

Curriculum Vitae

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PERSONAL DATA

Birth Date: 1969.08.05
Sex: Male
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EDUCATION

Ph. D. 1997-2005, Communication Engineering, National Taiwan University
M.S. 1991-1993, Electrical Engineering, National Taiwan University
B.Sc. 1987-1991, Electrical Engineering, National Taiwan University

EXPERIENCE

2014/01 - now Associate Research Fellow, Institute of Astronomy & Astrophysics,
Academia Sinica
2005/11 –2014/01 Assistant Research Fellow, Institute of Astronomy & Astrophysics,
Academia Sinica
1996/10 – 2005/11 Research Assistant, Institute of Astronomy & Astrophysics, Academia
Sinica
1995/10 – 1996/10 Contracted NSC Assistant, Institute of Astronomy & Astrophysics,
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INSTRUMENT FINISHED

2002	W-band subharmonically pumped mixers (MMIC) for AMiBA
2003	W-band production receivers (first two sets) for AMiBA
2004	600 – 696 GHz SIS receiver for SMA
2005	W-band SHP mixers (module) production for AMiBA
2007	320 – 420 GHz SIS receiver for SMA
2015	First ALMA Band-1 cartridge development
2016	First 800 MHz Hydrogen Intensity Mapping Receiver for GBT
2020	First ALMA Band-1 receiver installed on site

COMPLETE LIST OF PUBLICATIONS

Papers in refereed journal

1. **Y.-J. Hwang**, C.-H. Lien, Huei Wang, R. G. Gough, M. W. Sinclair, and T.-H. Chu, "A 78-114 GHz monolithic subharmonically pumped GaAs-based HEMT diode mixer," *IEEE Microwave Wireless Comp. Letters*, vol. 12, no. 6, pp. 209-211, June 2002.
2. **Y.-J. Hwang**, H. Wang, and T.-H. Chu, "A W-band Subharmonically Pumped Monolithic GaAs-Based HEMT Gate Mixer," *IEEE Microwave Wireless Compon. Letters*, vol. 14, no. 7, pp. 313-315, July 2004.
3. P. T. P. Ho, M.-T. Chen, T.-D. Chiueh, T.-H. Chiueh, T.-H. Chu, H. Jiang, P. Koch, D. Kubo, C.-T. Li, M. Kesteven, K.-Y. Lin, G.-Ch. Liu, K.-Y. Lo, C.-J. Ma, R. N. Martin, K.-W. Ng, H. Nishioka, F. Patt, J. B. Peterson, P. Raffin, H. Wang, **Y.-J. Hwang**, K. Umetsu, J.-H. P. Wu, "The AMiBA Project," *Modern Physics Letters A*, vol. 19, no. 13-16, pp.993-1000, 2004.
4. **Y.-J. Hwang**, R. Rao, R. Christensen, M.-T. Chen, and T.-H. Chu, "Submillimeter-wave phasor beam-pattern measurement based on two-stage heterodyne mixing with unitary harmonic difference," *IEEE Trans. Microwave Theory Tech.*, vol.55, pp. 6, pp.1200-1208, June 2007.
5. J.-Y. Lu, C.-C. Kuo, C.-M. Chiu, H.-W. Chen, **Y.-J. Hwang**, C.-L. Pan, and C.-K. Sun, "THz interferometric imaging using subwavelength plastic fiber based THz endoscopes," *Optics Express*, vol. 16, no.4, pp. 2494-2501, Feb. 2008.
6. J.-Y. Lu, C.-M. Chiu, C.-C. Kuo, C.-H. Lai, and H.-C. Chang, **Y.-J. Hwang**, C.-L. Pan, and C.-K. Sun, "Terahertz scanning imaging with a subwavelength plastic fiber," *Applied Physics Letters*, vol. 92, #084102, Feb. 2008.
7. P. T. P. Ho, P. Altimirano, M. Birkinshaw, S.-W. Chang; C.-H. Chang, K.-J. Chen, M.-T. Chen, T.-D. Chiueh, T.-H. Chiueh, T.-H. Chu, C.-C. Han, C.-W. Hung, Y.-D. Huang, W.-Y. P. Hwang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, P. Koch, D. Kubo, K. Lancaster, C.-T. Li, H. Liang, Y.-W. Liao, J. Lim, Y.-S. Lin, K.-Y. Lin, G.-C. Liu, K.-Y. Lo, C.-J. Ma; P. Martin-Cocher, R. N. Martin, S. Molnar, K.-W. Ng, H. Nishioka, C.-G. Park, F. Patt, J. B. Peterson, P. Raffin, F. Romano, H. Wang, K. Umetsu, F.-C. Wang, J.-H. P. Wu, "The Yuan-Tseh Lee AMiBA Project," *Modern Physics Letters A (MPLA)*, vol.23, no.17/20, pp.1243 – 1251, June 2008.
8. J.-H. P. Wu, T.-H. Chiueh, C.-W. Huang, Y.-W. Liao, F.-C. Wang, P. Altimirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, G. Chereau, C.-C. Han, P. T. P. Ho, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, P. Koch, D. Kubo, C.-T. Li, K.-Y. Lin, G.-C. Liu, P. Martin-Cocher, S. Molnar, H. Nishioka, P. Raffin, K. Umetsu,

