G.H. Massiha

LIST OF DOCUMENTS

Degree Granting Institutions

Employment History

a. Employment History at UL Lafayette
b. Prior Employment

Academic and Professional Activities

Publications

Funded Grants

Courses Taught or Developed

a. Multimedia and web based courses and research
b. Undergraduate courses

Philosophy of Teaching and Research

References

GHOLAM H. MASSIHA

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Department of Industrial Technology
University of Louisiana in Lafayette
Lafayette, LA 70503
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DEGREES GRANTED:

Ph.D. Electrical Engineering
University of South Florida, Tampa, Florida, April 1991

M.S. Physics
Eastern Michigan University, Ypsilanti, Michigan, August 1982

B.S. Electrical Engineering
University of Michigan, Ann Arbor, Michigan, December 1980

PROFESSIONAL BACKGROUND:

I have taught in the Industrial Technology Department at Louisiana University since January of 1996. During that time I was responsible for the development and delivery of several courses including various electronics, control, microprocessor, CAD, PLC, and robotics. I have designed web pages for several electronics, robotics, construction, and my research interests. I have modernized the electronics, PLC, and robotics laboratories through funded proposals that I was principal investigator. I have twenty years of research experience plus fourteen years of university and college teaching experience. I am currently coordinator of Virtual Energy and Demonstration and Construction Center and Reliability and Noise Measurement lab at ITEC department. I have more than sixteen years of research background in experimental and theoretical electronics controls, microelectronics, VLSI, condensed matter physics, and solar energy research, with emphasis on the engineering reliability and characterization of thin metal films and IC devices. I have extensive experience in writing grant equipment enhancement and technology/engineering research proposals, establishing and improving teaching and research laboratories, supervising student research projects, and teaching various undergraduate and graduate engineering and physics lectures and laboratories. I am/was principal investigator of several projects in electrical noise, robotics, and energy efficient residential construction practices.

EMPLOYMENT HISTORY - EXPERIENCE:

Elio Girard/BORSF Professor in Engineering (1996-Present), Department of Industrial Technology, University of Louisiana at Lafayette

- Teaching undergraduate and graduate courses in fields of electronics, control, and graphics. Setting up Robotics, micro-controller, and PLC laboratories. Setting up Internet courses for electronics related subjects.
- Directing funded research projects on reliability of electrical devices, electrical noise measurement, controls, and construction.
- Principal investigator of several projects in electrical noise, robotics, and energy efficient residential construction practices.
- Directing undergraduate and graduate independent study projects on reliability, control, and robotics.

Electrical Engineering Lecturer (1993 - 1995), Department of Biological and Agricultural Engineering, University of Georgia.

- Teaching undergraduate and graduate courses including; circuits, feedback control, microprocessor, and electric machines lectures, laboratories, and advanced laboratory.
- Directing research project on a topic related to control systems.
- Theoretical studies of excess noise in high temperature superconductors.

Visiting Assistant Professor (1991 - 92), Department of Physics and Engineering, Centenary College.

- Coordinator of 3-2 Engineering Program.
- Teaching subjects such as thermodynamics, strength of materials, classical mechanics, and technical drawing lectures and laboratories. Academic advising contributions: working with engineering undergraduate students.
- Research grant from Texas Panhandle Pipeline Company to develop a workshop for study of energy consumption in residential buildings. Teaching grant from Thiokol Corporation for engineering graphics lab equipment.

FUNDED RESEARCH EXPERIENCE:

1996-present

- Director of Virtual Energy Construction Laboratory.
- Director of Reliability and Noise Laboratory.
- Designed stressing systems for metal thin films.
- Introduce and implement a new highly sensitive noise measurement technique for detecting defects in thin films.
- Funded research projects in theoretical studies of Electromigration failure in thin films and the relation between failure time and 1/f noise.
- Funded research projects in Microprocessor, control, and robotics system design

1988-1995

- Designed aluminum and gold thin films for study of reliability and excessive noise measurements.
- Designed and developed sensitive low noise amplifiers.

