2014), Singapore, May 20–23, 2014.

60. "Ultrathin terahertz meso-photonic materials: Emergent functionalities and potential applications,"
Mesoscale Science Frontiers, Santa Fe, NM, May 13–16, 2014.

59. "Broadband and high-efficiency terahertz metamaterial linear polarization converters,"
The 38th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW-THz), Mainz, Germany, September 1–6, 2013.

58. "Metamaterials for broadband linear polarization conversion and near-perfect anomalous reflection and transmission,"
The 4th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META???13), Sharjah, United Arab Emirates, March 18-22, 2013.
57. "Active terahertz metamaterials,"
Ultrafast Phenomena and Nanophotonics XVII at the Photonics West Conference, San Francisco, CA, February 2–7, 2013.
56. "Metamaterial cavities: Theory, experiments, and applications,"
MRS Fall Meeting, Boston, MA, November 25–30, 2012.
55. "Metamaterial cavity resonance: Antireflection coating and perfect absorption,"
2012 International Workshop on Metamaterials, Nanjing, China, October 8–10, 2012.
54. "Active terahertz metamaterials,"
Low Energy Electrodynamics in Solids (LEES 12), Napa, CA, July 22–27, 2012.
53. "Metamaterial absorbers and antireflection coatings: Experiments and theory,"
The 3rd International Conference on Metamaterials, Photonic Crystals and Plasmonics (META 2012), Paris, France, April 19–22, 2012.
52. "Thermally and optically tunable high-temperature superconducting terahertz metamaterials,"
The SPIE Photonics Europe 2012, Brussels, Belgium, April 16–20, 2012.
51. "Active tuning and nonlinearity in metamaterials,"
FIFTH 'RIO DE LA PLATA WORKSHOP ON LASER DYNAMICS AND NONLINEAR PHOTONICS, Colonia Del Sacramento, Uruguay, December 6–9, 2011.
50. "Tunable and nonlinear microwave and terahertz metamaterials,"
Frontiers in Optics 2011 / Laser Science XXVII (FiO 2011/LS XXVII), San Jose, CA, October 16–20, 2011.
49. "Recent developments in terahertz metamaterials,"
The 2011 International Symposium on Microwave/Terahertz Science and Applications (MTSA 2011), Nanjing, China, June 19–22, 2011.
48. "Metamaterials – New opportunity in manipulating terahertz radiation,"
Metamaterial Workshop, Hangzhou, China, April 9–12, 2011.
47. (**Plenary**) "Recent progress in terahertz metamaterials and devices,"
Shenzhen International Conference on Advanced Science and Technology (SICAST2009) – Terahertz Science and Technology, Shenzhen, China, November 15–20, 2009.
46. "Active terahertz metamaterials,"
Frontiers in Optics, San Jose, CA, October 11–15, 2009
45. "Terahertz metamaterials and devices,"
Topical Problems of Biophtonics – 2009, Nizhny Novgorod, Russia, July 19–24, 2009.
44. "Active terahertz metamaterials and devices,"
2009 SURA Terahertz Applications Symposium, Washington, DC, June 10–12, 2009.
43. "Active metamaterials and devices for terahertz applications,"
International Workshop on Electromagnetic Metamaterials III: Toward Real World Applications, Los Alamos, NM, May 18–19, 2009.
42. "Active terahertz metamaterial devices,"
Plasmonics and Metamaterials (META) 2008, Rochester, NY, October 20–23, 2008.

41. "Hybrid electromagnetic metamaterials for terahertz applications,"
2008 SURA Terahertz Applications Symposium, Washington, DC, June 4–6, 2008.
40. (**Plenary**) "Electromagnetic metamaterials for terahertz applications,"
Shenzhen International Conference on Advanced Science and Technology (SICAST2007) – Terahertz Science and Technology, Shenzhen, China, November 18–23, 2007.
39. (**Plenary**) "Active metamaterials: a novel approach to manipulate terahertz waves,"
The Joint 32nd International Conference on Infrared and Millimetre Waves and the 15th International Conference on Terahertz Electronics (IRMMW-THz), Cardiff, UK, September 2–7, 2007.
38. "Terahertz near-field microscopy,"
SPIE Conference of Optics East, Philadelphia, PA, October 25–28, 2004.

