

# MOHAMMAD S. ALAM

Fellow - IEEE, OSA, SPIE, IoP, IS&T, IAPR, AAIA, IET and AAAS

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## EDUCATION

- Ph.D. Electrical Engineering, University of Dayton, Dayton, Ohio, 1992
- M.S. Computer Engineering, Wayne State University, Detroit, Michigan, 1989
- M.S. Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology (BUET), 1985
- B.S. Electrical and Electronic Engineering, BUET, 1983

## CONTINUING EDUCATION

- Negotiation for Senior Executives*, Harvard Law School, Harvard University, Massachusetts, June 2006
- Managing Technical Professionals*, Sloan School of Management, Massachusetts Institute of Technology, December 2003
- Chairing the Academic Department*, American Council on Education, Washington DC, June 2002

## PROFESSIONAL EXPERIENCE

- 2016 - Present Texas A&M University - Kingsville (TAMUK)
  - Special Assistant to the Vice President for Research and Graduate Studies (February 2021 - Present)
  - Dean, Frank H. Dotterweich College of Engineering (August 2016 - January 2021)
  - Head, Texas A&M Engineering Experiment Station (TEES) at TAMUK
  - Interim Executive Director, Eagle Ford Center for Research, Education & Outreach (2017 - 2020)
  - Interim Executive Director, High Performance Computing Center, College of Engineering (2017 - 2018)
  - Professor, Department of Electrical Engineering and Computer Science (2016 - Present)
- 2001 - 2016 University of South Alabama (USA)
  - Chair, Department of Electrical and Computer Engineering (2001 - 2015)
  - Warren H. Nicholson Endowed Chair Professor of Electrical and Computer Engineering (2016)
  - Professor, Department of Electrical and Computer Engineering (2001 - 2016)
  - Director of four research labs (VIPS, HIPS, PIPS and FCOSH labs)
- 1999 - 2001 University of Alabama
  - Associate Professor, ECE Department (on leave from Purdue University - Fort Wayne)
- 1992 - 1999 Purdue University - Fort Wayne
  - Professor of Electrical Engineering (98-99), Associate Professor (97-98), Assistant Professor (92-97)
  - Graduate Faculty Member, Purdue University (1993 - 1999)
  - Graduate Faculty Member, Indiana University (1996 - 1999)
  - Visiting Professor, ECE Department, University of Dayton (1996)
  - Summer Faculty Fellow, Sensor Technology Branch, Wright-Patterson Air Force Base (1996)
  - Visiting Scientist, ITT Industry, Fort Wayne, Indiana (1998)
- 1990 - 1992 Research Assistant, Insight Technology, Inc., Dayton, Ohio (January 1991 - June 1992)
  - Research Assistant, ECE Department, University of Dayton (January 1991 - August 1992)
  - Teaching Assistant, CSE Department, Wright State University (January 1990 - December 1990)
- 1988 - 1989 Research/Teaching Assistant, ECE Department, Wayne State University (Sep. 1988 - Dec. 1989)
  - Teaching Associate, University of Texas at Arlington (May 1988 - August 1988)
- 1983 - 1987 Bangladesh University of Engineering and Technology
  - Assistant Professor, Electrical and Electronic Engineering Department (May 1986 - December 1987)
  - Lecturer, Electrical and Electronic Engineering Department (September 1984 - May 1986)
  - Teaching Assistant, Electrical and Electronic Engineering Department (July 1983 - June 1984)
  - Instructor, BUET Computer Center (1985-1987)
- 1984 - 1984 Assistant Engineer, Bangladesh Atomic Energy Commission

## OTHER RELEVANT EXPERIENCE

- 2004 - 2015 Member, Board of Directors (elected), Southeastern Center for Electrical Engineering Education
- 2012 - 2016 President (elected), Mobile Section of IEEE, Mobile, Alabama
- 2003 - 2006 President/Vice President/Secretary (elected), Southeastern ECE Department Heads Association
- 1996 - 1997 Chair (elected), College Assembly of Representatives, Purdue University - Fort Wayne
- 1994 - 1996 Chairman/Vice Chairman/Secretary (elected), Fort Wayne Section of IEEE, Indiana
- 2002 - 2016 Project Director and Principal Investigator for many large scale multidisciplinary research projects
- 2007 - Present Organizer/Chair of many International Conferences sponsored by IEEE, IET, and SPIE