1984-1987

- Design of Laser Diffused Diode Links (LDL) samples for reliability studies, DARPA.
- Study of reliability and excess noise in LDL samples.
- Study of MOS and Diodes using Deep Level Transient Spectroscopy (DLTS).
  1982-1983
- Four-wave mixing using He-Ne laser.
  1981-1982
- Solar energy and energy conservation, (Master Thesis).

PROFESSIONAL AFFILIATIONS:

- Charter member of Institute of Biological Engineering
- Active Member of National Association of Industrial Technology, NAIT
- Member of Sigma Pi Sigma, National Physics Honor Society
- President of Society of Physics Students at USF (1985-1986)

COMPUTER EXPERIENCE:

- Basic, C, Fortran, and Pascal
- Intel and Motorola microprocessor programming

SCHOLASTIC HONORS:

- Elio Girard/BORSF Professor in Engineering, University of Louisiana in Lafayette since 2001
- Research Associate, Electrical Engineering Department, University of South Florida
- Graduate Teaching Assistantship, University of South Florida
- Graduate Teaching Assistantship, Eastern Michigan University
- EMU Dean scholarship for undergraduates

ADDITIONAL ACTIVITIES:

- Application of science in sports
- Application of feedback control systems in agricultural equipment
- Application of fuzzy logic in microprocessor

ATHLETICS:

- Board Member of Cajun Running Club (1996 - 2000)
- Varsity Member of Eastern Michigan University Track and field Team, 1979 MAC Conference Champion.

PAPERS:

Refereed Articles

*Accepted, “Residential Energy Saving Methods” (with Herbert A. Hebert), TechDirection, 2006.

1. “A Novel Design for Tri-State Nano Molecular Memory”, (with J. Choudhury), Proceedings of 2006 NAIT Convention, Nov, 2006.
2. “One-over-f Noise Characterization of Magneto-Resistive Read/Write Head” (with K.S. Rawat), Proceedings of 2006 NAIT Convention, Nov, 2006.
3. “Studying Magneto-Resistive Read-Write Head Reliability Using Low-Frequency Noise Measurement Technique” (with K.S. Rawat), The Journal of Industrial Technology, Vol. 18, No. 2, October 2006.
4. “Ultra-Fast Parallel Analog to Digital Converter (ADC)” (with J. Choudhury), Proceedings of 2005 NAIT Convention, St. Louis, Mo, Nov, 2005.
5. “An Interdisciplinary Approach to Undergraduate Robotics Course Projects” (with K. Rawat), Proceedings of 2005 NAIT Convention, St. Louis, Mo, Nov, 2005.
6. “I-V Fluctuation of Benzene Molecule as P-Type or N-Type Active Element” (with J. Choudhury), SPIE International Symposium Fluctuations and Noise, Austin, Texas, May 2005.
7. “Studying the Dependence of Low-Frequency Noise on Geometrical Shape of Al-Based Thin Film Interconnects” (with J. Choudhury), SPIE International Symposium Fluctuations and Noise, Austin, Texas, May 2005.
8. “Low Frequency Noise Measurement Based Reliability Testing of VLSI Interconnects with Different Geometry” (with K. S. Rawat), IEEE Electron Devices, Vol. 25, No. 12, p781-783, Dec. 2004.
9. “Fuzzy Logic Based Building Energy Management System” (with K.S. Rawat), Proceedings of 2004 NAIT Convention, Louisville, KY, Oct, 2004.
10. “An Efficient Encoding Scheme for Ultra-Fast Flash ADC”, (with J. Choudhury), Proceedings of The 5th Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems , Atlanta, GA, September 2004
11. “A Hands-On Laboratory Based Approach to Undergraduate Robotics Education” (with K. Rawat), Proceedings of IEEE 2004 International Conference on Robotics and Automation, New Orleans, LA, April 2004.
12. “Secure Implementation of a Web Server for Research Facility”, (with K. Rawat), Proceedings of 2003 NAIT Convention, Nashville, TN, Nov, 2003. Selected Paper

