



DOCKET NO. 20190126-TX

FILED 6/6/2019

DOCUMENT NO. 04763-2019

FPSC - COMMISSION CLERK

1 Stair Way  
Monroe, New York 10950  
732-595-QCST  
[www.qcstelecom.com](http://www.qcstelecom.com)

June 3, 2019

VIA OVERNIGHT COURIER

Carlotta S. Stauffer, Commission Clerk  
Florida Public Service Commission  
Gerald Gunter Building  
2540 Shumard Oak Blvd.  
Tallahassee, FL 32399

**REDACTED**

RE: Application for Authority to Provide Telecommunications Service Within the State of Florida

Dear Ms. Stauffer,

Please find attached for filing one original and one copy of the Application for Authority to Provide Local Exchange Telecommunications Service in the State of Florida. Also attached is the filing fee of \$500.

Included in Exhibit A are resumes of the directors of QCSTelecom, Inc., provided to demonstrate technical and managerial qualifications.

Pursuant to Florida Statutes sections 364.183(1) and 364.183(3), we respectfully request confidential classification of Exhibit B, which contains proprietary confidential business information. As required in Rule 25-22.006(5) of the Florida Administrative Code, one copy of this Exhibit B with the information claimed as confidential highlighted is enclosed, and two edited copies of this exhibit that can be made available for public inspection are also enclosed. Please note that QCSTelecom, Inc. does not have audited financial statements. As the chief executive officer of QCSTelecom, Inc., my sworn signature below affirms that the financial statements included in Exhibit B are true and correct.

Please acknowledge receipt of this filing via email to [jbias@qcstelecom.com](mailto:jbias@qcstelecom.com).

Respectfully,

James R. Bias  
President  
QCSTelecom, Inc.

COM	___
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APA	___
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 2019 JUN -6 AM 9:41  
 COMMISSION CLERK



1 Stair Way  
Monroe, New York 10950  
732-595-QCST  
[www.qcstelecom.com](http://www.qcstelecom.com)

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## **EXHIBITS**

**Exhibit A** – Resumes of Directors of QCSTelecom, Inc. to demonstrate managerial and technical qualifications

Exhibit A(1) – Resume of James R. Bias, Director and President, QCSTelecom, Inc.

Exhibit A(2) – Resume of Micah J. Sameth, Director and Secretary and Treasurer, QCSTelecom, Inc.

Exhibit A(3) – Resume of Haniph Latchman, Director, QCSTelecom, Inc.

Exhibit A(4) – Statement of Company Contracted to Provide Technical Maintenance

**Exhibit B** – Financial Statements of QCSTelecom, Inc.

**CONFIDENTIAL – Filed With Claim of Confidentiality**

# FLORIDA PUBLIC SERVICE COMMISSION

## OFFICE OF INDUSTRY DEVELOPMENT AND MARKET ANALYSIS

### APPLICATION FOR ORIGINAL AUTHORITY OR TRANSFER OF AUTHORITY TO PROVIDE TELECOMMUNICATIONS SERVICE IN THE STATE OF FLORIDA

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#### INSTRUCTIONS

This form should be used as the application for an original certificate and transfer of an existing certificate (from a Florida certificated company to a non-certificated company). In the case of a transfer, the information shall be provided by the transferee. If you have other questions about completing the form, call **(850) 413-6600**.

Print or type all responses to each item requested in the application. If an item is not applicable, please explain. All questions must be answered. If unable to answer the question in the allotted space, please continue on a separate sheet.

Once completed, submit the **original and one copy** of this form along with a **non-refundable** fee of **\$500.00** to:

**Florida Public Service Commission  
Office of Commission Clerk  
2540 Shumard Oak Blvd.  
Tallahassee, Florida 32399-0850  
(850) 413-6770**

# APPLICATION

This is an application for (check one):

**Original certificate** (new company)

**Approval of transfer of existing certificate:** Example, a non-certificated company purchases an existing company and desires to retain the original certificate rather than apply for a new certificate.

Please provide the following:

1. Full name of company, including fictitious name(s), that must match identically with name(s) on file with the Florida Department of State, Division of Corporations registration:

\_\_\_ QCSTelecom, Inc. \_\_\_\_\_  
\_\_\_\_\_

2. The Florida Secretary of State corporate registration number:

\_\_\_\_\_ F15000001467 \_\_\_\_\_

3. F.E.I. Number: \_\_\_ 45-3071966 \_\_\_\_\_

4. Structure of organization:

The company will be operating as a:  
(Check all that apply):

- |                                     |                           |                          |                              |
|-------------------------------------|---------------------------|--------------------------|------------------------------|
| <input type="checkbox"/>            | Corporation               | <input type="checkbox"/> | General Partnership          |
| <input checked="" type="checkbox"/> | Foreign Corporation       | <input type="checkbox"/> | Foreign Partnership          |
| <input type="checkbox"/>            | Limited Liability Company | <input type="checkbox"/> | Limited Partnership          |
| <input type="checkbox"/>            | Sole Proprietorship       | <input type="checkbox"/> | Other, please specify below: |
- \_\_\_\_\_

**If a partnership**, provide a copy of the partnership agreement.

**If a foreign limited partnership**, proof of compliance with the foreign limited partnership statute (Chapter 620.169, FS). The Florida registration number is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Who will serve as point of contact to the Commission in regard to the following?

(a) This application:

Name: Michael Young  
Title: Consultant  
Street Address: 1 Stair Way  
Post Office Box: \_\_\_\_\_  
City: Monroe  
State: NY  
Zip: 10950  
Telephone No.: (732) 595-2042  
Fax No.: \_\_\_\_\_  
E-Mail Address: myoung@qcstelecom.com

(b) Ongoing operations of the company:

(This company liaison will be the point of contact for FPSC correspondence. This point of contact can be updated if a change is necessary but this must be completed at the time the application is filed).

Name: Micah Sameth  
Title: Secretary\Treasurer  
Street Address: 1 Stair Way  
Post Office Box: \_\_\_\_\_  
City: Monroe  
State: NY  
Zip: 10950  
Telephone No.: (732) 595-7278  
Fax No.: \_\_\_\_\_  
E-Mail Address: mjsameth@qcstelecom.com  
Company Homepage: www.qcstelecom.com

(c) Optional secondary point of contact or liaison:

(This point of contact will not receive FPSC correspondence but will be on file with the FPSC).

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
Post Office Box: \_\_\_\_\_  
City: \_\_\_\_\_  
State: \_\_\_\_\_  
Zip: \_\_\_\_\_  
Telephone No.: \_\_\_\_\_  
Fax No.: \_\_\_\_\_  
E-Mail Address: \_\_\_\_\_

6. Physical address for the applicant that will do business in Florida:

Street address: 1 Stair Way  
City: Monroe  
State: NY  
Zip: 10950  
Telephone No.: (732) 595-7278  
Fax No.: \_\_\_\_\_  
E-Mail Address: info@qcstelecom.com

7. List the state(s), and accompanying docket number(s), in which the applicant has:

(a) **operated** as a telecommunications company. New York

(b) **applications pending** to be certificated as a telecommunications company.  
none

(c) **been certificated** to operate as a telecommunications company. \_\_\_\_\_  
New York

(d) **been denied authority** to operate as a telecommunications company and the circumstances involved. \_\_\_\_\_  
none

(e) **had regulatory penalties imposed** for violations of telecommunications statutes and the circumstances involved. \_\_\_\_\_  
none

(f) **been involved in civil court proceedings** with another telecommunications entity, and the circumstances involved. \_\_\_\_\_  
none

8. The following questions pertain to the officers and directors. Have any been:

(a) adjudged bankrupt, mentally incompetent (and not had his or her competency restored), or found guilty of any felony or of any crime, or whether such actions may result from pending proceedings?  Yes  No

If yes, provide explanation.

(b) granted or denied a certificate in the State of Florida (this includes active and canceled certificates)?  Granted  Denied  Neither

If granted provide explanation and list the certificate holder and certificate number.

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If denied provide explanation.

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(c) an officer, director, and partner in any other Florida certificated telecommunications company?  Yes  No

If yes, give name of company and relationship. If no longer associated with company, give reason why not.

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9. Florida Statute 364.335(1)(a) requires a company seeking a certificate of authority to demonstrate its managerial, technical, and financial ability to provide telecommunications service.

**Note:** *It is the applicant's burden to demonstrate that it possesses adequate managerial ability, technical ability, and financial ability. Additional supporting information may be supplied at the discretion of the applicant. For the purposes of this application, financial statements MUST contain the balance sheet, income statement, and statement of retained earnings.*

- (a) **Managerial ability:** An applicant must provide resumes of employees/officers of the company that would indicate sufficient managerial experiences of each. Please explain if a resume represents an individual that is not employed with the company and provide proof that the individual authorizes the use of the resume.
- (b) **Technical ability:** An applicant must provide resumes of employees/officers of the company that would indicate sufficient technical experiences or indicate what company has been contracted to conduct technical maintenance. Please explain if a resume represents an individual that is not employed with the company and provide proof that the individual authorizes the use of the resume.
- (c) **Financial ability:** An applicant must provide financial statements demonstrating financial ability by submitting a balance sheet, income statement, and retained earnings statement. An applicant that has audited financial statements for the most recent three years must provide those financial statements. If a full three years' historical data is not available, the application must include both historical financial data and pro forma data to supplement. An applicant of a newly established company must provide three years' pro forma data. If the applicant does not have audited financial statements, it must be so stated and signed by either the applicant's chief executive officer or chief financial officer affirming that the financial statements are true and correct.

10. Where will you officially designate as your place of publicly publishing your schedule a/k/a tariffs or price lists)? (Tariffs or price lists MUST be publicly published to comply with Florida Statute 364.04).

Florida Public Service Commission – to be filed before commencing service

Website – Please provide Website address: \_\_\_\_\_

Other – Please provide address: \_\_\_\_\_

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**THIS PAGE MUST BE COMPLETED AND SIGNED**

**REGULATORY ASSESSMENT FEE:** I understand that all telecommunications companies must pay a regulatory assessment fee. A minimum annual assessment fee, as defined by the Commission, is required.

**RECEIPT AND UNDERSTANDING OF RULES:** I understand the Florida Public Service Commission's rules, orders, and laws relating to the provisioning of telecommunications company service in Florida.

**APPLICANT ACKNOWLEDGEMENT:** By my signature below, I, the undersigned owner or officer, attest to the accuracy of the information contained in this application and attached documents and that the applicant has the technical ability, managerial ability, and financial ability to provide telecommunications company service in the State of Florida. I have read the foregoing and declare that, to the best of my knowledge and belief, the information is true and correct. I have the authority to sign on behalf of my company and agree to comply, now and in the future, with all applicable Commission rules, orders and laws.

Further, I am aware that, pursuant to Chapter 837.06, Florida Statutes, ***"Whoever knowingly makes a false statement in writing with the intent to mislead a public servant in the performance of his or her official duty shall be guilty of a misdemeanor of the second degree, punishable as provided in s. 775.082 and s. 775.083."***

I understand that any false statements can result in being denied a certificate of authority in Florida.

**COMPANY OWNER OR OFFICER**

Print Name: James R. Bias Jr.  
Title: President  
Telephone No.: (732) 595-7278  
E-Mail Address: jbias@qcstelecom.com

Signature:  Date: 6/5/2019

# EXHIBIT A(1)

## James Bias

jbias@qcstelecom.com 732-595-QCST

### Summary of Qualifications:

- 45 years of experience in Information Technology
- President of QCSTelecom, Inc. a Telecommunications Carrier in NY state
- Department head of Computer Engineering that oversees a global network

### EXPERIENCE

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#### **QCSTelecom, Inc.**

**President** – July 2018 to present;

**Secretary & Treasurer** – Oct 2013 to July 2018

- Involved in developing early concepts and design of Telecommunications company
- Assisted in design and master plan of 220 miles of aerial fiber network
- Approve and sign all contracts and expenditures for entire build out and ongoing expenses

#### **Watchtower**

**Computer Department – Supervisor** – 2017 to present

- Supervises multiple computer teams comprising of 850 people

**Computer Department Engineering - Department Head** – 2002 to present

- Oversees & manages over 200 people that comprise of 7 teams
- Oversees a global network comprised of 87 international branches and hundreds of remote offices
- Responsible for department budget and expenditure approvals

**Computer Department Engineering – Project Manager** – 1983 - 2015

- Translation software development and programming
- Transitioning from PBX system to VOIP involving over 10,000 phones
- Data Center development – proposal, design, installation at 4 major facilities
- Wi-Fi integration – proposal, design, installation at 4 major facilities with over 4,000 access points
- Develop and program building controls systems and communication systems

#### **Big Y Supermarkets**

**Programmer & Software Development** – 1976 - 1983

- Developed software and programming for building systems – refrigeration, electrical, HVAC
- Develop and design process control systems and SCADA communication networks
- Assisted IBM with regional support of process control and power management systems

## **EXHIBIT A(2)**

**Micah J. Sameth**

Phone: (917) 834-6132

Email: mjsameth@qcstelecom.com

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Entrepreneur with over 20 years of experience in Optical Services and Data Center facilities. Experienced in all aspects of fiber-optic construction, including both inside and outside plants.