- M. Kesteven, W. Wilson, M. Birkinshaw, K. Lancaster, "AMiBA: First Year Results for Sunyaev-Zel'Dovich Effect," *Modern Physics Letters A (MPLA)*, vol.23, no.17/20, pp.1675 – 1686, June 2008.
9. P. T. P. Ho, P. Altamirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, C.-C. Chen, K.-J. Chen, M.-T. Chen, C.-C. Han, W. M. Ho, Y.-D. Huang, **Y.-J. Hwang**, F. Ibañez-Romano, H. Jiang, P. M. Koch, D. Y. Kubo, C.-T. Li, J. Lim, K.-Y. Lin, G.-C. Liu, K.-Y. Lo, C.-J. Ma, R. N. Martin, P. Martin-Cocher, S. M. Molnar, K.-W. Ng, H. Nishioka, K. E. O'Connell, P. Oshiro, F. Patt, P. Raffin, K. Umetsu, T. Wei, J.-H. P. Wu, T.-D. Chiueh, T. Chiueh, T.-H. Chu, C.-W. L. Huang, W.Y. P. Hwang, Y.-W. Liao, C.-H. Lien, F.-C. Wang, H. Wang, R.-M. Wei, C.-H. Yang, M. Kesteven, J. Kingsley, M. M. Sinclair, W. Wilson, M. Birkinshaw, H. Liang, K. Lancaster, C.-G. Park, U.-L. Pen, and J. B. Peterson, "The Yuan-Tseh Lee Array for Microwave Background Anisotropy," *Astrophysical Journal*, vol. 694, no. 2, pp.1610-1618, April 2009.
 10. J.-H. P. Wu, P. T. P. Ho, C.-W. L. Huang, P. M. Koch, Y.-W. Liao, K.-Y. Lin, G.-C. Liu, S. M. Molnar, H. Nishioka, K. Umetsu, F.-C. Wang, P. Altamirano, M. Birkinshaw, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, T. Chiueh, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Y. Kubo, K. Lancaster, C.-T. Li, P. Martin-Cocher, P. Oshiro, P. Raffin, T. Wei, and W. Wilson, "Array for Microwave Background Anisotropy: Observations, Data Analysis, and Results for Sunyaev-Zel'Dovich Effects," *Astrophysical Journal*, vol. 694, no. 2, pp. 1619- 1628, April 2009.
 11. K.-Y. Lin, C.-T. Li, P. T.P. Ho, C.-W. L. Huang, Y.-W. Liao, G.-C. Liu, P. M. Koch, S. M. Molnar, H. Nishioka, K. Umetsu, F.-C. Wang, J.-H. P. Wu, M. Kesteven, M. Birkinshaw, P. Altamirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, P. Martin-Cocher, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, F. Ibañez-Roman, H. Jiang, D. Y. Kubo, P. Oshiro, P. Raffin, T. Wei, W. Wilson, K.-J. Chen, and T. Chiueh, "AMiBA: System Performance," *Astrophysical Journal*, vol. 694, no. 2, pp. 1629-1636, April 2009.
 12. H. Nishioka, F.-C. Wang, J.-H. P. Wu, P. T.P. Ho, C.-W. L. Huang, P. M. Koch, Y.-W. Liao, K.-Y. Lin, G.-C. Liu, S. M. Molnar, K. Umetsu, M. Birkinshaw, P. Altamirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Y. Kubo, C.-T. Li, P. Martin-Cocher, P. Oshiro, P. Raffin, T. Wei, and W. Wilson, "Tests of AMiBA Data Integrity," *Astrophysical Journal*, vol. 694, no. 2, pp. 1637-1642, April 2009.
 13. K. Umetsu, M. Birkinshaw, G.-C. Liu, J.-H. P. Wu, E. Medezinski, T. Broadhurst, D. Lemze, A. Zitrin, P. T. P. Ho, C.-W. L. Huang, P. M. Koch, Y.-W. Liao, K.-Y. Lin, S. M. Molnar, H. Nishioka, F.-C. Wang, P. Altamirano, C.-H. Chang, S.-H.