Invited Colloquia and Seminars

37. "Metasurfaces – achromatic polarization conversion and efficient optical modulation,"
Seminar @ Argonne National Laboratory, September 11, 2019.
36. "Metasurfaces for manipulating terahertz radiation,"
Seminar @ National University of Singapore, June 26, 2019.
35. "Metasurfaces: physics and applications,"
Physics/Theory colloquium @ Los Alamos National Laboratory, May 30, 2019.
34. "Active metamaterials and metasurfaces,"
Seminar @ Center for High Technology Materials, University of New Mexico, April 25, 2019.
33. "Exotic properties of metasurfaces and their applications,"
Seminar @ Electrical and Computer Engineering Department, University of New Mexico, February 9, 2018.
32. "10 years of metamaterials research at LANL,"
BLABS Seminar @ LANL, February 27, 2017.
31. "Metasurfaces for THz antireflection coatings, polarization rotators, flat lenses, and modulators,"
Seminar @ The State University of New York at Buffalo, September 26, 2016.
30. "Applying metamaterials to solve terahertz challenges ,"
Seminar @ Notre Dame University, March 20, 2015.
29. "Emergent electromagnetic functionalities in few-layer metamaterials,"
Seminar @ Southeast University, China, December 22, 2014.
28. "Emergent electromagnetic functionalities in few-layer metamaterials,"
Seminar @ Tianjin University, China, December 16, 2014.
27. "Emergent electromagnetic functionalities in few-layer metamaterials,"
Seminar @ Nankai University, China, December 15 & 17, 2014.
26. "Emergent electromagnetic functionalities in metamaterials for terahertz applications,"
Seminar @ Georgia Institute of Technology, September 8, 2014.
25. "Emergent electromagnetic functionalities in few-layer metamaterials,"
Colloquium @ South Florida University, September 5, 2014.
24. "Metamaterials and metasurfaces: principle, structure, functionality, and application,"
Colloquium @ Penn State University, March 20, 2014.
23. "Terahertz metamaterials – structure design, material integration, and emergent functionality,"
Seminar @ Molecular Foundry, Lawrence Berkeley National Laboratory, February 11, 2014.

22. "Active terahertz metamaterials,"
Seminar @ Tongji University, China, October 16, 2012.
21. "Active terahertz metamaterials,"
Seminar @ Fudan University, China, October 11, 2012.
20. "Manipulating terahertz radiation with electromagnetic metamaterials,"
Seminar @ University of Alabama in Huntsville, October 31, 2011.
19. "Recent development in terahertz metamaterials"
Colloquium @ Wenzhou Medical College, Wenzhou, China, June 29, 2011.
18. "Recent development in terahertz metamaterials"
Colloquium @ Physics Department of Zhejiang University, Hangzhou, China, June 24, 2011.
17. "Metamaterials – New opportunity in manipulating terahertz radiation,"
Seminar @ Virginia Commonwealth University, April 29, 2011.
16. "Metamaterials – New opportunity in manipulating terahertz radiation,"
Seminar @ Capital Normal University, Beijing, China, April 18, 2011.
15. "Metamaterials – New opportunity in manipulating terahertz radiation,"
Seminar @ Soochow University, Suzhou, China, April 14, 2011.
14. "Metamaterials – New opportunity in manipulating terahertz radiation,"
Seminar @ Southeast University, Nanjing, China, April 13, 2011.
13. "Metamaterials – New opportunity in manipulating terahertz radiation,"
Seminar @ University of Nebraska-Lincoln, March 25, 2011.
12. "Advances in terahertz metamaterials and applications,"
Seminar in the Electrical Engineering Department, UCLA, May 17, 2010.
11. "Actively controllable properties of terahertz metamaterials and their applications,"
Colloquium @ University of Science and Technology of China, November 23, 2009.
10. "Actively controllable properties of terahertz metamaterials and their applications,"
LCLS-PULSE seminars @ SLAC, Stanford University, October 13, 2009.
9. "Terahertz metamaterials: from basics to applications,"
OSA Student Chapter @ University of New Mexico, October 3, 2008.
8. "Electromagnetic metamaterials for terahertz applications,"
Southern Illinois Unveristy, Carbondale, IL, March 2008.
7. "Electromagnetic metamaterials for terahertz applications,"
University of Massachusetts, Amherst, MA, February 2008.
6. "Electromagnetic metamaterials for terahertz applications,"
University of Wyoming, Laramie, WY, December 2007.
5. "Artificial materials to bridge the terahertz gap,"
MSCookies & Tea Seminar @ Los Alamos National Laboratory, November 13, 2007.
4. "Novel materials and metamaterials for terahertz technology,"
Seminar @ University of California at Santa Barbara, May 17, 2007.
3. "Terahertz near-field microscopy for materials characterization & construction of terahertz functional devices using metamaterials,"
Seminar @ University of Connecticut, February 8, 2007.