### **Experience**

#### **Director of Operations**

QCSTelecom, Inc., Monroe, NY

*January 2014 to Present*

Led permitting and construction process for fiber ring in New York State. Negotiated leases for fiber with New York State entities, including Hudson River crossings and New York State Thruway. Oversaw design and turnup for DWDM network currently carrying 120 channels of IPoDWDM.

#### **Data Center Manager**

Multiple Companies

*January 2007 to January 2014*

Designed and implemented Tier 1 – Tier 3 Data Centers in Greater New York City. Provisioned collocation services and related equipment, including power distribution, network services, security video, and monitoring services.

#### **Telecommunications Cabling Contractor**

Multiple Companies

*November 1994 to February 2007*

Designed and built custom telecommunications, video and home automation systems for residential and commercial clients. Installed, maintained and troubleshot low voltage cabling system, carrier microwave radios, telecom multiplexers, T-1, T-3 and OC-3 circuits, and central office facilities.

**Skills**

OSP Engineering, CWDM/DWDM, IPoDWDM, Data Center, Troubleshooting, Fiber Optics, Telecommunications, Cabling, Security, Electricians, Infrastructure, IT Operations, Facilities Management, Operations Management, System Administration, Virtualization, Network Administration, Network Design, TCP/IP, Software Installation, VoIP, SAN, DHCP, HVAC, Electrical, Project Management, Voice over IP (VoIP), Dwdm, Internet Protocol Suite (TCP/IP), Servers, Switches, Open Source, Open Source Software, Cisco Technologies, Cisco Systems Products, Management, Fiber Optic Networks, OSP Construction, UPS systems, Facilities Operations, Networking, Data Center Design, Facility Operations, UPS, Proficiency Guide, Open Source ERP, Optical Transmission

**Communication**

Experienced public speaker who has done presentations at seminars with thousands of delegates in attendance.

**References**

**Available on Request**

# Haniph A. Latchman

1803 SW 86 Terrace Gainesville FL 32607 (352) 392-4950 [latchman@list.ufl.edu](mailto:latchman@list.ufl.edu) <http://www.list.ufl.edu>

## ACADEMIC BACKGROUND

### **Oxford University, England, October 1983 - July 1986**

*Rhodes Scholar in Residence*

*Degree: D. Phil.*

*Dissertation Title "Frequency Response Methods for Uncertain Multivariable Systems."*

- *Award: Best Paper, CONTROL 85 Conference, Cambridge England, 1985*

### **University of The West Indies, Trinidad and Tobago, 1978-1981**

*University of the West Indies Open Scholar*

*Degree: B.Sc. (1st Class Honors) in Electrical Engineering*

*Major areas: Control Systems, Communications and Electronics.*

- *Award: Best Electrical Engineering Project, 1981.*

### **St. Jago High School, Spanish Town Jamaica, 1971-1978**

*11 G.C.E. O-Levels and 6 G.C.E. A-Levels (Cambridge University)*

- *Award: UWI Open Scholarship, 1978.*

#### **Other Schools:**

**Elementary:** *Bethel Basic School, Bog Walk St. Catherine, Jamaica*

**Primary:** *Tulloch Primary, Bog Walk, St. Catherine*

**Primary:** *Crescent Primary, Spanish Town St. Catherine*

## CONSULTING

- Information Technology Consultant, Qualitech Computer Services, 1987-2006
- Telecommunications Consultant, EPRI and NLDN, 1989-1990
- Internet Consultant, Guardian Newspaper, Trinidad and Tobago 1994
- Network and Internet Consultant, Jamaica Daily Gleaner, 1995
- Computer Forensics Consultant, Heinrich Gordon, Ft. Lauderdale 1999-2000
- Computer Forensics and Internet Expert Witness, Federal Public Defenders , Gainesville Florida, 1999
- Telecommunications Consultant and Expert Witness, Akerman Senterfitt, Orlando Florida, 2000
- Telecommunications Consultant and Expert Witness, Foley and Lardner, Orlando, Florida, 2002-2003.
- Computer Forensics Consultant, Florida Power and Light and David Mishael, PA, Miami Florida, March 2004- December 2005
- Network Consultant, Jamaica Online Information Services, 1992-2006

## PROFESSIONAL

**The University of the West Indies (Mona), Faculty of Engineering**

*Professor, Electrical and Computer Systems Engineering, August 2017 – Present*

**University of Florida Department of Electrical Engineering**

*Professor of Electrical and Computer Engineering, June 2003 – December 2016*  
*Associate Professor of Electrical and Computer Engineering, June 1992- June 2003*  
*Assistant Professor of Electrical Engineering, December 1986 - June 1992.*

*Director and Founder, Laboratory for Information Systems and Telecommunications (LIST), 1991 - 2016.*

*Co-director, Research Laboratory for Control Systems and Avionics, 1989 - present.*

**University of the West Indies**

*Adjunct and Adjunct Professor, Electronics Engineering, August 2014-July 2017*

**Federal University of Juiz de Fora, Brazil, August 2013-December 2014**

**Czech Technical University of Prague (Fulbright Fellowship)**

*Visiting Professor, Circuit Theory, January - July 2001*

**Ecole Polytechnique Federal de Lausanne**

*Visiting Professor, Institut d'automatique, May 1998 – July 1998*

*Visiting Lecturer, Computer Science Department, January 1994 - May 1994*

*External Examiner for M.S. Thesis in Applied Physics, June 1992, 1995*

*External Examiner for University-wide Applied Physics Program, 1993-1995*

**Stanford University**

*Visiting Associate Professor of Electrical Engineering, September 1993 - January 1994*

**University of Bologna, Italy**

*Visiting Associate Professor of Electrical Engineering, December 1991 - January 1992*

**Oxford University**

*Tutor in Mathematics and Numerical Analysis, 1984-1986.*

**Jamaica Telephone Company Ltd., Kingston Jamaica**

*Transmission Engineer, 1981-1986.*

- *Award: Managing Director's Award for Excellence, 1983*

**AWARDS**

*1978 The University of the West Indies Open Scholarship (Carib Cement) for B.Sc (EE)*

*1983 The Jamaica Rhodes Scholarship for D.Phil in Engineering, Oxford University*

*1988 UF TBP EE Teacher of the Year Award*

*1988 UF IEEE/HKN Outstanding Undergraduate Instructor*

*1988 UF Supervisor of the Outstanding Undergraduate Research Project*

*1989 UF Supervisor of the Outstanding Undergraduate Design Project*

*1989 UF TBP Award for Excellence in Undergraduate Engineering Education*

*1990 UF Elected As Eminent Engineer to Membership in TBP,*

*1990 Best Paper Award, Computational Applications Session, American Control Conference, San*

*1990 UF Supervisor of the Outstanding Ph.D. Dissertation*

*1990 UF Outstanding Instructor of Electrical Engineering Core Course*

*1990 UF Supervisor of Outstanding Undergraduate Design Project*

*1990 UF College of Engineering Teacher of the Year Award*

1991 Best Paper Award, Robustness Analysis Session, American Control Conference, Boston,  
 1993 University of Florida Teaching Improvement Project (TIP) Award  
 1994-1998 BellSouth Scholar  
 1995 Best Paper Award, Jamaica Communications Conference (JamCon95), Ocho Rios, Jamaica  
 1996 Listed in "International Who's Who of Professional Management"  
 1997 IEEE Senior Member  
 1998 UF College of Engineering Teacher of the Year Award  
 1998 University of Florida Teacher of the Year  
 1998 Teaching Improvement Project (TIP) Award  
 1999 IEEE 2000 Undergraduate Teaching Award  
 2000 Recipient of Boeing Welliver Summer Fellowship, June –August 2000  
 2001 Recipient of Fulbright Fellowship, Czech Technical University, January – July 2001  
 2002 Best Paper Award, ACM MSWiM  
 2003 Best Paper Award, ICCCT  
 2013-2014 Recipient of the Fulbright Fellowship, Federal University of Juiz de Fora, Brazil  
 2015 Admitted as Life Member of the Academy of Distinguished Teacher Scholars, UF

### **SERVICE TO THE PROFESSION**

Reviewer for IEEE Transactions on Education, 1998-2016  
 Member IEEE Education Society Administration Committee, December 2002- 2016  
 Panel Organizer and Chair, Powerline Communications, ICC 2003), Anchorage Alaska, May 2003  
 Guest Editor, International Journal on Communication Systems – Powerline Communications, April, 2003  
 Guest Editor, Special Issue of the IEEE Communication Magazine – Powerline LANs, April, 2003.  
 Member of the Organizing Committee, 4<sup>th</sup> International Conference on Information Technology Based Higher Education and Training, July 7-9 2003, Markesh, Morocco  
 Member of the Organizing Committee, 3<sup>rd</sup> International Conference on Information Technology Based Higher Education and Training, July 4-6 2002, Budapest Hungary.  
 Session Chair, Robustness with Parametric Uncertainties, 2002 IEEE Conference on Decision and Control (CDC), Las Vegas Nevada, December 2002.  
 Session Chair and Organizer, 2002 Conference on Control Applications (CCA), September 2002, Scotland  
 Session Organizer and Chair, The Eighth Sloan-C International Conference on Asynchronous Learning Networks (ALN), Online Laboratories and Interactive Simulations in ALNs, Orlando, Florida, November 2002  
 Guest Editor, Special Issue of the International Journal of Robust and Nonlinear Control, December 2001.  
 Member of the Organizing Committee, 2<sup>nd</sup> International ITHET Conference, July 4-6, 2001, Kumamoto Japan.  
 Member of Steering Committee for International Conference on Engineering Research Technologies, Sibiu Romania  
 Session Organizer and Chairman, 5<sup>th</sup> International ALN Conference, 2000  
 Session Organizer and Chairman, 4<sup>th</sup> International ALN Conference, 1999  
 Session Chair 1988 ACC  
 Session Chair 1989 ACC  
 Session Chair 1998 CCA  
 Reviewer for International Journal of Control, 1990-present  
 Reviewer for IEEE Transactions on Control, 1989-present  
 Reviewer for IEEE Transactions on DSP, 1995-present  
 Reviewer for IEEE Transactions on Education, 1995-present  
 Reviewer for Interactive Multimedia Electronic Journal of Computer Enhanced Learning, 1999-present  
 Reviewer for John Wiley, 1990-present  
 Reviewer for Prentice Hall 1990-present  
 Reviewer for McGraw Hill 1990-present  
 Reviewer for Oxford University Press 1995-present  
 Reviewer for IEEE Signal Processing Letters 1995-present  
 Review for the National Science Foundation 1997

## Professional Memberships

*Senior Member IEEE, 1987-present*

- *Member Communication, Control Systems, Education and Computer Societies*

## RESEARCH

### Current Research Interests

- *Cyber Security and Smart Grids*
- *IP Telecommunication for Voice Video Data and Mobility*
- *Robustness for Uncertain Multivariable Feedback Control Systems and Computer Control Systems*
- *Communications and Information Theory and Computer Networks, Compression Technologies for Packet and Wireless Networks*
- *Asynchronous Learning Networks and Information Technology-Enhanced Learning*

### Other Ongoing Research Projects

- *Robust Multivariable Control Systems: Analysis and Synthesis*
- *Computer-aided Control System Design*
- *The Calculation of the Structured Singular Value*
- *Robustness Analysis in the Presence of Parametric Uncertainties*
- *ISDN: Research and Applications*
- *Assistive Communications for the Disabled*
- *Low and Variable Bit-rate Speech Coding*
- *Integrated Computer-aided Navigation*
- *Network Management for Frame Relay Mans*
- *ATM Networks with Terrestrial and Space Segment*
- *A Virtual Environment for Teaching Control Systems*
- *An ISDN LAN/BRIDGE*

## AT THE UNIVERSITY OF THE WEST INDIES

### COURSES TAUGHT

*Undergraduate Courses: Signals and Systems, Modern Communications, Control Systems*

*Undergraduate Courses: Graduate Seminar, Data Communications and Networks,*

### Graduate Committee Activities

Type	Number
UWI PhD Advisor	0
UWI MPhil Advisor	3

### UWI MPhil Advisees

1. <i>Stephan Anderson</i>	2. <i>Srivatsan Rajagopal</i>
3. <i>Richard Bernard</i>	4.