13. “ASIC Design and Implementation of a Temperature Monitoring Chip”, (with K. Rawat), Proceedings of 2003 NAIT Convention, Nashville, TN, Nov, 2003. * Selected Paper*

14. “Rope Climber Transport Vehicle: A Design Challenge”, (with K. Rawat), TechDirection Journal, pp22-25, October 2003.

15. “Accurate Modeling of Thin-Film Inductance for Nano-Chip” (with J. Choudhury), Nanotechnology, 2003. 2003-IEEE NANO, Third IEEE Conference vol.1, pp351-355, San Francisco, CA, August 12-14, 2003

16. “New Nano-Electronic Memory using Multi-Level Logic Principle” (with J. Choudhury), Nanotechnology, 2003. 2003-IEEE NANO, Third IEEE Conference vol. 1, pp160-163, San Francisco, CA, August 12-14, 2003.

17. “Initiating a Program in Nano-technology through a Structured Curriculum”, (with J. Choudhury and K. Rawat), 2003 International Conference on Microelectronic Systems Education, Anaheim, CA, June 2003.

18. “Secure Multimedia Transmission Over Wireless Networks: Issues and Challenges” (with K.S. Rawat), IEEE section IV annual meeting, New Orleans, April, 2003.

19. “Designing A Telemetric Data Acquisition System For Clinical Studies”, (with K.S. Rawat), Proceedings of 2003 ASEE Gulf Southwest Conference, Arlington, TX, March, 2003.

20. “Model Driven Robot Simulation: RoboCell” (with K.S. Rawat), Proceedings of 2003 ASEE Gulf Southwest Conference, Arlington, TX, March, 2003.

21. “A Systematic Approach to Design a PC-Based Data Acquisition System” Proceedings of 2002 NAIT Convention, Panama City, FL, Nov, 2002. * Selected Paper*

22. “Investigating Electrical Noise Signal in Thin Metal Film” (with K. Rawat), The Journal of Industrial Technology, Vol. 18, No. 2, April 2002.

23. “Determining Watts and Kilowatt-Hours” (with Allen Smith), TechDirection Journal, Vol. 61, No. 8, page 18-20, March 2002.

24. “Design Competition Missile Launching Vehicle” (with Levonia Theriot), TechDirection Journal, Vol. 61, No. 1, page 16-18, August 2001.

25. “Training Students in the Reliability and Noise Laboratory” (with K.S. Rawat), Proceedings of 2001 ASEE Gulf Southwest Conference, College Station, TX, March, 2001.

26. “Virtual-web Energy Demonstration”, (with Chun Lau, Allen Smith, Beth Black), Proceedings of 2001 ASEE Gulf Southwest Conference, College Station, TX, March, 2001.

27. “Senior Projects in Noise Measurement Laboratory”, Proceedings of 2000 NAIT

Convention, Pittsburgh, PA, Nov. 2000.

28. “Virtual Web Energy Demonstration Construction Center at UL Lafayette”, Proceedings of 2000 NAIT Convention, Pittsburgh, PA, Nov. 2000.

29. “Low Noise Amplifier design, Proceedings of 2000 ASEE Conference”, Las Cruses NM, April, 2000.

30. “Characteristic of Robotic Feedback Control”, Proceedings of 1999 ASEE Conference, Dallas, TX, March, 1999.

31. “Teaching Robotics Feedback Control Characteristics”, Abstract, Proceedings of 1999 NAIT Conference, Panama City, FL, Nov., 1999.

32. “Facilitating Industrial Technology Course Design”, Proceedings of 1998 NAIT Conference, Indianapolis, IN, October 1998.