- Chang, S.-W. Chang, M.-T. Chen, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Y. Kubo, C.-T. Li, P. Martin-Cocher, P. Oshiro, P. Raffin, T. Wei, and W. Wilson, "Mass and Hot Baryons in Massive Galaxy Clusters from Subaru Weak-Lensing and AMiBA Sunyaev-Zel'Dovich Effect Observations," *Astro-physical Journal*, vol. 694, no. 2, pp. 1643-1663, April 2009.
14. M.-T. Chen, C.-T. Li, **Y.-J. Hwang**, H. Jiang, P. Altamirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, T.-D. Chiueh, T.-H. Chu, C.-C. Han, Y.-D. Huang, M. Kesteven, D. Kubo, P. Martin-Cocher, P. Oshiro, P. Raffin, T. Wei, H. Wang, W. Wilson, P. T. P. Ho, C.-W. Huang, P. Koch, Y.-W. Liao, K.-Y. Lin, G.-C. Liu, S. M. Molnar, H. Nishioka, K. Umetsu, F.-C. Wang, and J.-H. P. Wu, "AMiBA: Broadband Heterodyne Cosmic Microwave Background Interferometry," *Astrophysical Journal*, vol. 694, no. 2, pp. 1664-1669, April 2009.
 15. C.-M. Chiu, H.-W. Chen, Y.-R. Huang, **Y.-J. Hwang**, W.-J. Lee, H.-Y. Huang, and C.-K. Sun, "All-THz fiber-scanning near-field microscopy," *Optics Letters*, vol. 34, no. 7, pp. 1084-1086, April 2009.
 16. H.-W. Chen, C.-M. Chiu, C.-H. Lai, J.-L. Kuo, P.-J. Chiang, **Y.-J. Hwang**, H.-C. Chang, and C.-K. Sun, "Sub-wavelength dielectric-fiber-based THz coupler," *IEEE J. Lightwave Tech.*, vol. 27, no. 11, pp. 1489-1495, June 2009.
 17. Y.-S. Lin, Y.-S. Hsieh, C.-C. Chiong, **Y.-J. Hwang**, "Q-band GaAs bandpass filter design for ALMA band-1," *IEEE Microwave Wireless Comp. Letter*, vol. 19, no. 6, pp. 353-355 June 2009.
 18. C.-H. Lai, Y.-C. Hsiuh, H. -W. Chen, **Y.- J. Hwang**, H. -C. Chang, and C. -K. Sun, "Low-index terahertz pipe waveguides," *Optics Letters*, vol. 34, no. 21, pp. 3457-3459, Nov. 2009.
 19. Chi-Kuang Sun, Yu-Wei Huang, Tzu-Fang Tseng, Chung-Chiu Kuo, **Yuh-Jing Hwang**, "THz fiber-based swept-source imaging radar," *Optics Letters*, vol. 35, no. 9, pp. 1344-1346, May 2010.
 20. Y.-W. Liao, J.-H. P. Wu, P.T.-P. Ho, C.-W. L. Huang, P. M. Koch, K.-Y. Lin, G. -C. Liu, S. M. Molnar, H. Nishioka, K. Umetsu, F. -C. Wang, P. Altamirano, M. Birkinshaw, C. -H. Chang, S. -H. Chang, S. -W. Chang, M.-T. Chen, T. Chiueh, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Y. Kubo, C. T. Li, P. Martin-Cocher, P. Oshiro, P. Raffin, T. Wei, W. Wilson, "AMiBA: Sunyaev- Zeldovich Effect Derived Properties and Scaling Relation of Massive Galaxy Clusters," *Astrophysical Journal*, vol. 713, no. 1, pp. 584-591, Apr. 2010.
 21. C.-W. L. Huang, J.-H. P. Wu, P.-T. P. Ho, P. M. Koch, Y.-W. Liao, K.-Y. Lin, G.-C. Liu, S. M. Molnar, H. Nishioka, K. Umetsu, F.-C. Wang, P. Altamirano, M. Birkinshaw, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, T. Chiueh, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Kubo, C.-T. Li,