## SERVICE

*Assistant Dean for Graduate Studies and Research: August 2018-present*

*Member of the Campus Committee for Graduate Studies and Research, August 2018-present*

## Current Research Projects

- *IP Telephony*
- *Inverted Pendulum*
- *Smart Grids*
- *Collaborative Online Laboratories and Interactive Simulations in Collegiate and K-12 Education*

## PUBLICATIONS

### Books

1. Analog and Digital Control System Design – A Laboratory Manual and Reference Guide, ISBN # 9781119471851, Pages 1-205, **John Wiley & Sons**, 2017.
2. Haniph A. Latchman, Srinivas Katar, Larry Yonge and Sherman Gavette, “*HomePlug AV and IEEE 1901 – A Handbook for PLC Designers and Users*, Pages 1-389, **IEEE Press / Wiley**, 2013
3. H. Latchman, “*Linear Control Systems — A First Course*”, ISBN # 0471-38783-5, Pages 1-205, **John Wiley & Sons**, 1999.
4. H. Latchman, “*Computer Communication Networks and the Internet*”, ISBN 0-07-033952-4, Pages 1-223, **McGraw Hill** 1997.
5. H. Latchman Jung Eun Son and Kartikeya Tripathi, “*Control Systems Analysis and Design – A Laboratory Manual and Handbook*”, ISBN 0-470-08217-8 **John Wiley & Sons**, May, 2006
6. H. Latchman Jung Eun Son and Kartikeya Tripathi, “*Control Systems Analysis and Design – A Laboratory Manual and Handbook*”, 2<sup>nd</sup> Edition, ISBN 0-470-08217-8 **John Wiley & Sons**, January 2010
7. Haniph A. Latchman, “*Frequency Response Methods for Uncertain Systems*”, in preparation
8. Haniph A. Latchman, “*Computer Networks and Queuing Theory*”, in preparation for McGraw Hill
9. Haniph A. Latchman, “*Modern Control Engineering - A Neo-Classical Approach*”, in preparation for Wiley/IEEE PRESS.
10. Haniph A. Latchman, Moises Ribeiro, Powerline Communication Principles and Applications, In Preparation
11. Haniph A. Latchman, “The Mathematics of Engineering” in Preparation

### Book Chapters

S. Galli, H. Lachman, v. Oksman, G. Prasad and L.W. Yonge, “*Multimedia for PLC Systems*”, chapter 8 in **Power Line Communications: Principles, Standards and Applications from multimedia to smart grid**, John Wiley & Sons, 2016.

## Journal Publications

1. Oliveira, Roberto M., Alex B. Vieira, Haniph A. Latchman, and Moises V. Ribeiro. "Medium Access Control Protocols for Power Line Communication: A Survey." **IEEE Communications Surveys & Tutorials** (2018).
2. Ayar, Muharrem, Rodrigo D. Trevizan, Serhat Obuz, Arturo S. Bretas, Haniph A. Latchman, and Newton G. Bretas. "Cyber-physical robust control framework for enhancing transient stability of smart grids." *IET Cyber-Physical Systems: Theory & Applications* 2, no. 4 (2017): 198-206.
3. Ayar, Muharrem, Serhat Obuz, Rodrigo D. Trevizan, Arturo S. Bretas, and Haniph A. Latchman. "A distributed control approach for enhancing smart grid transient stability and resilience." *IEEE Transactions on Smart Grid* 8, no. 6, pp. 3035-3044, 2017
4. Park, B., Hwang, A. and Latchman, H., 2017. Design of Optimized Multimedia Data Streaming Management Using OMDSM over Mobile Networks. **Mobile Information Systems, 2017.**
5. Colen, Guilherme R., Hugo Schettino, Diogo Fernandes, Lucas M. Sirimarco, Fabrício PV Campos, Weiler A. Finamore, Haniph A. Latchman, and Moises V. Ribeiro. "A temporal compressive resource allocation technique for complexity reduction in PLC transceivers." **Transactions on Emerging Telecommunications Technologies** 28, no. 2 (2017).
6. Byungjoo Park, Ankyu Hwang, and Haniph Latchman, "Design of Optimized Multimedia Data Streaming Management Using OMDSM over Mobile Networks," *Mobile Information Systems*, vol. 2017, Article ID 2867127, 13 pages, 2017
7. Oliveira, Thiago, Fernando Andrade, Antonio Picorone, Haniph Latchman, Sergio Netto, and Moises Ribeiro. "Characterization of hybrid communication channel in indoor scenario." *Journal of Communication and Information Systems* 31, no. 1 (2016).
8. Lee, Sunguk, Haniph A. Latchman, and Byungjoo Park. "Efficient handover scheme of proxy mobile IPv6 in wireless local area networks." *Issues* 468 (2016).
9. Facina, Michelle SP, Haniph A. Latchman, H. Vincent Poor, and Moises V. Ribeiro. "Cooperative in-home power line communication: Analyses based on a measurement campaign." **IEEE Transactions on Communications** 64, no. 2 (2016): 778-789.
10. Amarsingh, A, H. Latchman, D. Yang H. Latchman, "Design and Return on Investment Analysis of Residential Solar Photovoltaic Systems", **IEEE Potentials Magazine**, pp. 11-18, July./August 2015
11. Amarsingh, A, H. Latchman, D. Yang, "Narrowband Power Line Communications: Enabling the Smart Grid", **IEEE Potentials Magazine** Vol 33 Issue 1, pages 16-21, 2014
12. Carlton Andre Thompson, Haniph A. Latchman, Nathan Angelacos, Bharath Kumar Pareek , "A Distributed IP-Based Telecommunication System Using Sip" **International Journal of**

13. Haniph A. Latchman, S. Katar, L. Yonge, S. Gavette, "*HomePlug AV and IEEE 1901 –A Handbook for Designers and Users*", **WILEY/IEEE Press**, 384 pages , (ISBN: 978-0-470-41073-8), March 2013
14. Sunguk Lee, Haniph A. Latchman, Byungjoo Park "*Efficient Handover Scheme of Proxy Mobile IPv6 in Wireless Local Area Networks*" **International Journal of Multimedia and Ubiquitous Engineering**, Vol 5. No. 2, pp 21-38, 2010
15. Kyoungnam Seo\* and Haniph Latchman, "*Joint Transceiver Optimization in MC-CDMA Systems*," **IEICE Transactions on Communications**, Vol. E92-B No. 98, pp 2675-2683, 2010
16. Latchman, Haniph and Larry Yonge, "*Multimedia Powerline Communication Systems*", **POWER LINE COMMUNICATIONS - Theory and Applications for Narrowband and Broadband Communications Over Power Lines**, pp 363-383, John Wiley, 2010
17. Latchman, Haniph and Sung-Uk Lee, "*Industry Specifications for Powerline Communication Systems*", **POWER LINE COMMUNICATIONS - Theory and Applications for Narrowband and Broadband Communications Over Power Lines**, pp 443-354, John Wiley, 2010
18. Sunguk Lee, Haniph A. Latchman, Byungjoo Park "*Efficient Handover Scheme of Proxy Mobile IPv6 in Wireless Local Area Networks*" **International Journal of Multimedia and Ubiquitous Engineering**, Vol 5. No. 2, pp 21-38, 2010
19. Kyoungnam Seo\* and Haniph Latchman, "*Joint Transceiver Optimization in MC-CDMA Systems*," **IEICE Transactions on Communications**, Vol. E92-B No. 98, pp 2675-2683, 2010
20. Kyungwoo Kim\*, Haniph Latchman, "Statistical Traffic Modeling of MPEG Frame Size: Experiments and Analysis", In Press, **Journal of Systems, Cybernetics and Informatics**, vol.7, no.6, pp. 54-59, 2010.
21. Haniph A. Latchman and Larry Yonge, "*Multimedia Powerline Communication Systems*", **POWER LINE COMMUNICATIONS - Theory and Applications for Narrowband and Broadband Communications Over Power Lines**, pp 363-383, John Wiley, 2010
22. Latchman, Haniph and Sung uk Lee, "*Industry Specifications for Powerline Communication Systems*", **POWER LINE COMMUNICATIONS - Theory and Applications for Narrowband and Broadband Communications Over Power Lines**, pp 443-354, John Wiley, 2010
23. Sunguk Lee, Haniph A. Latchman, Byungjoo Park "*ELRP-Enhanced Limited Round Robin Mechanism using priority Policy over Bluetooth Networks*" **International journal of Advanced Science and Technology (IJAST)** Volume.6, pp.61-70 , 2009
24. Yu-Ju Lin, Sunguk Lee, Haniph A. Latchman, Byungjoo park "*EVGATOR An Enhanced Visualization Simulator for Networking Protocol Analysis*" **International Journal of Software Engineering and Its Applications**, Vol..3, No..3, pp 19-32, 2009

25. Katar, S.; Krishnam, M.; Newman, R., and Latchman, H., "Harnessing The Potential Of Powerline Communications Using The Homeplug Av Standard", **RF Design**, pp 12-15, August 2008
26. Byungjoo Park, Haniph Latchman, "A Design and Analysis of Seamless Media Streaming Scheme in Mobile IPv6 Networks", *In Revision*, **IEEE Transaction on Broadcasting**, Nov., 2006
27. J. D. Lee, K. Tripathi, H. A. Latchman and J. McNair, "Population based Adaptive Tuning of Constant Contention Window for HomePlug 1.0", **International Journal of Power and Energy Systems**, Vol. 203-4065, pp. 192-205, 2008.
28. Byungjoo Park, Haniph Latchman, "Performance Enhancement for Fast Handover for Mobile IPv6 by Reducing Out-of-Sequence Packets", **Wireless Personal Communications (WIRE)**, Vol 10.1007/s11277-008, pp. 9455-8, March 2008.
29. Byungjoo Park, Youn-Hee Han, Haniph Latchman, "A Study on Optimal Fast Handover Scheme in Fast Handover for Mobile IPv6 (FMIPv6) Networks", **Lecture Notes in Computer Science**, Vol. 4412, pp. 120–129, June 2007.
30. Byungjoo Park, Youn-Hee Han, Haniph Latchman, "An Approach to Reliable and Efficient Routing Scheme for TCP Performance Enhancement in Mobile IPv6 Networks", **Lecture Notes in Computer Science**, Vol. 4412, pp. 160–169, June 2007
31. Byungjoo Park, Youn-Hee Han, Haniph Latchman, "EAP: New Fast Handover Scheme based on Enhanced Access Point in Mobile IPv6 Networks", **International Journal of Computer Science and Net.**, Vol.6, No. 9B, pp. 69-75, Sep., 2006.
32. Byungjoo Park, Haniph A. Latchman, "A DNS based New Route Optimization Scheme with Fast Neighbor Discovery in Mobile IPv6 Networks", **Springer-Verlag Series L.N. in Computer Science**, Vol. 4238, pp.590-593, Sep., 2006.
33. Byungjoo Park, In Huh, Haniph Latchman, "An Enhancement of TCP Fairness in IEEE 802.11 based Multi-hop Ad-hoc Networks", **International Journal of Computer Science and Net.**, Vol.6, No. 8B, pp. 1-8, Aug., 2006.
34. Byungjoo Park, In Huh, Haniph Latchman, "Performance Improvement of TCP with an Efficient Contention Window Control Mechanism (ECWC) in IEEE 802.11 based Multi-hop Wireless Networks", **Springer-Verlag Series L.N. in Computer Science**, Vol. 4104, pp. 365-375, July, 2006.
35. Al-Shamali, S, Oscar D. Crisalle and Haniph A. Latchman, "The Nyquist Robust Sensitivity Margin for Uncertain Closed-loop Systems", **International Journal of Nonlinear and Robust Control**, Vol. 15, 00 619-634, December 2005.
36. Haniph A. Latchman, Kaywan Afkhamie, Srinivas Katar, Brent Mashburn, Richard Newman and Larry Yonge, "High Speed Multimedia Home Networking Over Powerline", **NCTA Technical Papers**, April 3, 2005, Pages 9-22

37. Y. Kwon, Y. Fang and H. Latchman, `` *Performance analysis for a new medium access control protocol in wireless LANs,*'' **ACM Wireless Networks**, Vol.10, No.5, pp.519-529, September 2004
38. Younggoo Kwon, Yuguang Fang, and Haniph A. Latchman, ``*Design of MAC Protocols with Fast Collision Resolution for Wireless Local Area Networks*'', **IEEE Transactions on Wireless Communications**, May 2004, Pages 793-807
39. M.K. Lee, , R. Newman, H.A. Latchman, S. Katar, and L. Yonge, ``*HomePlug 1.0 Powerline Communication LANs –Protocol Description and Comparative Performance Results*'', **Special Issue of the International Journal on Communication Systems on Powerline Communications**, pages 447-473, May, 2003
40. Niovi Pavlidou, Haniph A. Latchman, Richard Newman, Van Hink, ``*Guest Editorial on Powerline Communications*'', **Special Issue of the International Journal on Communication Systems on Powerline Communications**, pages 447-473, May, 2003
41. Y. Lin\*, H. Latchman, S. Katar, and M.K. Lee\*, ``*Theoretical and Field Performance Comparison between 802.11 Wireless and Powerline HomePlug 1.0 Protocols*'', **IEEE Communications Magazine with Focus Theme on Powerline Local Area Networks**, pages 54-63, April, 2003
42. H A. Latchman and Larry Yonge, ``*Powerline Local Area Netowrking*'', **IEEE Communications Magazine with Focus Theme on Powerline Local Area Networks**, pages 31-32, April, 2003
43. Ali F. Almutairi\*, Haniph A. Latchman, Scott L. Miller and Tan Wong, ``*Performance of MMSE Receiver Based CDMA System with Higher Order Modulation Formats in a Fading Channel*'', accepted for publication in the **Wireless Personal Communications**, pages 117-136, 2003
44. H. Latchman and J. Walters, ``*Managing a Network Environment*'', Accepted for publication in **The Internet Encyclopedia, Vol. II, pages 537-550, John Wiley and Sons, August, 2002**
45. Yu-ju Lin\* , Haniph A. Latchman, Minkyu Lee and Srinivas Katar, ``*Power line Communication Network Infrastructure For Smart Homes*'', **IEEE Wireless Communications**, Volume 9, Issue 6, Pages: 104-111, December, 2002.
46. Chuck Baab\* and J. Cockburn, Haniph A. Latchman and Oscar D. Crisalle, ``*Extension of the Nyquist Robust Stability Margin To Systems With Nonconvex Value Sets*'', **International Journal of Robust and Nonlinear Control**, Volume 11, Issue 15, Pages: 1407-141, December, 2001.
47. Haniph A. Latchman and Oscar D. Crisalle, ``*Guest Editorial on Robust Control of Systems in the Presence of Parametric Uncertainties*'', **International Journal of Robust and Nonlinear Control**, Volume 11, Issue 15, Pages: 1394-1395, December, 2001.
48. Haniph A. Latchman and Sheryl M. Latchman, ``*Lectures on Demand in ALN – Enhancing the Online Learning Experience*'' **Journal of Asynchronous Learning Networks**, Vol.5 No. 1, pp. 85-98, June 2001.

