Arthur W. Lichtenberger

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a. Professional Preparation

Predoctoral:

Amherst College, Amherst, MA	Machelor of Arts-Physics BA,	1980
University of MA Technician,	Dept. of Radio Astronomy,	9/80-7/81
Amherst College	Summer NSF Research Grant,	5/80-9/80
University of Virginia, Charlottesville, VA	Electrical Engineering M.S.,	1984
University of Virginia, Charlottesville, VA	Electrical Engineering Ph.D.,	1987

b. Appointments

Full Professor of Electrical Engineering, University of Virginia,	7/08-present
Director, University of Virginia Microfabrication Laboratories	3/03-present
Associate Professor of Electrical Engineering, University of Virginia,	8/93-7/08
Assistant Professor of Electrical Engineering, University of Virginia,	7/87-8/93

c. Publications

Five most recent publications relevant to the proposed research:

1. *"Pentalevel Resist Process for the Precise Fabrication of Small Area SIS Junctions"*, Arthur W. Lichtenberger, Gregory Stronko, Jie Wang, Thomas W. Cecil, and Jian Z. Zhang, accepted to the IEEE Transactions on Applied Superconductivity, 2009
2. *" Formation of High Quality AlN Tunnel Barriers via an Inductively Coupled Plasma"*, T. Cecil, Gregory Stronko, Jie Wang, J. Zhang, A. Kerr and A. Lichtenberger, Nineteenth International Symposium On Space THz Technology, SRON Sweden, May 2008.
3. *"345 GHz Prototype SIS Mixer with Integrated MMIC LNA"*. Puetz, P., Hedden, A., Gensheimer, P., Golish, D., Groppi, C., Kulesa, K., Narayanan, G., Lichtenberger, A., Kooi, J., Wadefalk, N., Weinreb, S., Walker, C., , Int. J. Infrared Milli. Waves, 27, 1365, 2006
4. "A 64 pixel Superheterodyne Camera", C. Walker, C. Groppi, C. Kulesa, A. Hedden, P. Pütz, D. Golish, P. Gensheimer, C. Drouet, S. Weinreb, N. Wadefalk, J. Kooi, G. Narayanan, A. Lichtenberger, Tom Kuiper, SuperCam:, The 16th International Symposium On Space THz Technology (ISSTT), May 2005.
5. *"Ultra-Thin SOI Beam Lead Chips for Superconducting Terahertz Circuits"*, R.B. Bass, A.W. Lichtenberger, R. Weikle, J.W. Kooi, C.K. Walker, and S.-K. Pan, 6th European Conference on Applied Superconductivity, September 14, 2003

Five additional significant publications

1. *"A Nb-Based 180-Degree IF Hybrid for Balanced SIS Mixers,"* Christine M. Lyons, Arthur W. Lichtenberger, Anthony R. Kerr, Eugene F. Lauria, and Lucy M. Ziurys, IEEE Transactions on Applied Superconductivity, Vol 17 (2) 1, 194-197, June 2007.
2. "A Fixed-Tuned Integrated SIS Mixer with Ultra-Wide-Band IF and Quantum-Limited Sensitivity for ALMA Band 3 (84-116 GHz) Receivers", Shing-Kuo Pan, Anthony R. Kerr, Marian W. Pospieszalski, Eugene F. Lauria, W. Kirk Crady, Neil J. Horner, Sivasankaran Srikanth, Eric Bryerton, Stephane M. X. Claude, Chi-Chung Chin Jian Z. Zhang and Arthur W. Lichtenberger), 15th Int. Symp on Space THz Tech., March 2004.
3. "The *ALMA Band 6 (211-275 GHz) Sideband-Separating SIS Mixer-Preamplifier*,A. R. Kerr , S.-K. Pan , E. F. Lauria (NRAO), A. W. Lichtenberger , J. Zhang (UVA), M. W. Pospieszalski, N. Horner, G. A. Ediss, J. E. Effland, R. L. Groves (NRAO), Fifteenth International Symposium on Space THz Technology, March 2004.
4. *"Desert STAR, a 7- pixel 345 GHz heterodyne array receiver for the Heinrich Hertz Telescope"*, C.E. Groppi, C.K. Walker, D. Golish, A. Hedden, G. Narayanan, and A.W. Lichtenberger, SPIE, Astronomical Telescopes and Instrumentation, August 2002.
5. "A 200-300 GHz SIS Mixer-Preamplifier with 8 GHz Bandwidth", E. F. Lauria, A. R. Kerr, M. W. Pospieszalski, S. –K. Pan, J. E. Effland, and A. W. Lichtenberger, IEEE Microwave and Guided Wave Letters, **2**, 454 (2001).

d. Synergistic Activities

1 Infrastructure of Radio Astronomy: Have collaborated with a number of astronomical receiver groups for the past 20 years to develop state of the art millimeter and submm wavelength receivers for use on radio telescopes throughout the world.

2 NASA Mission Panel : Served on NASA flight hardware review panels 1999-2003.

3 Present & past member of Organizing, Program and Local committees for the International Symposium Space Terahertz Technology (ISSTT) and the Applied Superconductivity Conference. Co-chaired the 20th ISSTT in Charlottesville VA, 2009.

4 The PI's research group provides opportunities including mentoring, assistance with senior Science Fair projects and interactions in our lab for students in the Charlottesville Public Schools Talent Development Program which is targeted for minority students.

5 The PI has additional summer partnerships with the State of Virginia's Summer Governor School, which is comprised of the best and brightest science high school students in Virginia, and also with the NRAO Undergraduate Summer Student Research Assistantships (part of NSF's REU program).

f. Collaborators and Other affiliations

Collaborators (outside UVa, alphabetical by institution): Chris Groppi, Arizona State University; Christopher Walker, Lucy M. Ziurys, University of Arizona; Jacob Kooi Sander Weinreb Hamdi Mani, Cal Tech; Charles Cunningham, Stephane Claude HIA-NRC Canada; Karl Jacobs Patrick Puetz, University of Cologne; Abby Hedden, Harvard-Smithsonian Center for Astrophysics; Ville Mottonen, Helsinki, Univ. of Techn; Benard Lazareff, IRAM; Tom Kuiper, Jet Propulsion Laboratory; Gopal Narayana, Sigfrid Yngvesson, U-Mass, Amherst; Gregory Goltsman, Moscow State; Anthony Kerr, S. –K. Pan, E Bryerton, M Pospieszalski, NRAO; Christopher Martin, Oberlin College; Mark Boko, Univ. of Rochester; Seog-Tae Han, TRAO Korea; Stephen Jones, Tom Crowe Jeffrey Hesler Virginia Diodes; Daniel Prober, Yale University.

Graduate Advisor: Robert J Mattauch, Dean and Commonwealth Professor Emeritus School of Engineering, Virginia Commonwealth University (retired)

Thesis Advisor(last 5 years): Dr Robert Bass, Will Clark, Christopher Ellis**,** Dr. Aaron Datesman, Dr Jon Schultz, Dr Tom Cecil, Christine Llyons, Michael Cerbery, Delbert Herald, Roy Matthews Chunhu Zhang. [Total Number Graduate Students = 22]