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22. C.-T. Li, D. Y. Kubo, W. Wilson, K.-Y. Lin, M.-T. Chen, P. T.-P. Ho, C.-C. Chen, C.-C. Han, P. Oshiro, P. Martin-Cocher, C.-H. Chang, S.-H. Chang, P. Altamirano, H. Jiang, T.-D. Chiueh, C.-H. Lien, H. Wang, R.-M. Wei, C.-H. Yang, J. B. Peterson, S.-W. Chang, Y.-D. Huang, **Y.-J. Hwang**, M. Kesteven, P. Koch, G.-C. Liu, H. Nishioka, K. Umetsu, T. Wei, and J.-H. P. Wu, "AMiBA Wideband Analog Correlator," *Astrophysical Journal*, vol. 716, no. 1, pp. 746-757, June 2010.
23. G.-C. Liu, M. Birkinshaw, J.-H. Wu, P. Ho, C.-W. Huang, Y.-W. Liao, K.-Y. Lin, S. Molnar, H. Nishioka, P. Koch, K. Umetsu, F.-C. Wang, P. Altamirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, C.-C. Han, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Kubo, C.-T. Li, P. Martin-Cocher, P. Oshiro, P. Raffin, T. Wei, and W. Wilson, "Contamination of the Central Sunyaev-Zel'Dovich Decrements in AMiBA Galaxy Cluster Observations," *Astrophysical Journal*, vol. 720, no. 1, pp. 608-613, Aug. 2010.
24. J.-T. Lu, Y.-C. Hsueh, Y.-R. Huang, **Y.-J. Hwang**, and C.-K. Sun, "Bending loss of terahertz pipe waveguides," *Optics Express*, vol. 18, no. 25, pp. 26332-26338, Dec. 2010.
25. J.-T. Lu, C.-H. Lai, T.-F. Tseng, H. Chen, Y.-F. Tsai, I.-J. Chen, **Y.-J. Hwang**, H.-C. Chang, and C.-K. Sun, "Terahertz polarization-sensitive rectangular pipe waveguides," *Optics Express*, vol. 19, no. 22, pp. 21532-21539, Oct. 2011.
26. H. Chen, T.-H. Chen, T.-F. Tseng, J.-T. Lu, C.-C. Kuo, S.-C. Fu, W.-J. Lee, Y.-F. Tsai, Y.-Y. Huang, E. Y. Chuang, **Y.-J. Hwang**, and C.-K. Sun, "High-sensitivity in vivo THz transmission imaging of early human breast cancer in a subcutaneous xenograft mouse model," *Optics Express*, vol. 19, no. 22, pp. 21552-21562, Oct. 2011.
27. J.-T. Lu, C.-H. Lai, T.-F. Tseng, H. Chen, Y.-F. Tsai, **Y.-J. Hwang**, H.-C. Chang, and C.-K. Sun, "Terahertz pipe-waveguide-based directional couplers," *Optics Express*, vol. 19, no. 27, pp. 26883-26890, Dec. 2011.
28. T.-F. Tseng, C.-H. Lai, J.-T. Lu, Y.-F. Tsai, **Y.-J. Hwang**, C.-K. Sun, "Investigation on strong coupling behaviors of THz subwavelength directional couplers," *IEEE Photonics Journal*, vol. 4, no.6, pp. 2307-2314, Dec. 2012.
29. J.-H. Hu, C.-C. Chiong, **Y.-J. Hwang**, and Z.-M. Tsai, "E-Band Mixer with IP_{1dB} Design Consideration for Radio Astronomical Instrumentation," *IEEE Microwave and Wireless Components Letters*, vol. 28, No. 5, pp. 452-454, May 2018.