49. H. Latchman, C. Salzman\*, D. Gillet and J. Kim\* "*Learning On Demand - A Hybrid Synchronous /Asynchronous Approach*" **IEEE Transaction on Education**, Special Multimedia Edition, Volume: 44. Issue: 2 , May 2001 pp. 208-225
50. Denis Gillet , Haniph A. Latchman, Christophe Salzman\* and Oscar D. Crisalle, "*Virtual Laboratory Experiments in Flexible Learning*", **Journal of Engineering Education**, April 2001, p. 187-191.
51. Ali F. Almutairi\*, Haniph A. Latchman, Scott L. Miller, Tan F. Wong, "*MMSE-Based Fully Distributed Power Control Algorithm*", **IEEE Communications Letters**, Vol. 4, No. 11, P. 346-348, November, 2000.
52. Haniph A. Latchman "*Computer Communication Using a Lectures on Demand Approach in ALN Approach*", **Best Practices in Computer Enhanced Teaching and Learning**, pages 73- 78, June, 2000.
53. Haniph A. Latchman, "*Administrative and Technical Issues in Online Degree Programs – A University of Florida Perspective* ", **Proceedings of the IEEE**, Vol. 88, pp. 709-714, May 2000
54. Haniph A. Latchman and Sheryl M. Latchman, "*Bringing the Classroom to Students Everywhere*", accepted for publication in the **Journal of Engineering Education**, pp. 189-191, April 2000.
55. Fu, Wen-yen\* and H. Latchman, "*An Effective Flow Control Scheme for Self Similar Traffic in ATM Networks* ", **International Journal of Modeling and Simulation**, Vol. 21, No. 1, pp30-39, 2000.
56. Edmonson, W., J. Palacios\*, L. Wang\*. and H. Latchman, "*Global Optimization for Analog Recursive Filters*", **IEEE Signal Processing Letters**, Vol 6, No. 8 pp 199-201, August 1999
57. Latchman, H., C. Salzman\*, D. Gillet and H. Bouzekri\*, "*Information Technology Enhanced Learning Networks for Distance and Local Education*", **IEEE Transactions on Education**, Vol. 42, pp. 247-254, November 1999.
58. H. Latchman, "*Internet Companies* ", **Encyclopedia of Electrical and Electronics Engineering**, Vol. 10 Pp. 645-650, John Wiley & Sons, 1999.
59. Ali F. Almutairi\*, Scott L. Miller and Haniph A. Latchman. "*Tracking of multilevel modulation formats for {DS/CDMA} system in a slowly fading channel*", **DIMACS Series in Discrete Mathematics and Theoretical Computer Science**, vol. 52, pp 19-29. March 1999.
60. H. Latchman and Ramachandran\*, M., "*Overview of the Internet*", **Encyclopedia of Telecommunications**, John Wiley & Sons, pp. 125-149, 1997
61. H. Latchman, Crisalle, O., Basker\*, V., "*The Nyquist Robust Stability Margin, A New Metric for the Stability of Uncertain Systems*", **International Journal of Nonlinear and Robust Control**, Vol. 7, February, 1997. Pp 211-226.
62. J. Chen and H. Latchman, "*Frequency Sweeping Tests for Stability Independent of Delay*", **IEEE Transactions on Automatic Control**, Vol. 40, No. 9, pp 140-145, September 1995

63. H. Latchman and J. Norris\*, "On the Equivalence Between Similarity and Non-similarity Scaling in Robustness Analysis," **IEEE Transactions on Automatic Control**, Volume: 37 Issue: 11, Nov. 1992 pp. 1849-1853
64. H. Latchman and J. Norris\* , "Calculation of the Structured Singular Value with a Reduced Number of Optimization Variables," **IEEE Transactions on Automatic Control**, October 1992, Volume: 37 Issue: 10, Oct. 1992 pp. 1612-1616
65. B. Kouvaritakis, R. Harrison, and H. Latchman, "Stability and Dynamic Performance Bounds for Non-linear Multivariable Systems," **IEE Proceedings, Part D**, Vol. 134, No. 2, March 1987, pages 115-123
66. B. Kouvaritakis and H. Latchman, "Necessary and Sufficient Stability Conditions for Case of Dependent Additive Perturbations," **International Journal of Control**, Vol. 43, No. 6, May 1986, pages 1615-1629.
67. R. Daniel, B. Kouvaritakis and H. Latchman, "Principal Direction Alignment: The Geometric Framework for the Complete Solution to the Mu-problem," **IEE Proceedings Part D**, Vol. 133, No. 2, March 1986, pages 45-56.
68. B. Kouvaritakis and H. Latchman, "Necessary and Sufficient Stability Conditions for Systems with Structured Perturbations: The Major Principal Direction Alignment Principle," **International Journal of Control**, Vol. 42, No. 3, August 1985, pages 575-598.
69. B. Kouvaritakis and H. Latchman, "Block-structured Perturbations, Characteristic Loci and Root Loci," **IEE Proceedings, CONTROL 85**, Vol. 1, July 1985, pages 204-209.
70. B. Kouvaritakis and H. Latchman, "Singular Value and Eigenvalue Techniques in the Analysis of Systems with Structured Uncertainties," **International Journal of Control**, Vol. 41, No. 6, July 1985, pages 1381-1412.

## Refereed Conference Publications

1. Muharrem Ayar, Rodrigo D. Trevizian, Arturo S. Bretas, Haniph Latchman and Serhat Obuz, "A robust decentralized control framework for enhancing smart grid transient stability", **Proc. IEEE Power Engineering Society General Meeting**, 2017
2. Ayar, Muharrem, and Haniph A. Latchman. "A delay and throughput study of adaptive contention window based HomePlug MAC with prioritized traffic classes." In *Power Line Communications and its Applications (ISPLC), 2016 International Symposium on*, pp. 126-131. IEEE, 2016.
3. Ayar, M.; Latchman, H. A.; McNair, J., "An Adaptive MAC for HomePlug Green PHY PLC to Support Realistic Smart Grid Applications," *Proceedings of the 2015 IEEE International Conference on Smartgrid Communications*, pp.592-597, Nov. 2015
4. Ayar, Muharrem and Haniph A. Latchman, "A Delay and Throughput Study of Adaptive Contention Window Based HomePlug MAC with Prioritized Traffic Classes" *2016 International Symposium on Power Line Communications and its Applications (ISPLC)*, Bottrop, Germany, 2016, pp. 126-131.

- 
- Graduate Student MS or Ph. D. Student

5. Colen, G.R. ; de Campos, F.P.V. ; Ribeiro, M.V. ; Latchman, H.A "A bit loading technique with reduced complexity for periodically time varying PLC channel", *Proceedings of the IEEE International Symposium on Power line Communications and its Applications*, pp. 137 – 141, March 2015
6. Gautham Prasad\*, Haniph A. Latchman\*, Youngjoon Lee\*, Weiler A. Finamore, "A Comparative Performance Study of LDPC and Turbo Codes for Realistic Powerline Communication Channels" *proceedings of the IEEE International Symposium on Power line Communications and its Applications*, pp 202-207, Glasgow, Scotland, pp 202-207, 2014
7. Latchman, H, S.Katar, L. Yonge and A. Amarsingh, "High Speed Multimedia and Smart Energy Applications Based on Adaptations of HomePlug AV" *proceedings of the IEEE International Symposium on Power line Communications and its Applications*, pp 143-148, Johannesburg, South Africa, March 2013
8. Youngjoon Lee, Hyunseok Ha, Mintae Hwang, and Haniph A. Latchman, "QoS Augmented CSMA/CA MAC Protocol for High Speed Multimedia Powerline Communications," *Proceedings of IEEE International Symposium on Power Line Communications and Its Applications (ISPLC)*, pp. 236-241, Mar. 2012.
9. Haniph. A. Latchman N. Angelacos and N. Copa, "**Enterprise VoIP Solutions With Alpine Linux**", Online publication <http://www.scribd.com/doc/51678566/Enterprise-VoIP-Solutions-with-Alpine-Linux-slashroots-2011#scribd>, 2011
10. Evan Kriminger\* and Haniph Latchman, "Markov Chain Model of HomePlug CSMA MAC for Determining Optimal Fixed Contention Window Size", *Proceedings of the IEEE International Symposium on Power Line Communications*, pp 399-404, Udine, Italy, April 2011.
11. Youngjoon Lee\*, Mintae Hwang, and Haniph A. Latchman, "Competing Solutions for Multimedia Home Networking," *Proceedings of IIS International MultiConference on Complexity, Informatics and Cybernetics (IMCIC)*, pp. 32-37, Mar. 2011.
12. Sharan Asundi\*, Haniph Latchman and Norman Fitz-Coy, "Attitude Estimation for Picosatellites with Distributed Computing Platform using Murrell's Algorithm of the Extended Kalman Filter", *Proceedings of the 21st AAS/AIAA Space Flight Mechanics Meeting*, Pp 437-450, New Orleans Louisiana, February, 2011.
13. Sreenivasan Narashimhan\* and Haniph A. Latchman, "*Introduction to the Border Gateway Protocol – Case Study Using GNS3*", **Proceedings of the World Multi-Conference on Systems, Cybernetics and Informatics (WMSCI)**, pp. 315-320, Orlando, July 2011.
14. Sumalya Pal\*, Raviteja Gadde\* and Haniph A. Latchman, " *On the Reliability of Voice Over IP (VoIP) Telephony*", accepted for presentation and publication, **Proceedings of the International Conference on Computing, Communications and Control Technologies (CCCT)**, pp. 9-12, Orlando, March 2011.
15. Bian Desong\* and Haniph A. Latchman, "*High Speed Powerline Communications – State of the Art and Beyond*", accepted for presentation and publication, **Proceedings of**

the **International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC)**, Orlando, pp 18-23, March 2011.

16. Sharan Asundi\*, Haniph Latchman and Norman Fitz-Coy, “*Attitude Estimation for Picosatellites with Distributed Computing Platform using Murrell’s Algorithm of the Extended Kalman Filter*”, **Proceedings of the 21<sup>st</sup> AAS/AIAA Space Flight Mechanics Meeting**, Pp 437-450, New Orleans Louisiana, February, 2011.
17. Jung E. Son, Arun Mani, and Haniph a. Latchman, "*Robustness Analysis for MIMO systems with Unstructured Uncertainties*", accepted for **Proceedings of the 8th IEEE International Conference on Control and Automation (CCA)**, pp 1333-1337, China, 2010
18. Kyungwoo Kim, Haniph Latchman, "Statistical Traffic Modeling of MPEG Frame Size: Experiments and Analysis", **Proceedings of the 13th World Multi-Conference on Systems, Cybernetics and Informatics**, Vol. IV, pp. 63-68, July 2009
19. Kyoungnam Seo, Haniph Latchman and Kaywan Afkhamie, “Improved Impulse Detection in Power Line Communication Systems”, **Proceedings of the 2008 IEEE International Conference on Power Line Communications and Its Applications**, pp. 374-379, Korea, April 2008
20. Lee, Sunguk\* and Haniph Latchman, "Comparative Performance Analysis of Recent Powerline and Wireless Technologies for Multimedia Home Networking" proceedings of the **12<sup>th</sup> Annual World Multi-Conference on Systems Cybernetics and Informatics**, Volume III, pp.113-118, Orlando Florida, June, 2008
21. Lee, Sunguk\* ,Haniph Latchman, and Joseph Lin, “*Performance Analysis of Recent Home Networking Technologies for High Definition Video Streaming*” Proceedings of the 1<sup>st</sup> Ecuador International Seminar on Powerline Communications, Vol 1. Page 25-31, Rio Bamba Ecuador, November, 2008
22. Yu-Ju Lin and Haniph A. Latchman, “On the Effects of Maximum Transmission Unit in Power Line Communication Networks”, **Proceedings of the IEEE International Symposium on Power Line Communications**, pp 129-135, Pisa, Italy, March 2007
23. Yu-Ju Lin, Haniph A. Latchman and Richard Newman, “A New TCP and UDP Network Benchmark Suite”, **Proceedings of the Communications and Networking Simulation Symposium**, pp 57-63, Norfolk VA, March 2007
24. Sunguk Lee, Byungjoo Park, Haniph A. Latchman, “Enhanced Limited Round Robin with a Priority Policy for Bluetooth”, **Proceedings of the IEEE International Conference on Advanced Communication Technology**, pp. 182-185, February 2007.
25. Yu-Ju Lin, Sunguk Lee, Haniph A. Latchman, “VisuGATOR - A Visualization Tool for Networking Protocol Analysis”, **Proceedings of the IEEE International Conference on Advanced Communication Technology**, pp. 128-133, February 2007
26. J.D. Lee, K. Tripathi and H. A. Latchman, “*Efficient High Speed Communications Over Electrical Power lines For a Large Number of Users*”, **Proceedings of the Power and Energy Systems (PES 2007) IASTED International Conference**, pp. 86-93, January, 2007