33. “Design of a Temperature Monitoring System Using Microprocessor”, Proceedings of 1998 ASEE Conference, New Orleans, LA, March, 1998.

34. “Intelligent Sorter, Application of Microprocessor as a Controlling Device”, Proceedings of 1997 ASEE Conference, Houston, TX, March, 1997.

35. “Introduction of PLCs to Industrial Technology Students as a Basic Part of an Electronics Course”, Proceedings of The International Conference on Agile Manufacturing, Lafayette, LA, February 1997.

36. “Characterization of Excess Electrical Noise in Al-thin Films”, Proceeding of IEEE Southeastcon'95, Raleigh, NC, March, 1995.

37. “Relation Between Excess Electrical Noise and Electromigration in Al-Based Thin Films”, Proceeding of ICEE 93, May 1993.

38. “Reliability Measurement Techniques for Laser-Induced Diode Links”, Proceeding of IEEE Southeastcon'93, Charlotte, NC, April 1993.

39. “Reliability Test of Interconnections Using Electrical Noise Measurement”, Proceeding of IEEE Southeastcon’92, Vol. 2, Birmingham, Alabama, April 1992.

40. “Reliability of Laser-Induced Diode Links for Wafer-Scale Integration”, Circuits, Systems, and Information, TSI Press, M. Jamshidi, August 1991.

41. “Excess Electrical Noise in Aluminum-based Thin Films”, Ph.D. Dissertation, April 1991.

42. “Electromigration in Laser Diffused Diode Links of Wafer-Scale-Integration and Detecting Techniques”, Proceeding of Florida Society for Electron Microscopy, the Journal of Electron Microscopy Techniques, Clearwater, Florida, April, 1990.
43. “Reliability and Resistance Minimization Studies of Laser Diffused Links in Wafer-Scaled-Integration” (with C. Fang), Proceeding of 19th European Solid State Device Research Conference, Berlin, West Germany, September, 1989.

44. "Detection of Defects in Thin Al-films Using an Ultra Sensitive Dual Channel Noise Measurement System" (with Charles Chen), Proceeding of IEEE Southeast Conference, Columbia, South Carolina, April, 1989.

45. "Detection of Hot Spots in Thin Metal Films Using Thermal Noise Measurement" (with Charles Chen), IEEE Electron Device Letters, Vol.10, No. 2, February 1989.

PRESENTATION:

Several presentations at IEEE, ASEE, SPIE, NAIT national and regional conferences and conventions

WEB PAGES:

Research:

1. Virtual Energy and Demonstration Center: www.vedcc.org
2. Electrical Noise: www.electricalnoise.net
3. Construction Management: http://www.verssa.net/cmnet/

Teaching:

1. Electronics I: http://www.ucs.louisiana.edu/~ghm2469/itec/itec220/index.htm
2. PLC: http://www.ucs.louisiana.edu/~ghm2469/itec/itec328/index.htm
3. Robotics: http://www.ucs.louisiana.edu/~ghm2469/itec/itec424/index.htm

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GRANTS:

Successful in obtaining more than *$500,000* in internal and external proposals:

$32,000	CO-PI, Microsoft Software Grant, 1997, MS granted approximately $32,000 worth of software and multiple user license to ITEC. The software is used in the electronics and control laboratory, 1997.
$40,000	CO-PI, Microprocessor Laboratory System, Louisiana Board of Regents (BORSF), Enhancement Grant, 1998. The MPU laboratory PCs and equipment were updated with the money from this grant,1998-2000.
$162,000	PI, Reliability and Noise Measurement Testing, Louisiana Board of Regents (BORSF), Research Competitive, Three years, 1999 – 2003.
$242,000	PI, Energy Conservation/Management Construction Center, Louisiana Department of Natural Resources, 2000 – 2003.
$86,000	PI, Control and Manufacturing Laboratory Enhancement, Louisiana Board of Regents (LEQSF). 2000-2001
$133,000	Co-PI, Establishment of the Louisiana Supply Network Education Testbed (*LouiSNET*), Louisiana Board of Regents, 2002-05.
$60,000	PI, Computer Network Laboratory for the Construction and Manufacturing Programs (CMnet)**,** BoRSF, 2004-05.
$62,000	Co-PI (Author), Study of Mold and Moisture Control in South Louisiana construction aftermath of 2005 Hurricans, Louisiana Service Grant, Jan 2007-June 2008.
***	Recipient of UL Lafayette Summer Research Awards in 1997, 1999, and 2004.