30. Y.-C Wu, **Y.-J. Hwang**, C.-C. Chiong, B.-Z. Lu, and H. Wang, "An Innovative joint-injection Mixer with Broadband IF and RF for advanced Heterodyne Receivers of Millimeter-wave Astronomy," *IEEE Trans. Microwave Theory Tech.*, vol. 68, no. 12, pp.5408- 5422, Dec. 2020.

Conference Proceedings

1. M.-T. Chen, S.-H. Chang, C.-C. Chin, T.-H. Chu, S.-I. Hu, M.-S. Hwang, **Y.-J. Hwang**, K.-Y. Lo, R.N. Martin, P. Martin-Cocher, S.-S Shen, S.-C. Yang and M.-J. Wang, "A progress report on the Submillimeter Array in Taiwan: the receiver system," *SPIE-4015-27*, August, 2000.
2. **Y.-J. Hwang** and T.H Chu, "A new measurement method for four-port scattering matrix of a dual-polarization antenna," *2001 IEEE Intel. Sym. Antennas Propag.*, vol. 2, pp. 645 -648, July 2001.
3. **Y.-J. Hwang**, M.-T. Chen, Huei Wang, R. G. Gough, and M. W. Sinclair, "W-band GaAs HEMT MMIC subharmonically pumped diode mixers for Array of Microwave Background Anisotropy (AMiBA) Receivers," *Proc. XXVII URSI General Assembly*, Maastricht, Netherlands, August 2002.
4. M.-T. Chen, **Y. -J. Hwang**, W. Ho, H. Jiang, T.H. Chu, S.C. Lu and M. W. Sinclair, "A full-polarization W-band receiver for CMB detection," *Proc. SPIE 4855*, August 2002.
5. **Y.-J. Hwang**, Huei Wang, and T.-H. Chu, "W-band GaAs HEMT MMIC subharmonically pumped diode mixers with 20 GHz IF bandwidth," *Proc. 32th European Microwave Conf.*, vol. 1, pp. 87-90, Milan, Italy, September 2002.
6. **Y.-J. Hwang**, M.-T. Chen, H. Jiang, T.-H. Chu, S.-N. Hsieh, J. C. Han, F. Patt, and W. Wilson, "W-band dual-polarization receiver for Array of Microwave Background Anisotropy (AMiBA)," *Proc. SPIE 5498-64*, pp.517-524, June 2004.
7. **Y.-J. Hwang**, M.-T. Chen, E. Chung, and T.-H. Chu, "A novel near field vector beam measurement system at 690 GHz," *Proc. 34th European Microwave Conf.*, pp. 557-560, Amsterdam, Netherlands, October 2004.
8. T.-H. Chu, **Y.-J. Hwang**, L.-H. Wang, S.-N. Hsieh, H.-C. Lu, and M.-T. Chen, "Development of RF components and modules for AMiBA receiver," *2002 National Sym. on Telecommunication*, Nantou, Dec. 2002.
9. **Y.-J. Hwang** and T.-H. Chu, "Beam Pattern Characterization of Submillimeter Array Receiver at 690GHz," *2004 National Sym. Telecommunication*, Keelung, Dec. 2004.