27. Minkyu Lee, Youngjoon Lee, Haniph Latchman, "DVD-Quality Video Transmission on Powerline Channel", **Proceedings of the Power and Energy Systems (PES 2007) IASTED International Conference**, pp. 33-38, January, 2007
28. Srinvas Katar, Brent Mashburn, Richard Newman and Haniph Latchman, "*Allocation Requirements for Supporting Latency Bound Traffic in HomePlug AV Networks*", submitted to **IEEE Global Communications (Globecom 2006)** April, 2006
29. Al-Shamali, Saleh A., Oscar D. Crisalle, Haniph A. Latchman, "Uncertain Homogenous Bilinear Systems: A Variable-Structure Control Approach", accepted for presentation and publication at the **American Control Conference**, Minnesota, April, 2006
30. Byungjoo Park, In Huh, Haniph A. Latchman, "*An Approach to Efficient and Reliable Media Streaming Scheme in Mobile IPv6 Networks*", accepted for publication in proceedings of the **IEEE International Symposium on Broadband Multimedia Systems and Broadcasting (ISBMSB'06)**, 6 pages, April, 2006.
31. Jung E. Son and Haniph a. Latchman, "H-Infinity Design for Parametric Uncertainties using Weights", **Proceedings of the SICE-ICASE International Joint Conference**, pp. 739-744, Korea, October 2006.
32. Jung E. Son and Haniph a. Latchman, "H-Infinity Design using the Static Weight for Parametric Uncertainties", **Proceedings of the International Conference on Control, Automation and Systems**, pp. 520-524, Korea, June 2006
33. Byungjoo Park, Sunguk Lee, Haniph A. Latchman, "*Performance Analysis of Enhanced-Mobile IPv6 with Fast Handover over End-to-End TCP*", accepted for publication in proceedings of the **IEEE Wireless Communications and Networking Conference (WCNC'06)**, pp. 581-586, April, 2006.
34. Srinvas Katar, Brent Mashburn, Kaywan Afkhamie, Haniph Latchman and Richard Newman, "*Channel Adaptation based on Cyclo-Stationary Noise Characteristics in PLC Systems*", **Proceedings of the IEEE International Symposium on Power Line Communications**, Pages 16-21, March, 2006
35. Srinvas Katar, Manjunath Krishnam, Brent Mashburn, Richard Newman and Haniph Latchman, "*Beacon Schedule Persistence to Mitigate Beacon Loss in HomePlug AV Networks*", **Proceedings of the IEEE International Symposium on Power Line Communications**, Pages 184-188, March, 2006
36. Kartikeya Tripathi, Jong-Dae Lee, Haniph Latchman, Janise McNair and Srinivas Katar, "*Contention Window based Parameter Selection to Improve Powerline MAC Efficiency for Large Number of Users*", **Proceedings of the IEEE International Symposium on Power Line Communications**, Pages 189-193, March, 2006
37. Hossein Asghari, Richard Newman and Haniph Latchman, "*Bandwidth Efficient Forward-Error-Correction Coding For High Speed Powerline Communications*", **Proceedings of the IEEE International Symposium on Power Line Communications**, Pages 350-355, March, 2006
38. Byungjoo Park, Sunguk Lee, Haniph A. Latchman, "*A Fast Neighbor Discovery and DAD Scheme for Fast Handover in Mobile IPv6 Networks*", **Proceedings of the IEEE**

**International Conference on Mobile Communications and Learning (MCL'06), pp. 201-206, April, 2006.**

39. Byungjoo Park, Haniph A. Latchman, “*Fast Handover Scheme Based on Enhanced Access Point (EAP) for Mobile IPv6*”, **Proceedings of the IEEE International Conference on Advanced Communication Technology**, Feb., 2006, pp. 759-763.
40. Byungjoo Park, Eunsang Hwang, Haniph A. Latchman, “*An Efficient Fast Neighbor Discovery (EFND) Scheme to Reduce Handover Latency in Mobile IPv6*”, **Proceedings of the IEEE International Conference on Advanced Communication Technology**, Feb., 2006, pp. 1306-1310.
41. Byungjoo Park, Jongdae Lee, Haniph A. Latchman, “*An Efficient TCP Mechanism to Reduce Out-of-Sequence Packets in Mobile IPv6*”, **Proceedings of the IEEE International Conference on Advanced Communication Technology**, Feb., 2006, pp. 1115-1118.
42. Kartikeya Tripathi, Janise McNair and Haniph Latchman, “*Directional Antenna based Performance Evaluation of 802.11 Wireless Local Area Network*”, **Proceedings of the Mobility Aware Technologies and Applications (MATA) Conference**, 6 pages, May 2005.
43. Srinivas Katar, Larry Yonge, Richard Newman and Haniph Latchman, “*Efficient Framing and ARQ for High-Speed PLC Systems*”, **Proceedings of the IEEE International Symposium on Powerline Communication and Its Applications (ISPLC)**, April 2005, Pages 27-31.
44. Yu-ju Lin, Haniph A. Latchman, Jonathan Liu and Richard Newman, “*Periodic Contention-Free Multiple Access for Broadband Multimedia Powerline Communication Networks*”, **Proceedings of the IEEE International Symposium on Powerline Communication and Its Applications (ISPLC)**, April 2005, Pages 121-125.
45. Yu-ju Lin, Haniph A. Latchman, Jonathan Liu and Richard Newman, “*Periodic Contention-Free Multiple Access for Powerline Communication Networks*”, **Proceedings of the IEEE Advanced Information Networking and Applications (AINA)**, March 2005, Pages 315-318
46. Brent Mashburn, Haniph A. Latchman, Tim Vandermeij, Larry Yonge, and Kartikeya Tripathi, “*Signal Processing Challenges in the Design of the HomePlugAV Powerline Standard to Ensure Co-existence with HomePlug 1.0.1*”, accepted for publication, **IEEE Signal Processing Advances in Wireless Communications (SPAWC)**, March 15, 2005.
47. Kaywan Afkhamie, Haniph A. Latchman, Larry Yonge, Tim Davidson and Richard Newman, “*Joint Optimization of Transmit Pulse Shaping, Guard Interval Length and Receiver-side Narrow-band Interference Mitigation in HomePlugAV OFDM System*”, accepted for publication, **IEEE Signal Processing Advances in Wireless Communications (SPAWC)**, March 15, 2005.
48. Hughes, J.L.A.; Anderson-Rowland, M.R.; Barnwell, T.P.; Castro, M.; Latchman, H.A.; Papp, D.S.; “*Theme panel: expanding educational opportunities through partnerships and distance learning*”, **Proceedings of the IEEE 34th Annual Frontiers in Education**, October, 2004, Page(s):605 – 606

49. Baowei Ji\*, Archana Rao, Minkyu Lee, Haniph A. Latchman, Srinivas Katar,,  
 “*Multimedia In Home Netoworking*”, **Proceedings of CITSA/ISAS 2004, Volume 1, Network Technologies**, September, 2004, Page Nos: 397-404.
50. Al-Shamali, Saleh A., Oscar D. Crisalle, Haniph A. Latchman, and Baowei Ji , “*A Margin for Robust Stability and Robust Performance*”, **Proceedings of 4th IFAC Symposium on Robust Control Design (ROCOND 2003)**, Milan, Italy (July 25-27, 2003 proceedings to appear in 2004).
51. Al-Shamali, Saleh A., Oscar D. Crisalle, Haniph A. Latchman, "*Derivation of Stability Conditions for a Class of Time-Delay Bilinear Systems*", **Proceedings International Conference on Computer, Communication and Control Technologies and 9th International Conference on Information Systems Analysis and Synthesis**, Orlando, FL, pages 363-367 (2003).
52. Y. Kwon, Y. Fang and H. Latchman, ``*A novel medium access control protocol with fast collision resolution for wireless LANs,*" **The 2003 IEEE International Conference on Computer Communications (INFOCOM'03)**, San Francisco, California, March/April 2003.
53. Chuck Baab\*, Haniph A. Latchman, and Oscar D. Crisalle, “*A Restatement of the Major Principal Direction Alignment Principle for Robustness*”, **Proceedings of the American Control Conference**, pages 4828-4833, 2003.
54. Chuck Baab\*, Haniph A. Latchman, and Oscar D. Crisalle, “*Robustness of Classical Tuning Correlations for Proportional-Integral Controllers*”, **Proceedings of the American Control Conference**, pages 4997-5002, 2003.
55. Saleh H. Al-Shamali\*, Oscar D. Crisalle, and Haniph A. Latchman, “*An Approach to Stabilize Linear Systems with State and Input Delay*”, Proceedings of the American Control Conference, pages 875-880, 2003.
56. Minkyu Lee\*, Haniph A. Latchman, Richard E. Newman, Srinivas Katar, and Larry Yonge, “*Field performance comparison of IEEE 802.11b and HomePlug 1.0*”, **27th Annual IEEE Conference on Local Computer Networks**, Pages: 598-599, 2002
57. Y. Kwon, Y. Fang and H. Latchman, ``*Improving transport layer performance by using novel medium access control protocol with fast collision resolution in wireless LANs,*" **The Fifth ACM International Workshop on Modeling Analysis and Simulation of Wireless and Mobile Systems (MSWiM 2002)** (In conjunction with *ACM MobiCom'2002*), Atlanta, GA, pp.112-119, September 28, 2002
58. Y. Kwon, Y. Fang and H. Latchman, ``*Fast collision resolution (FCR) MAC algorithm for wireless local area networks,*" **IEEE Globecom'2002, Taipei, Taiwan, November 17-21, 2002. Won the IEEE TCGN (Technical Committee on Gigabit Networking) Best Paper Award.**
59. Y. Kwon\*, Y. Fang and H. Latchman, “*Medium Access Control Protocols with Fast Collision Resolution: Supporting Real-Time and Data Services in Wireless LANs,*”, accepted for publication in the **IEEE LCN 2002**, Tampa, Florida ,October 2002, pages 187-196.

60. Y. Kwon\*, Y. Fang and H. Latchman, "*Wireless MAC Protocols Supporting Real-time Services in Wireless LANs*", Proceedings of the Seventeenth International Symposium on Computer and Information Sciences (ISCIS XVII), October 2002 . pages 164-168.
61. Ji, Baowei\*, Haniph A. Latchman, and O. D. Crisalle, "*Interpretation of Static-Weight H-Infinity Design Approaches for Interval Plants*", Accepted for publication **IEEE CDC**, Las Vegas, USA, December, 2002. (6 pages) (Accepted July 2002)
62. Ji, Baowei\*, Haniph A. Latchman, and O. D. Crisalle, "*Robust H-Infinity Stabilization for Interval Plants*", Accepted by **IEEE CCA/CACSD**, pp. 1112-1117, 2002, Glasgow, Scotland, September, 2002.
63. Y. Lin\*, J. Man, J. Liu and H. Latchman, "*Performance Study of VAT/RTP for Supporting VOIP*", **Proceedings of the 6th World Multiconference on Systematics, Cybernetics and Informatics(SCI)**, Orlando, Florida, pp. 289-294, Jul. 14-18, 2002
64. Latchman, Haniph A., Wichai Suharitdamrong\* and Baowei Ji\*, "*Online Virtual Classes: Better Than Being There?*", **Proceeding 2002 IEEE ITHET**, pp 250-255, Budapest, Hungary, August 2002,
65. Haniph A. Latchman, Oscar D. Crisalle, Chuck Baab\* and Baowei Ji\*, "*The Exact Calculation of Real Stability Radii of Systems with Affine Parametric Uncertainties*", **Proceedings of the IEEE Southeastern Symposium on System Theory**, pp. 279-286, Huntsville Alabama, , March 2002.
66. Denis Gillet, Oscar D. Crisalle and Haniph A. Latchman, "*Web-based Experimentation Integration in Curricula: Experience in Deploying Resources Distributed Among Universities*", **Proceedings of the IEEE Southeastern Symposium on System Theory**, pp. 66-70, Huntsville Alabama, March 2002.
67. Juan C. Cockburn, Charles T. Baab\*, Haniph A. Latchman, Oscar D. Crisalle, "*Robust Controller Design for Systems with Nonconvex Value Sets Using and Extension of the Nyquist Robust Stability Criterion*", **Proceedings of the World Multiconference on Systematics (SCI) Cybernetics and Informatics**, Volume XV, p. 349-354, July 2001.
68. Haniph A. Latchman\* and Vaclav Havlicek,, "*KeyElements in Effective E-Learning – Examples in Engineering Education*", **Proceedings of the ICEE (CD-ROM only)**, pp. 1-5, Taipei, Taiwan, August, 2000.
69. Younggoo Kwon\*, Haniph Latchman, and Yuguang Fang, "*Fast Collision Resolution Backoff (FCRB) in Medium Access Control Protocol for Wireless LANs*", **Proc. of World Multiconference on Systematics, Cybernetics and Informatics (SCI)**, Vol.VII, pp.432-437Orlando, USA Jul.2001.
70. Chuck Baab\*, Juan Cockburn, Haniph A. Latchman and Oscar D. Crisalle, "*Extension of the Nyquist Robust Stability Margin To Systems With Nonconvex Value Sets*", **Proceedings of the American Control Conference**, pp. 1414-1419, Arlington Virginia, June 2001.
71. Adam E. J., Crisalle O. D. and Latchman H. A., "*Analysis of the Robustness of the Smith Predictor with parametric Uncertainties*", **AADECA**, Vol. 1, pp.227-232, June, 2000.