I have submitted four proposals to NIST, NASA, BoRSF, and ULC service this school year.

List of Classes Taught at UL Lafayette

Industrial Technology

ITEC 103 **Graphics.** Introduction to fundamental techniques of drafting using sketching and CAD.

ITEC 220 **Electronics I.** Basic circuits and components and analysis of DC and AC circuits. Laboratory application in instrumentation and trouble shooting.

ITEC 320 **Electronics II.** Introduction to diodes, transistors, amplifiers, and integrated circuits and Laboratory application.

ITEC 322 **Digital Electronics Technology.** Digital logic, number systems, digital hardware and interfacing. Study IC types, memory circuits, flip flop, and ADC converters.

ITEC 324 **Microprocessor Technology.** Students will be introduced to microprocessor-based systems. MPU architecture, number systems, and assembly language programming will be covered. Potential for Utilization in control system development is presented.

ITEC 326 **Advanced Microprocessor Technology.** Multiplexing, I/O control handshake, PIA, DAC, ADC devices. Study of 16 and 32 bit processors.

ITEC 329 **Motors and Control Technology.** Electromagnetic theories, single and multiphase wiring and distribution systems, motor starters and stopping technologies, and motor control system.

ITEC 424 **Robotics Technology.** Study of commercially available robotic systems. Safety applications and maintenance and automation.

ITEC 328/428 **Programmable Logic Control.** Logic concept, controller hardware and software, ladder programming, installation and trouble shooting of various PLCs.

ITEC 497/498 **Directed Individual Studies.** I strongly encourage students to take part in independent study course. Students may pick any subjects and they must write a report or show their work on Internet.

List of Classes Taught at UGA

Engineering Science and Technology

ET 380 **Electrical Systems.** Application of electricity to agriculture; wiring systems for farm buildings; selecting, using, and controlling electrically operated equipment in farming operations.

ET 430 **Measurement and Control Systems for Agri-Industries.** Measurement of process control variables and implementation of microcomputer-based measurement and control systems.

ET 460 **Electrical Power for Agri-Industrial Applications.** Fundamentals and utilization of electric power relative to energy transmission, AC and DC electrical machines, industrial controls and power semiconductors; equipment-theory of operation, evaluation and selection for given tasks.

ES 383 **Electric Circuits.** An introductory course including definitions of electric circuits parameters, Kirchoff's and Thevenin's Laws, circuit analysis, complex notations, mesh and nodal analysis resonance and polyphase circuits.

ES 384 **Introduction to Microprocessor Systems.** Students will be introduced to microprocessor-based systems. MPU architecture, number systems, and assembly language programming will be covered. Potential for Utilization in control system development is presented.

ES 385 **Electrical Machines.** A laboratory analysis of the operating characteristic of transformers, alternators, polyphase motors, single phase motors and DC generators and motors.

ES 387 **Engineering Electronics.** Electronics devices, including transistors, with particular emphasis on design of circuits for small signal amplifiers, relays, timers, and solid state electronics.

AEN 466 **Feedback Control Systems.** Development and solution of differential equations that describe systems encountered in engineering. Feedback principles will include block diagram representation and simplification, system transfer functions, system types and characteristics, stability criterion, and frequency response methods of system analysis and compensation, and control system design.