2. "Terahertz for materials & metamaterials for terahertz,"
Texas A&M University, College Station, TX, January 2007.

1. "Terahertz metamaterials and their applications,"
Seminar @ Rensselaer Polytechnic Institute, December 1, 2006.

CONTRIBUTED CONFERENCE PRESENTATIONS

Presenter is underlined if not by me

45. C.-F. Wang, T. G. Habteyes, T. S. Luk, J. F. Klem, I. Brener, **H.-T. Chen**, and O. Mitrofanov, "Intersubband polaritons and strong coupling in single nanoantenna observed by near-field microscopy," *CLEO*, San Jose, CA, May 10–15, 2020.

44. **H.-T. Chen** and C.-C. Chang, "Broadband terahertz linear polarization rotation and linear-to-circular polarization conversion using metasurfaces," *OSA Advanced Photonics Congress – Optical Sensors*, Zurich, Switzerland, July 2–5, 2018.

43. (**Poster**) **H.-T. Chen**, C.-C. Chang, L. Huang, and J. Nogan, "Terahertz antireflection metasurfaces and application in narrow bandpass filters," *CLEO: 2018*, San Jose, CA, May 13–18, 2018.

42. **H.-T. Chen**, C.-C. Chang and L. Huang, "Bi-layer metasurfaces for dual and broadband terahertz antireflection," *The 42nd International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz)*, Cancun, Mexico, August 28–September 1, 2017.

41. D. Headland, C.-C. Chang, D. Abbott, W. Withayachumnankul, and **H.-T. Chen**, "Efficient terahertz metasurface-based flat lens," *The 42nd International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz)*, Cancun, Mexico, August 28–September 1, 2017.

40. (**Poster**) C.-C. Chang, "Self-aligned bi-layer metasurfaces for terahertz antireflection with expanded bandwidth," *Terahertz Science and Technology: The Mansion Meeting*, Newport, RI, May 23–26, 2017.

39. B. Zeng, C.-C. Chang, L. Huang, and **H.-T. Chen**, "Metasurfaces for terahertz antireflection coatings," *MRS Spring Meeting*, Phoenix, AZ, April 17–21, 2017.

38. C.-C. Chang, D. Headland, W. Withayachumnankul, D. Abbott, A. K. Azad, and **H.-T. Chen**, "High-performance terahertz metasurface flat lenses," *MRS Spring Meeting*, Phoenix, AZ, April 17–21, 2017.

37. (**Poster**) B. Zeng, L. Huang, C.-C. Chang, A. Azad, A. Singh, A. Mohite, and H.-T. Chen, "Emerging functionalities from few-layer meta-surfaces," *CINT User Meeting*, Santa Fe, NM, September 19–20, 2016.

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