72. Adam E. J., Crisalle O. D. and H. A. Latchman, "*Robustness of the Smith Predictor with Respect to Uncertainty in the Time-Delay Parameter*", **Proceedings of the American Control Conference**, Vol. 3, pp. 1452-1457, 2000.
73. Latchman, Haniph A., Denis Gillet, "*A New Approach In The Use Of Multimedia for Technology Enhanced Learning*", **Proceedings of the 2000 American Control Conference**, pp. 3449-3453, June 2000.
74. Denis Gillet, Christophe Salzmänn\*, Haniph A. Latchman and Oscar D. Crisalle, "*Recent Advances in Remote Experimentation*", **Proceedings of the 2000 American Control Conference**, pp. 2955-2956, June 2000.
75. H. Latchman and S. Latchman, "*Online Graduate and Undergraduate Education in Electrical Engineering*" **Proceedings of the Engineering Research Technologies International Conference**, Sibiu Romania, pp. 201-222., November 1999.
76. Adam E. J., Crisalle O. D. y Latchman H. A., "*A New Approach for Evaluating the Robustness of the Smith Predictor*", **Annual Meeting of American Institute of Chemical Engineering - AIChE** , Dallas, Texas, USA, pp. 1. Nov. 1-3, 1999.
77. H. Latchman, "*Real-time and Multimedia Communications Over the Internet – Educational Applications*", **Proceedings of the 16<sup>th</sup> Annual Jamaica Computer Society Conference**, pp. 23-32, October 1999, Kingston Jamaica.
78. Denis Gillet, Christophe Salzmänn\*, Haniph A. Latchman and Oscar D. Crisalle, "A Distributed Laboratory: Supporting Practical Experience in Distance Learning", **Proceedings of the Frontiers in Education Conference, (CD-ROM only)** Sponsored by the IEEE and ASEE societies, Paper No. 1244, pp. 1, Puerto Rico, November, 1999.
79. Haniph A. Latchman, Jonmyon Kim\* and Dave Tingling\*, "*BS and MS Online Degrees Using a Lectures on Demand Approach*", **Proceedings of the ICEE (CD-ROM only)**, Ostrava Czech Republic, August, 1999, pp. 1-10.
80. Christophe Salzmänn\*, Haniph A. Latchman, Denis Gillet and Oscar D. Crisalle, "*Virtual Laboratories and Real-time Experiments in Engineering Education*", **Proceedings of the ICEE (CD-ROM only)**, Ostrava Czech Republic, August, 1999 pp. 1-28.
81. C. Salzmänn\*, Denis Gillet, H. Latchman and O. Crisalle, "*Online Engineering Laboratories: Real-time Control Over the Internet*" **Proceedings of the 1999 ASEE Conference (CD-ROM only)**, June 1999, Charlotte North Carolina, pp. 1-9.
82. Ali F. Almutairi\*, Scott L. Miller and Haniph A. Latchman. "*Performance of Multi-level Modulation in MMSE Receiver Based CDMA Systems*", Proceedings of IEEE Military Communications Conference, pp398-402, June 1999.
83. Ali F. Almutairi\*, Scott L. Miller, Haniph A. Latchman and Tan F. Wong, "*MMSE Based Fully Distributed Power Control Algorithm*" Proceedings of IEEE Military Communications Conference, pp 167-171, June 1999.
84. H. Latchman, "*The Net-Effect on the Business of Education in the Cyber Age*", **Proceedings of the 15<sup>th</sup> Annual Conference of the Jamaica Computer Society**, October, 1998, pp, 51-65, Ocho Rios Jamaica.
85. H. Latchman, K.-L. Hodge\*, O.D. Crisalle, W. Edmonson and K.H. Yen, "*The Critical Perturbation Radius (CPR) Weight in H-infinity Synthesis for Interval Plants*" **Proceedings of the IEEE International Conference on Control Applications**, pp. 975-979, Trieste, Italy, September, 1998.

86. C. Salzmänn\*, H.A. Latchman, D. Gillet and O. Crisalle, "*Requirements for Real-time Experimentation Over the Internet*", **Proceedings of the 1998 International Conference on Engineering Education**, (CD-ROM only) Rio de Janeiro, August, 1998, pp. 1-12.
87. H. Latchman, Sanjeev Tothapilly\*, C. Salzmänn\* and D. Gillet, "*Hybrid Asynchronous and Synchronous Learning Networks in Distance and Local Education*", **Proceedings of the 1998 International Conference on Engineering Education**, (CD-ROM) Rio de Janeiro, August, 1998, pp. 1-11.
88. Fu, W\* and H. Latchman, "*A Self-similarity Based Call Admission Control Scheme for Output Buffered ATM Switches*", **Proceedings of the 7th IEEE Workshop on Computer-Aided Modeling, Analysis and Design of Communications Networks and Links (CAMAD'98)**, pp 37-44, Sao Paulo, Brazil, August 1998.
89. H. M. Mahon\*, O. D. Crisalle, H. Latchman, and K. H. Yen\*, "*A New Method for Computing Robustness Margins for Real Parametric Uncertainties*" **Proceedings of the American Control Conference**, Philadelphia, PA, pp. 1001-1003, June 1998.
90. V. R. Basker\*, H. Latchman, O. D. Crisalle and H. M. Mahon\*, "*A New Perspective on Computing Robustness Margins for Complex Parametric Uncertainties*", **Proceedings of the American Control Conference**, pp 2299-2300, Philadelphia PA, , June 1998.
91. H. Latchman, "*An Asynchronous Learning Networks Approach to Distance (and Local) Education*", **Proceedings of the International Conference on Engineering Education**, August 1997, Chicago Illinois, pp. 1-7, (CD- ROM).
92. H. Latchman, N. Pithwa\*, Yen,K.H\*, Piramuthu, R\*., "*A New Method for Computing Robustness Margins for Complex Parametric Uncertainties*", **Proceedings of CONTROL 97, Mexico**, pp. 187-192, May 1997.
93. Fu, Wenyen\* and H. Latchman., "*A Flow Control Scheme for Video Traffic on ATM Networks*", **Proceedings of the International Conference on Modeling and Simulation**, pp: 47-51, May 1997, Pittsburgh, Pennsylvania.
94. J. Palacios\*, W. Edmonson and H. Latchman, "*Global Optimization for Analog Adaptive Recursive Filters*", **Proceedings of the Fourth International Conference on Approximation and Optimization in the Caribbean**, Vol. 1 pp. 101-117, March 1997, Caracas, Venezuela.
95. H. Latchman, Larkin, J\*., Edmonson, W. and Roy, T\*., "*Compression Technologies for Real-time Packet and Wireless Communications*", **Proceedings of the 15<sup>th</sup> Annual Conference of the Jamaica Computer Society**, pp.76-109, October, 1996.
96. H. Latchman , "*Video Conferencing Applications for Engineering Education*", **SUCCEED Newsletter**, Vol. No. 6, pp. 10-14, June 1996.
97. H. Latchman and Fu, W\*., "*Performance of ATM Networks using Poisson vs. Self-similar Traffic Models*", **Proceedings of the IASTED International Conference on Modeling Simulation and Optimization**, pp.220-235, May, 1996.
98. Sultan, A\*., and H. Latchman, "*An adaptive quantization scheme for MPEG video coders based on HVS (Human Visual System)*", **Proceedings of SPIE vol. 2668**, pp. 181-188, February, 1996.
99. H. Latchman, "*Online Information Systems - In the Caribbean*", **Proceedings of the 14th Annual Jamaica Computer Society Conference**, pp 86-103, October, 1995.

100. Li, Wuhong\*, and H. Latchman, "*PPP/SLIP Evaluation and Performance Analysis*", **Proceedings of The Jamaica Communications Conference (JAMCON95)**, pp 106 - 111, August, 1995.
101. H. Latchman and O. Crisalle, "*Exact Robustness Analysis for Highly Structured Frequency Domain Uncertainties*", **Proceedings of the American Control Conference**, Seattle Washington, pp 3982-3987, June 1995.
102. H. Latchman, Crisalle. O.D. and Yen-Kuo Huei\*, "*A Design Metric for Systems with Parametric Uncertainties*", **Proceedings of the IASTED Conference on Modeling and Simulation**, Pittsburgh, Pennsylvania, pp 588-590, April, 1995.
103. H. Latchman , Lu, S\*., "*Analysis and Optimization of a Partial Buffer Sharing Scheme for ATM Switch Overload Control*", **Proceedings of the Multimedia Computing Conference 1995**, pp 459-483, San Jose, California, February, 1995.
104. Shang-Yi Lu\*, H. Latchman, Wenyen Fu, Abdul Majid Khan, Nimish Shah and Bill Waggener, "*Shared Medium/Output Buffering Schemes in ATM Switching - An Overview and Case Study*," **Proceedings of ICCCN'94**, pp. 345-361, San Francisco, CA, Sept. 1994.
105. H. Latchman, "*The Evolution of Broadband Communications Technology*", **Proceedings of JamCON94, 1994**, p 6, August 1994.
106. Acharya, Madhu\*, K., Bharati Bhalla\*, R.E. Newman-Wolfe. H. Latchman and Randy Chow, "*A Flow Control Model for Computer Network Traffic Using Real-time Measurements*" **Proceedings of the Second International Conference on Telecommunication Systems, Modeling and Analysis**, pp. 141-149 Nashville TN, March 1994.
107. H. Latchman and O. Crisalle, Exact Nyquist-like Stability Results for Systems with Structured Uncertainties, **Proceedings of the IEEE SouthCon**, pp. 162-172, Orlando Florida, June, 1994.
108. Chen, J., and H. Latchman, "*Asymptotic Stability Independent of Delays: Simple Necessary and Sufficient Conditions*", **Proceedings of the American Control Conference**, Baltimore MD, June 1994, pp 1027-1031.
109. G. Basile and H. Latchman, "*Solid State Device for the Measurement of Light Aircraft Roll Attitude*," **Proceedings of the 1993 Instrumentation and Measurement Technology Conference**, pp. 121-131, May 1993.
110. Banerjee, K\*. K.Hyun\*, M. Kim\* and H. Latchman, "*A Real-time Implementation of MPEG Audio Layer I Decoding on the TMS320C25*," pp. 21-35, **Proceedings of TI Conference**, May, 1993.
111. Venkatraman, K\*. R.E. Newman-Wolfe, H.A. Latchman and R. Chow, "*Measurements and Characterizations of Traffic in a University Environment*," **Proceedings of the 30th ACM Southeast Conference**, pages 45-52, April 1993.
112. Chuck Eubank\* and H. Latchman, "*Communications and Control Electronics for the Disabled*," **Proceedings of the RESNA International Conference**, pages 507-509 (and poster/video-tape presentation), June 1992.
113. M. K. Acharya\*, R. E. Newman-Wolfe, H. Latchman, R. Chow, B. Bhalla\*, "*Hierarchical Traffic Characterization of a Local Area Network*" **Proceedings of the**

**International Conference on Computer Networks: Current Status - Future Goals**, pp. FT7-FT-15, Ahmedabad, India, December 10-11, 1992.

114. M. K. Acharya<sup>\*</sup>, R.E. Newman-Wolfe, H. Latchman, R. Chow and B. Bhalla<sup>\*</sup>, "*Real-time Hierarchical Traffic Characterization of a Campus Area Network*," **Proceedings, International Conference on Modeling Techniques and Tools for Computer Performance Evaluation**, pages 113-128. Edinburgh, Scotland, September 1992.
115. Meghani, A.<sup>\*</sup> and H. Latchman, "*H-infinity Methods in the Design of SISO Feedback Systems*," **Proceedings of the IEEE Southeastern Conference**, pages 59-62, June 1992.
116. Lu, Shang-yi<sup>\*</sup> and H. Latchman, "*Simulation of 1.430 D-Channel Access Protocol*," **Proceedings of the IEEE Southeastern Conference**, Pages 268-271, June 1992
117. Alvarez del Pino, F.<sup>\*</sup>, H. Latchman, R. Newman-Wolfe, R. Chow and Y. Lee, "*Performance Analysis and Traffic Characterization of an Ethernet Campus Network - An SMDS Perspective*," **Proceedings of the IEEE Southeastern Conference**, pages 389-391, June 1992
118. H. Latchman and J. Norris<sup>\*</sup>, "*A New Lower Bound for the Structured Singular Value*," **Proceedings of the American Control Conference**, pp. 1935-1936, June 1991.
119. H. Latchman and J. Norris<sup>\*</sup>, "*On the Equivalence between Similarity and Non-similarity Scaling In Robustness Analysis*," **Proceedings of the American Control Conference**, pages 1961-1966, June 1991.
120. H. Latchman and J. Letra<sup>\*</sup>, "*On the Computation of Allowable Bounds for Parametric Uncertainty*," **Proceedings of the American Control Conference**, Vol. 1, pp. 867-868, June 1991.
121. H. Latchman and J. Norris<sup>\*</sup>, "*Calculation of the Structured Singular Value with A Reduced Number of Optimization Variables*," **Proceedings of the American Control Conference**, Vol. 3, pp. 2058-2062, May 1990.
122. H. Latchman and J. Letra<sup>\*</sup>, "*An Indicator for Interaction for Systems under Uncertainties*," **Proceedings of the American Control Conference**, Vol. 3, pp 2031-2032, May 1990.
123. H. Latchman, "*Analysis of Systems with Element-by-Element Bounded Uncertainties*," **Proceedings of the American Control Conference**, Vol. 1, pp. 378-383. June 1988.