AEN 480 **Microprocessor Based Control Systems.** The necessary background to enable students to design and develop microprocessor based control system is covered. Coverage of system architecture input/output problems and programming will equip students for system design.

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Philosophy of Teaching and Research

I believe that a faculty in the College of Engineering must provide both leadership and a successful vision in teaching and research. I always tried to seek and achieve a vision that is clear and could be communicated with ease. I would commit the leadership abilities of myself to assisting the faculty in achieving the vision. Success of a department can only be achieved through success of its faculty. The Chair of Engineering Technology must take an active roll in alumni and local industrial relations and fund raising for the department.

My philosophy of education, similar to that of other professors serving the post secondary market, has evolved over time. However, the core values focus on the responsibility of four central groups who share in the educational process: the student, the professor, the administration, and the community-at-large. Each group has specific visions and missions to accomplish that will insure a superior product enters the market place. My style of teaching and leadership has been developed by my more than 20 years as an educational teacher and coordinator of various research projects, where the bottom line was so crucial to the granting agency and the university I represented. These experiences provide the following concepts and strategies, which serve as the foundation of my actions in management and in providing leadership, to an organization and the people, who are the most important factors.

Overall, I believe that in today's educational marketplace I must be an innovative, visionary leader who values the collaborative process. I am a person who has a passion for serving others and who will be able to demonstrate an ability to work collaboratively as well as be an advocate for shared-governance with an ability to forge consensus on difficult issues. I am a partnership builder that result in enhanced opportunities for students, faculty, and administrators.

Without question, I feel that I have been a successful manager due in part to my open door policy as an accessible community, faculty, and student-centered person who believes this promotes a friendly learning atmosphere. This assists me to work effectively with everyone in pursuit of improvements that enrich the teaching/learning process and produce measurable student success. I also feel that I do lead with honesty and integrity in the preservation of academic freedom, thoughtful discourse, staff development, and constructive change. Considering I deal with a significant cross -section of individuals I have grown to understand and realize how important it is to lead with compassion and with a sincere commitment and sensitivity to and diversity in all of its aspects.

Finally, I feel that I am a technologically sophisticated educator with an understanding of how technology can benefit all segments of the district. I would encourage partnerships, linkages, and technological innovation that would be of benefit to the people we are in business for, the students...our clients.

REFERENCES

1. Professor William Mueller, Department of Industrial Technology, University of Louisiana at Lafayette, LA, 70504, (337) 482-5885, wmueller@Louisiana.edu.

2. Mr. Herber A. Hebert, Construction Program Coordinator, Department of Industrial Technology, University of Louisiana at Lafayette, LA, 70504, (337) 482-5886, hah5863@Louisiana.edu.

3. Dr. Frank Trocki, President, Lincoln Technical Institute – Indianapolis, 7225 Winton Dr. Indianapolis, IN, (317) 363-6436 or (201) 953-2250, FTrocki@lincolnedu.com.

4. Professor Wilfredo Moreno, Department of Electrical Engineering, University of South Florida, Tampa, FL. Tel. No. (813) 474-4775, moreno@eng.usf.edu.

5. Professor Bahram Roughani, Head, Department of Physics, Kettering University (GMI), Flint, MI 48504-4898. Tel. No. (810) 762-7499, broughan@kettering.edu.

6. Dr. Kuldeep Rawat, Department of Technology, Elizabeth City State University, Tel. No. (252) 335-3846, ksrawat@mail.ecsu.edu.

7. Professor Charles Chen, Department of Electrical Engineering, University of South Florida, Tampa, FL. Tsongchen@aol.com.

8. Professor Jeff Trahan, Chairman, Department of Physics and Engineering, Centenary College, Shreveport, LA 71129. Tel. No. (318) 869-5217, jtrahan@centenary.edu.
9. Professor James Porter, Department of Physics, Eastern Michigan University, Ypsilanti, MI 48197. Tel. No. (313) 487-4144.