10. T.-H. Chu, **Y.-J. Hwang**, S.-N. Hsieh, S.-F. Teng, L.-H. Wang, C.-L. Ke and M.-T. Chen, "Development of RF mixers and LO/IF units for AMiBA receiver," *2004 National Sym. Telecommunication*, Keelung, Dec. 2004.
11. **Y.-J. Hwang**, M.-J. Wang, S.-C. Shi, Q. Yao, H. Jiang, M.-T. Chen, "600-696GHz heterodyne receiver with fixed-tuned SIS mixer and Martin-Puplett LO/RF diplexer," *Proc. 2005 Asia-Pacific Microwave Conf.*, pp. 256-259, SuZhou, China, December 2005.
12. V. B. Khaikin, V. N. Radzikhovskiy, S. E. Kuzmin, M. K. Lebedev and **Y.-J. Hwang**, "Simulation and realization of MM wave imaging system with FPA," *Proc. 4th ESA Workshop MMW Tech. Appl., TSMMW2006 and MINT-MIS2006*, pp. 137-142, Espoo, Finland, February, 2006.
13. C.-T. Li, C.-C. Han, M.-T. Chen, Y.-D. Huang, H. Jiang, **Y.-J. Hwang**, S.-W. Chang, C.-H. Chang, J. Chang, P. Martin-Cocher, C.-C. Chen, W. Wilson, K. Umetsu, K.-Y. Lin, P. Koch, G.-C. Liu, H. Nishioka, and P. T. P. Ho, "Initial operation of the Array of Microwave Background Anisotropy (AMiBA)," *Proc. SPIE 6275-55*, May 2006.
14. P. Koch, P. Altamirano, C.-H. Chang, S.-H. Chang, S.-W. Chang, M.-T. Chen, G. Chereau, C.-C. Han, P.T.P. Ho, C.-W. Huang, Y.-D. Huang, **Y.-J. Hwang**, H. Jiang, M. Kesteven, D. Kubo, C.-T. Li, Y.-W. Liao, K.-Y. Lin, G.-C. Liu, P. Martin-Cocher, S. Molnar, H. Nishioka, P. Raffin, K. Umetsu, F.-C. Wang, W. Wilson, and J.-H. P. Wu, "The AMiBA Project," *Proc. EAMA2007*, Fukuoka, Japan, Oct. 2007.
15. **Y.-J. Hwang**, T. Wei, S.-W. Chang, M.-J. Wang, S.-C. Shi, and M.-T. Chen, "320 – 420 GHz low-noise heterodyne receiver modules for the Submillimeter Array of Taiwan," *Proc. 2008 Global Sym. Millimeter Waves (GSMM2008)*, pp. 205-208, Nanjing, China, April 2008.
16. **Y.-J. Hwang**, C.-C. Chiong, S.-W. Chang, T. Wei, W.-T. Wong, Y.-S. Lin, M.-T. Chen, H. Wang and H.-Y. Chang, "Cryogenic testing and multi-chip module design of a 31.3-45GHz MHEMT MMIC-based heterodyne receiver for radio astronomy," *Proc. SPIE 7020-68*, Marseille, France, June 2008.
17. K.-Y. Lin, C.-T. Li, J.-H. P. Wu, P. M. Koch, K. Umetsu, G.-C. Liu, H. Nishioka, P. Altamirano, D. Kubo, C.-C. Han, Y.-D. Huang, P. Raffin, M. Kesteven, C.-W. Huang, Y.-W. Liao, F.-C. Wang, S.-W. Chang, C.-H. Chang, P. Oshiro, S.-H. Chang, H. Jiang, M.-T. Chen, **Y.-J. Hwang**, W. Wilson, K.-J. Chen, F. Ibanez-Romano, P. T.-P. Ho, and W.-Y. P. Hwang, "AMiBA first year observation," *Proc. SPIE 7012-93*, Marseille, France, June 2008.