## **Non-refereed Publications**

1. "The HomePlug Powerline Communication Standards – In Home, Access and Command and Control", Haniph A. Latchman, **IEEE International Conference on Power Line Communications and Its Applications**, Jeju Island, Korea, April 2008.
2. H. Latchman, "Video Conferencing Applications for Engineering Education", **SUCCEED Newsletter**, Vol. No. 6, 1996, pp. 10-14.

3. H. Latchman, "*A Lightning, Earth Resistivity and Fault Study for Southern Bell States*," **Southern Bell Internal Report**, Pages 1 – 80, February 1991.
4. J. Letra\* and H. Latchman, "*New Sufficient Conditions for Robust Stability of State-space Systems under Parametric Uncertainty*," **University of Florida Internal Report**, pages 1-20, September 1990,
5. H. Latchman and J. Letra\*, "*New Sufficient Conditions for Robust Stability of State-space Systems Under Parametric Uncertainty*," **University of Florida Internal Report**, Pages 1-18, September 1990.
6. H. Latchman, "*An 8096-based Microcontroller Development Environment for Automotive Sensing Applications*," **Intel Innovator**, Pages 2-3, August 1990.
7. H. Latchman and J. Letra\*, "*A Note on the Computation of Allowable Bounds for Parametric Uncertainties*," **Pages 1-15, University of Florida Internal Report**, June 1990.
8. F. del Pino\* and H. Latchman, "*Data Communications Facilities at the University of Florida*," **University of Florida Internal Report**, pages 1-91, April 1990

## Abstracts

1. Latchman, Haniph, A., "*Voice over IP – Driving the Emergence of Free or Low Cost Telephony*", Keynote Address, Emoquad 3<sup>rd</sup> Annual Conference, April 26, 2005
2. Latchman, Haniph A., "*Broadband Powerline Home Networking*", February 6, 2005, IEEE International Solid State Circuits Conference (ISSCC)
3. Latchman, Haniph, A., "*Powerline Communication Technologies*", Jamaica Computer Society Annual Conference, October 2004.
4. Latchman, Haniph A., "*The Blurring of the distinction between on-campus and off-campus education*", *ABET 2003 Annual Meeting, Minneapolis Minnesota, USA.*
5. Latchman, Haniph A., Michael Teitelbaum, "*Sloan Foundation Virtual Education: Where We've Been –Where We Are Going*", **Virtual Education and the Future Role of the University Workshop**, August 8-9 2000, Monterey California
6. H. Latchman, "*Electronic Commerce*", **Proceedings of the 16<sup>th</sup> Annual Jamaica Computer Society Conference**, October 1999, Kingston Jamaica.
7. H. Latchman, "*Challenges and Opportunities in Using the Lectures on Demand Approach*" **Proceedings of the 5<sup>th</sup> International Conference on Asynchronous Learning Networks (Online)**, October 1999, UMUC, Maryland USA
8. Eduardo J. Adam, Oscar D. Crisalle and Haniph A. Latchman, "A New Approach For Evaluating The Robustness of the Smith Predictor", **Proceedings of the AIChE**, September 1999.
9. Haniph A. Latchman and Denis Gillet, "*Lectures on Demand in Asynchronous Learning Networks*" **Proceedings of the 4<sup>th</sup> International Conference on Asynchronous Learning Networks (Online)**, New York, October 1998

10. E. Gorrochategui, D. Gillet, C. Salzmänn\*, R. Longchamp, D. Bonvin, H. Latchman, and O. D. Crisalle, "*Bringing the Laboratory to Remote Students Using Multimedia and the Internet*", **Multimedia in the Classroom: The New Learning Experience Session**, 1997 AICHE Annual Meeting, Los Angeles, California.
11. V. R. Basker\*, H. Latchman, and Oscar D. Crisalle "*The Nyquist Robust Stability Margin for Uncertain MIMO Systems - A New Robustness Measure*", Advances in Control Session, 1996 **Annual AICHE Meeting**, Chicago, IL (1996).
12. Kuo, Y\*, and H. Latchman, "*The Critical Perturbation Radius Weight in H-infinity Synthesis*", **IFAC Conference - International Workshop on Robust Control**, Napa, California, June 1996.
13. H. Latchman and A. Ahmad\*, "*Videoconferencing over the Internet*", **First SUCCEED Annual Conference**, Raleigh March 1994.
14. H. Latchman, "*A Classical Approach of Uncertain Multivariable Systems*," **SIAM 35th Annual Meeting**, Denver Colorado, October 1987.

## Presentations and Invited Lectures

1. Haniph Latchman "*Interactive Voice Video and Data Communications - From the Office to the Home and Everywhere Between*", International Conference on Computing, Communications and Control Technologies (ICCCT), March 30, 2011.
2. Haniph Latchman "*Enterprise VoIP Solutions – with Alpine Linux*", Slashroots Conference University of the West Indies, February 25, 2011.
3. "The HomePlug Powerline Communication Standards – In Home, Access and Command and Control", Haniph A. Latchman, **IEEE International Conference on Power Line Communications and Its Applications**, Jeju Island, Korea, April 2008.
4. Haniph Latchman, "Powerline Communications – Theory and Applications for India", **Indian Institute of Sciences**, Bangalore India, May 2007
5. Haniph Latchman, "Online MS Courses and Degrees – using Asynchronous Learning from The University of Florida", **University of Technology**, Kingston Jamaica, October 2007
6. Haniph Latchman, "Online Education and Recent Advances in Powerline Communications", **University of Zambia**, Lusaka Zambia, November 2007,
7. Haniph Latchman, "Online Education and Recent Advances in Powerline Communications", **University of Zambia**, Lusaka Zambia, November 2007,
8. Haniph Latchman, "Convergence of Voice Video and Data Services – Challenges and Opportunities", various audiences in **Hong Kong, Taiwan, Japan and Korea**, March – April 2008.
9. Latchman, Haniph, A., "*Voice over IP – Driving the Emergence of Free or Low Cost Telephony*", Keynote Address, Emoquad 3<sup>rd</sup> Annual Conference, April 26, 2005

10. Latchman, Haniph A., "*Broadband Multimedia In-Home Communication*", March 16, 2005, Laboratoire d'Automatique, Ecole Polytechnique Federal de Lausanne.
11. Latchman, Haniph A., "*Computing and Information Technologies – Creating a New World of Opportunities*", March 10, 2005, Commencement Address, University of Technology, Jamaica.
12. Latchman, Haniph A., "*Broadband Multimndia Powerline Communication and Internet Access - An Unexpected Solution*", January 29, 2005, ECE Department Seminar.
13. Latchman, Haniph A., "*Broadband Powerline Home Networking*", February 6, 2005, IEEE International Solid State Circuits Conference (ISSCC)
14. Latchman, Haniph, A., "*Powerline Communication Technologies*", Jamaica Computer Society Annual Conference, October 2004.
15. Latchman, Haniph A., "*Building Bridges in Your Career*", Dinthill Technical High School, Commencement Address, July 2004.
16. Latchman, Haniph, A., "*The Latchman Foundation Awards*", Tulloch Primary School, Jamaica, June 29, 2004.
17. Latchman, Haniph A., "*The Blurring of the distinction between on-campus and off-campus education*", *ABET 2003 Annual Meeting, Minneapolis Minnesota, USA.*
18. Latchman, Haniph A. and Frank Mayadas, "*The Development and Use of Lectures on Demand In ALN in Engineering Education*", **AAUP Workshop**, Virginia, December 11, 2000
19. "*Lectures on Demand – a Hands-on Workshop*", Sixth International Conference on Asynchronous Learning Networks, Maryland USA, November 2000.
20. Latchman, Haniph A., Michael Teitelbaum, "*Sloan Foundation Virtual Education: Where We've Been –Where We Are Going*", **Virtual Education and the Future Role of the University Workshop**, August Monterey California
21. "*The Wall-less Classroom: Judicious Use of Information and Computer Technologies in Online Education*", **Keynote Address**, International TechVision 2000 Conference on Technology In Education, Ocho Rios Jamaica, April 27, 2000.
22. "*Real ALN Experiences: Challenges Lessons Learned and Open Issues*", 2000 Engineering Dean's Institute, March 20, 2000, Hilton Head, SC.
23. "*The Development And Use Of Synchronized Multimedia Lectures On Demand In Online Ms And Bs Degree Programs*", ALN Conference and Workshop, March 3, 2000, University of Hawaii, Honolulu, Hawaii.
24. "*The Use of Synchronized StreamingMedia in Online Education*" – Workshop presentation at the International Conference on Engineering Research Technologies, Sibiu Romania, November 1999.
25. "*Electronic Commerce in the Jamaican Context*", **Keynote Address and Executive Session**, **16<sup>th</sup> Annual Conference of the Jamaica Computer Society**, October 1999, Kingston Jamaica.
26. "*Lectures on demand with synchronized streaming media*", **April 08, 1999, Annual SUCCEED Conference, Raleigh N.C.**

27. *"Lectures on Demandin ALN"* – March 16, 1999, **President's Task Force on Federal Training, Washington D.C.**
28. *"Information Technology Enhanced Learning in Distance and Conventional Education"*, June 29, 1998, **Center for Teaching and Learning, Swiss Federal Inst. of Technology Zurich, Switzerland**
29. *"Major Principal Direction Alignment and the Critical Direction in Robust Control Analysis and Design"*, June 19, 1998, **Institut Automatique, Ecole Polytechnique Federal de Lausanne, Switzerland**
30. *"The Design and Use of Asynchronous Learning Networks in Local and Distance Education"* June 23, 1998, **Institut Automatique, Ecole Polytechnique Federal de Lausanne, Switzerland**
31. *"Project SUCCEED and Technology-based Curriculum Delivery"*, **International Colloquium on New Information and Communication Technologies – What do They Add to Higher Education and Continuing Education**, June 24-25, 1998, **Ecole Polytechnique de Lausanne, Switzerland.**
32. *"Distance Education using Hybrid Synchronous and Asynchronous Learning Networks"*, **Teaching and Learning Online Workshop**, April, 1998, **University of Florida (OIR/UCET).**
33. *"Asynchronous Learning Networks"* **1998 SUCCEED Annual Conference**, March, 1998, **Charlotte North Carolina.**
34. *"A Partnership for Global Education"*, **Pontifica Universidad Catolica de Rio de Janiero and the Universidad de Campinas**, Brazil. January, 1998.
35. *"Control Theoretic Approaches to Communication Problems"*, **Ecole Polytechnique Federal de Lausanne**, December 1997.
36. *"Computer Communications and the Internet"*, **BIDC/UWI sponsored Seminar**, Bridgetown, Barbados, August 1997.
37. *"Technology-based Asynchronous Learning Networks"*, **University of Florida Indonesian Faculty Training Program**, December, 1996.
38. *"Packet and Circuit Switched Videoconferencing for Distance Education"*, **University of Florida, Distance Education Forum**, October 1996.
39. *"The Role and Use of Communications and Computer Technology in Education"* - Internet Seminar for **Educators** in Barbados, October 1996.
40. *"Teaching Effectiveness - Techniques and Appropriate Use of Technology"* **Jamaica Online Internet Seminar for Educators** in Jamaica, August 19, 1996.
41. *"Low-cost access to the Internet for Education and Small Business"*, Monthly Meeting of the **Jamaica Computer Society**, Kingston Jamaica, November, 1995.
42. *"Worldwide Wide Area Networking using the Internet"*, **Watchtower Communications**, Brooklyn New York, May 1995.
43. *"An Overview of the Internet - A Service Provider Perspective"*, **Trinidad Guardian**, Port of Spain, Trinidad, April 1995.

44. "Multimedia and Real-time Applications on the Internet", **Digital Transtec Internet Conference**, Kingston Jamaica, April, 1995.
45. "Emerging Telecommunications Technologies and Their Impact on Business, Commerce and Medicine," **Jacksonville Florida Chamber of Commerce**, November 1992.
46. "Broadband ISDN - An Evolving Technology," **AT&T Paradyne**, St. Petersburg, Florida, April 1992.
47. "Telecommunications Research at the University of Florida," **Loral Data Systems**, Sarasota, Florida, March 1992.
48. "Recent Advances in Communications, Computers and Controls," Applied Physics Department, **University of West Indies**, Kingston, Jamaica, May 1991.
49. "Framework for Collaboration in Control Systems Research between the University of Florida and General Electric," **Daytona Beach, Florida, General Electric**, March 1991.
50. "A Lightning, Earth Resistivity and Fault Study for Southern Bell States," H. Latchman, Transmission Engineering Group, **Southern Bell Headquarters**, Atlanta, Georgia, February 1991.
51. "The Data Communications Network at the University of Florida - An SMDS Perspective," **Bell South Services, Southern Bell Headquarters**, Atlanta, Georgia, February 1991.
52. "ISDN Data and Video Applications at the University of Florida," Richard Snelling, Executive Vice-President, **Southern Bell Headquarters**, Atlanta, Georgia, October 1990.

## AT THE UNIVERSITY OF FLORIDA

**Undergraduate Courses:** *Electric Circuits I, Electric Circuits II, Signals and Systems, Communications Laboratory, Communication Systems and Components, Engineering Design, Noise in Devices and Components, Linear Systems Theory (Stanford), Linear Control Systems, Senior Design, State Variables, Analytical Methods in Electrical Engineering*

**Graduate Courses:** *Computer Communications, Modern Control I, Multivariable Control, and Robust Control Systems, Queueing Theory and Data Communications, Linear Systems, Digital Filters, Wireless Communications, Introduction to Digital Signal Processing, Digital Control Systems, Foundations of Digital Signal process,*

**Distance Teaching:** *Graduate Courses in Communications and Control Systems also taught via Videotapes and Satellite with the National Technological University (NTU) and the Florida Engineering Education Delivery System (FEEDS). Also taught at Stanford University and at Motorola in Plantation Florida via live two-way videoconferencing links. Pioneered the use of streaming audio and video for live delivery of courses via the Internet with ALN access to archived multimedia course materials.*

### Graduate Committee Activities

Type	Number
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<b>UF Ph.D. Committee Chair</b>	<b>25</b>
<b>UF Ph.D. Committee Member</b>	<b>40</b>
<b>UF MS Committee Chair</b>	<b>33</b>
<b>UF MS Committee Member</b>	<b>44</b>

*Summary 1986-2016*

**SERVICE**

**University College and Departmental Committees**

- Member of Department Faculty Search Committee, September 2006- January, 2017*
- Member of Department Curriculum Committee, 2005-January, 2017*
- Member of the University of Florida Teacher of the Year Selection Committee, 2002.*
- Faculty Advisor for Instrumentation Society of America – UF Chapter*
- Member, University Distance Continuing and Executive Education (DCE) Committee, 2000*
- Campus ReJanuary, 2017ative, SUCCEED, University of Florida Team Leader, 1993-2000*
- Member of the Board, University Center for Excellence in Teaching (UCET), 1998-January, 2017*
- Member, College Distance Education Committee 1996-1998*
- Member, Department Computer Coordination and Advisory Committee, 1997-January, 2017*
- Member, University Communication and Information Technology (CIT) Committee 1995-1997*
- Chair, Department Computer Coordination and Advisory Committee, 1993-1997*
- Member, Department Computer Coordination and Advisory Committee, 1997-January, 2017*
- Coordinator, Systems and Control Area, 1993-1996*
- Member, Department Teaching Evaluation Committee 1994-1998*
- Member of the Board of the University Center for Excellence in teaching, 1994-January, 2017*
- Member of the University Senate, 1992-1994*
- Member, Rhodes/Marshall Scholarship Selection Committee, 1991- January, 2017*

**Current Reserch**

- *IP Telephony*
- *Inverted Pendulum*
- *Smart Grids*
- *Voice Messaging and Automated Response Systems*
- *Packet Telephony*
- *WorldWide Controls Library - Virtual Online Laboratories and Interactive Simulations*
- *Collaborative Online Laboratories and Interactive Simulations in Collegiate and K-12 Education*

**Equipment Donations**

- *Intel - 8096 Micro-controller development system - \$15,000*
- *Southern Bell - LSI 11 computer system - \$20,000*
- *Motorola - 68HC11 Microcontrollers - \$4,000*
- *Intel - Above-boards and memory - \$3,000*
- *Southern Bell - Digital PABX \$20,000*
- *Mitel - ISDN Express cards and support chips - \$6,000*
- *Southern Bell - ISDN Voice/Data/Video Network - \$150,000*
- *Texas Instruments - C-25 and C-30 DSP Packages - \$10,000*
- *Computone - X-terminals and Communications Equipment - \$17,000*
- *Automated Logic - Environment Control Systems Laboratory and Eikon Software - \$29,000*
- *Harris Corporation - Wireless LANS and Compression, Software and Hardware - \$4,000.00*

## Ph.D. Graduates

1. **Jeff Norris**, "Analysis of Multivariable Systems in the Presence of Uncertainties", 1990
2. **Jose Letra**, "Robust Stability Analysis of Systems Under Parametric Uncertainties", 1991
3. **Lu Shang-yi**, "Integrated Traffic Control Mechanism For ATM Networks", 1994
4. **Kwang Hyun** "Codebook-based High Quality Audio Coder Using Wavelet Transforms", 1996
5. **Wen-yen Fu**, "A Feedback Flow Control Scheme for Self Similar Traffic in ATM Networks", 1997
6. **Kuo-Huei Yen**, "Robustness Analysis of Interval Systems",
7. **Varadharajan Rhadamani Basker**, "Design of Advanced Control Systems for High Performance and Stability under Uncertainty", 1998
8. **Ali Almutairi**, "Design Issues for Minimum Mean Square Error (MMSE) Based-Receiver CDMA Systems", 2000
9. **Y. Kwon**, Medium Access Control Protocols for Wireless Networks, 2002
10. **C. Baab**, MPDA Revisited in the Context of Critical Direction Theory, 2002
11. **Baowei Ji**, Robust Control Design and Analysis with Parametric Uncertainties, 2004
12. **K. Saleh**, Sliding Mode Control and Robustness Analysis, 2004
13. **Yu-Ju Lin** Broadband TDMA protocol with QoS Performance for Powerline Communications, 2004
14. **M.K. Lee** Multimedia Traffic Characterization and Performance Measurements for Powerline LANs, 2004
15. **Hossein Asghari**, Bandwidth Efficient Forward Error Correcting Codes for Impulse Noise, December, 2005
16. **K. Tripathi**, Wireless and Powerline LANs for Multimedia Traffic, 2006
17. **S. Katar**, Quality of Service Design Issues in Multimedia Communications Over Power Line Networks, May, 2006.
18. **B.J. Park**, A Design and Analysis of Reliable and Enhanced Fast Handover Scheme for Mobility Management in IP-based Wireless/Mobile Networks, May, 2007
19. **J. D. Lee**, Optimal Medium Access Control Protocols for Wireless and Powerline Networking, August 2008
20. **Kyoungnam Seo**, Noise Mitigation in Wireless and Powerline Communications, August 2009
21. **Sung-uk Lee**, Multimedia Traffic Analysis and Network Design, May 2010
22. **Kyungwoo Kim**, Modeling And Performance Analysis Of Multimedia Traffic Over Communication Networks, May 2012
23. **Jungeun. Son**, Robust Control Design with Parametric Uncertainties, August 2012
24. **Yongjeon Lee**, Conquering the Harsh Powerline Channel to Support High Speed Multimedia and Smart Grid Applications, Spring 2013.
25. **Carlton Thompson**, A Design And Performance Study Of A Distributed IP-Based Telecommunications (D-IPTS) System, December 2015
26. **Muhareem Ayar**, Efficient MAC algorithms for Smart Grids, August 2017

## UF M.S. (Thesis) Graduates

1. Neal Flanagan	2. Srivatsan Rajagopal
3. Peter Young	4. Joeseeph Larkin
5. Dennis Weilert	6. Tirtha Roy
7. Stephen Varosi	8. Jamie Mulford
9. Felipe Alvarez del Pino	10. Clint Masters

<i>11. Carol C. Jackson</i>	<i>12. Michael Kerlan</i>
<i>13. Amin Meghani</i>	<i>14. Christophe Salzmann</i>
<i>15. Raja Banerjea</i>	<i>16. Werayuth Charoenruengkit</i>
<i>17. Reid Carlisle</i>	<i>18. Sudarsan Vasudevan</i>
<i>19. Attique Ahmed</i>	<i>20. Carlos Rivera</i>
<i>21. Azhar Ahmed Khan</i>	<i>22. Srinivas Katar</i>
<i>23. Abdul Majid Khan</i>	<i>24. Sriram Subramanian</i>
<i>25. Satyaranjan Mukhopadhyay</i>	<i>26. Jose Sanchez</i>
<i>27. Syed Ikram Ali</i>	<i>28. Sanjeev Thottapilly</i>
<i>29. Anwer Sultan</i>	<i>30. Anuj Mundi</i>
<i>31. Mahesh Ramachandran</i>	<i>32. Gautam Batra</i>
	<i>33. Muhareem Ayar</i>

### **Undergraduate Projects:**

*Energy Management System and Building Automation*  
*Aquaculture Control Systems*  
*Lightning Monitoring System*  
*Environmental Control Systems*  
*Computer-aided communications for the severely handicapped*  
*Telemanipulation and Telepresence - Virtual Control Laboratory*  
*IP Telephony*  
*Inverted Pendulum*



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Monroe, New York 10950  
732-595-QCST  
[www.qcstelecom.com](http://www.qcstelecom.com)

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## **EXHIBIT A(4)**

QCSTelecom, Inc. is contracting with Hypower, Inc, an experienced Florida-based electrical and utility contractor, to provide construction, repair and maintenance services in Florida. See <https://www.hypowerinc.com/about/> for more information about Hypower.

**QCSTelecom, Inc.**  
**Statement of Income and Retained Earnings**  
 Years Ended December 31, 2018, 2017, 2016

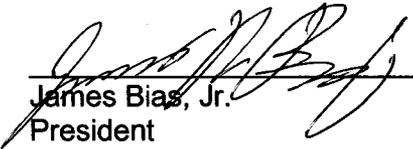
	2018	2017	2016
<b>Operating Revenues</b>			
Telecommunication Services	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]
Other Revenues	[REDACTED]	[REDACTED]	[REDACTED]
Total Operating Revenues	[REDACTED]	[REDACTED]	[REDACTED]
<b>Operating Expenses</b>			
Cost of Telecommunication Services	[REDACTED]	[REDACTED]	[REDACTED]
Network Operating Expenses	[REDACTED]	[REDACTED]	[REDACTED]
Depreciation	[REDACTED]	[REDACTED]	[REDACTED]
General and Administrative	[REDACTED]	[REDACTED]	[REDACTED]
Total Operating Expenses	[REDACTED]	[REDACTED]	[REDACTED]
<b>Operating Income (Loss)</b>	[REDACTED]	[REDACTED]	[REDACTED]
Other Income	[REDACTED]	[REDACTED]	[REDACTED]
Income (Loss) Before Income Taxes	[REDACTED]	[REDACTED]	[REDACTED]
Income Taxes	[REDACTED]	[REDACTED]	[REDACTED]
<b>Net Income (Loss)</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>Retained Earnings, beginning of year</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>Retained Earnings, end of year</b>	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]

**QCSTelecom, Inc.**  
**Balance Sheet**  
As of December 31, 2018, 2017 and 2016

	2018	2017	2016
<b>ASSETS</b>			
Cash	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]
Accounts Receivable	[REDACTED]		
Prepaid Expenses	[REDACTED]		
Security Deposits	[REDACTED]		
Plant and Equipment, net of accumulated depreciation	[REDACTED]		
<b>TOTAL ASSETS</b>	<b>\$ [REDACTED]</b>	<b>\$ [REDACTED]</b>	<b>\$ [REDACTED]</b>
<b>LIABILITIES AND EQUITY</b>			
<b>Liabilities</b>			
Accounts Payable and Accrued Expenses	\$ [REDACTED]	\$ [REDACTED]	\$ [REDACTED]
Deferred Revenue	[REDACTED]		
<b>Total Current Liabilities</b>	[REDACTED]		
<b>Equity</b>			
Common Stock	[REDACTED]		
Additional Paid-In Capital	[REDACTED]		
Retained Earnings	[REDACTED]		
<b>Total Equity</b>	[REDACTED]		
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>\$ [REDACTED]</b>	<b>\$ [REDACTED]</b>	<b>\$ [REDACTED]</b>

**CERTIFICATION OF OFFICER**

I, James Bias, Jr., the President of QCSTelecom, Inc., in the absence of audited financial statements, hereby certify that the foregoing Balance Sheet and Statement of Income and Retained Earnings for the years ended December 31, 2018, 2017 and 2016 are true and correct, to the best of my information, knowledge and belief.

  
\_\_\_\_\_  
James Bias, Jr.  
President  
QCS Telecom, Inc.

Subscribed and sworn to before me this  
16 day of MAY, 2019

  
\_\_\_\_\_  
Notary Public

Commission expires 11/19/2020

LINDA L. CHRISTIANSON  
Notary Public, State of New York  
No. 01CH6272614  
Qualified in Kings County  
Commission Expires November 19, 2020

**CERTIFICATION OF OFFICER**

I, James Bias, Jr., the President of QCSTelecom, Inc., in the absence of audited financial statements, hereby certify that the foregoing Balance Sheet and Statement of Income and Retained Earnings for the years ended December 31, 2018, 2017 and 2016 are true and correct, to the best of my information, knowledge and belief.

  
James Bias, Jr.  
President  
QCS Telecom, Inc.

Subscribed and sworn to before me this  
1<sup>st</sup> day of MAY, 2019

  
Notary Public

Commission expires 11/19/2020

LINDA L. CHRISTIANSON  
Notary Public, State of New York  
No. 01CH6272614  
Qualified in Kings County  
Commission Expires November 19, 2020