18. Y.-S. Lin, Y.-S. Hsieh, **Y.-J. Hwang** and C.-C. Chiong, "Q-band bandpass filter designs in heterodyne receiver for radio astronomy," *IEEE Asia-Pacific Conf. Circuits and Systems (APCCAS 2008)*, Macau, China, Nov. 2008.
19. T.-C. Hong, **Y.-J. Hwang**, W.-T. Wong, T. Wei, and Y.-S. Lin, "Low-phase-noise, phase-locked tunable millimeter-wave signal source for calibration of W-band low-noise astronomical heterodyne receivers," *Asia-Pacific Microwave Conf. 2008*, Hong Kong and Macau, China, Dec. 2008.
20. C.-C. Chiong, W.-J. Tzeng, **Y.-J. Hwang**, W.-T. Wong, H. Wang, and M.-T. Chen, "Design and measurements of cryogenic MHEMT IF low noise amplifier for radio astronomical receivers," *Proc. 4th European Microwave Integrated Circuit Conf. (EuMIC2009)*, pp. 1-4, Rome, Italy, Sep. 2009.
21. **Y.-J. Hwang**, C.-C. Han, and Y.-D. Huang, "A photonic-tunable cryogenically cooled W-band subharmonically-pumped GaAs HEMT diode mixer module," *Proc. 4th European Microwave Integrated Circuit Conf. (EuMIC2009)*, pp. 208-211, Rome, Italy, Sep. 2009.
22. Y.-F. Kuo, **Y.-J. Hwang**, C.-C. Chiong, R.-M. Wen, and M.-T. Chen, "Phase-locked broadband GaAs HBT VCO module for millimeter-wave astronomical local oscillators," *Proc. 39th European Microwave Conf. (EuMC 2009)*, pp. 1824-1827, Rome, Italy, Sep. 2009.
23. S.-W. Chang, C.-Y. E. Tong, A. Hedden, **Y.-J. Hwang**, and R. Blundell, "A 660 GHz local oscillator subsystem: design, testing and alignment," *Proc. 39th European Microwave Conf. (EuMC 2009)*, pp. 834-837, Rome, Italy, Sep. 2009.
24. A. Hedden, E. Tong, R. Blundell, D. C. Papa, M. Smith, S. Chang, **Y. Hwang**, K. Jacobs, C. E. Honingh, P. Pütz, S. Wulff, M. Schultz, "Upgrading the SMA660GHz Receivers," *Proc. 21st Intl. Symp. Space Terahertz and Tech. (ISSTT-2010)*, pp. 428-432, Oxford, UK, Mar. 2010.
25. Y.-F. Kuo, C.-C. Chiong, **Y.-J. Hwang**, "A broadband phase-locked Ka-band single-tuning VCO with reconfigurable loop filters," *Proc. Asia-Pacific Microwave Conf.*, pp.773-776, Melbourne, Australia, Dec. 2011.
26. **Y.-J. Hwang**, C.-C. Chiong, Y.-F. Kuo, C.-C. Lin, C.-T. Ho, C.-C. Chuang, H.-Y. Chang., Y.-S. Lin, Z.-M. Tsai, Huei Wang, "Development of receiver and local oscillator components for Atacama Large Millimeter/submillimeter Array (ALMA) Band-1 in Taiwan," *Proc. SPIE 8452-100*, doi: 10.1117/12.925875, Amsterdam, the Netherlands, July 2012.
27. C.-C. Lin and **Y.-J. Hwang**, "Single-Sleeve Waveguide-to-Microstrip Transition Probe for Full Waveguide Bandwidth," *2012 European Microwave Conference*, pp. 1146 – 1149, Amsterdam, the Netherlands, Oct. 2012.

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2. Y.-C. Wu, **Y.-J. Hwang**, C.-C. Chiong, B.-Z. Lu, and H. Wang, “An Innovative joint-injection Mixer with Broadband IF and RF for advanced Heterodyne Receivers of Millimeter-wave Astronomy,” *IEEE Trans. Microwave Theory Tech.*, Dec. 2020.
3. **Y.-J. Hwang**, C.-C. Chiong, Y.-D. Huang, C.-D. Huang, C.-T. Liu, F.-C. Hsieh, Y.-H. Tseng, P.-H. Chiang, C.-C. Chang, C.-T. Ho, S.-T. Jian, C.-F. Lee, Y.-W. Lee, A. Gonzalez, J. Effland, K. Saini, M. Pospieszalski, R. Finger, V. Tapia, N. Reyes, “Performance of the First Three Preproduction 35 – 50 GHz Receiver Front-ends for Atacama Large Millimeter / submillimeter Array,” *47th European Microwave Conf.*, pp. 1144- 1147, Nuremberg, Germany, Oct. 2017.
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LIST OF INTELLECTUAL PROPERTIES

R.O.C. Patent No. I706630, “mixer”

Master Students Supervised

1. Tzu.-Chueh Hong, (National Central University) (9/ 2006 – 6/2008)
thesis title: Calibration Signal Source for Array of Microwave Background Anisotropy.

Postdoctoral Fellows Supervised

1. Dr. Yue-Fang Kuo (engineer: 9/2008- 7/2010, posdoc: 8/2010 – 9/2015)
2. Dr. Chi-Chang Lin (7/2011 – 2/2015)

Engineers Supervised

1. Mr. Wei-Ting Wong (12/2007 – 03/2011)
2. Mr. Ching-Chi Chuang (7/2011 – 3/2014)
3. **Mr. Chin-Ting Ho** (3/2011 – now)
4. Mr. Shou-Ting Jian (10/2014 – 08/2020)
5. Mr. Chien-Feng Lee (10/2014 – 2/2017)
6. Mr. Ping-Hsueh Yang (9/2016 – 2/2018)
7. **Mr. Chen Chien** (2/2017 – Now)
8. Dr. Yi-Ching Wu (Ph. D. level support engineer) (3/2018 – 5/2020)
9. **Dr. Jie-Ying Zhong** (Ph. D. level support engineer) (5/2020 – now)