## AWARDS AND HONORS

- Fellow, IEEE - The Institute of Electrical and Electronics Engineers
- Fellow, IET - The Institution of Engineering and Technology
- Fellow, SPIE - The International Society for Optical Engineering
- Fellow, OSA - The Optical Society of America
- Fellow, IoP - The Institute of Physics
- Fellow, IS&T - Society for Imaging Science & Technology
- Fellow, IAPR - International Association of Pattern Recognition
- Fellow, AAIL - Asia-Pacific Artificial Intelligence Association
- Fellow, AAAS - American Association for Advancement of Science
- Life Fellow, IEB - Institution of Engineers, Bangladesh
- Life Fellow, BCS - Bangladesh Computer Society
  
- Named in the world's top 2% scientists across all fields (list developed by the Stanford University), 2021
- Joseph M. Biedenbach Outstanding Engineering Educator Award, Region 3 of the IEEE, 2016
- IEEE Outstanding Engineer Award, Mobile Area Council of Engineers, 2015
- IEEE Outstanding Engineer Award, Mobile Area Council of Engineers, 2014
- Outstanding Engineer Award, Region 3 of the IEEE, April 2013
- Outstanding Engineer Award, Region 4 of the IEEE, August 1998
- Fellows Traveling Lecturer, Optical Society of America, 2001 - present
- 50<sup>th</sup> Anniversary Recognition as one of the 50 faculty who made outstanding and lasting research contributions in the 50-year history of the University of South Alabama, 2013
- Olivia Rambo McGlothren National Alumni Outstanding Scholar Award, University of South Alabama, September 2005
- Excellence in Research Award, College of Engineering, University of South Alabama, May 2005
- IEEE Energy Systems Committee Prize Paper Award, *IEEE Industry Applications Society Annual Meeting*, Seattle, 2004
- Scholar of the Year Award, Phi Kappa Phi, University of South Alabama, Mobile, April 2003
- Best Paper Award for an invited paper presented at the *10<sup>th</sup> International Conference on Systems Research, Informatics and Cybernetics*, Baden-Baden, Germany, 17-21 August 1998
- George Rappaport Best Paper Award (second runner up) for a paper presented at the *50<sup>th</sup> IEEE National Aeronautics and Electronics Conference*, Dayton, Ohio, 13-17 July 1998
- Convocation Recognition of Outstanding Faculty for Exceptional Contributions to the University by the Vice Chancellor of Academic Affairs, Purdue University - Fort Wayne, August 25, 1997
- Second Best Paper Award (co-authored with students) for a paper presented at the *49<sup>th</sup> IEEE National Aeronautics and Electronics Conference*, Dayton, Ohio, 14-18 July 1997
- Excellence in Research Award, School of Engineering and Technology, Purdue University - Fort Wayne, 1997
- Researcher of the Year Award, Sigma Xi - the Scientific Research Society, Purdue University - Fort Wayne, 1996
- Excellence in Research Award, School of Engineering and Technology, Purdue University - Fort Wayne, 1993
  
- Outstanding Engineering Educator of the Year Award, Mobile Area Council of Engineers, 2016
- Excellence in Teaching Award, School of Engineering and Technology, Purdue University - Fort Wayne, 1999
- Teacher of the Year Award, Sigma Xi - the Scientific Research Society, Purdue University - Fort Wayne, 1998
- Faculty Colloquium on Excellence in Teaching Award (statewide recognition), Indiana University, 1997
- Excellence in Teaching Award, School of Engineering and Technology, Purdue University - Fort Wayne, 1995
  
- Outstanding Branch Counselor Award, the Institute of Electrical and Electronics Engineers, 1999
- Excellence in Service Award, School of Engineering and Technology, Purdue University - Fort Wayne, 1996
  
- Early Promotion to Professor of Electrical Engineering, Purdue University - Fort Wayne, 1998
- Early Promotion to Associate Professor with Tenure, Purdue University - Fort Wayne, 1997
- Graduate Student Fellowship - University of Dayton, Dayton, Ohio, 1992
- President - Bangladesh Student Association, Wright State University, 1990
- Honors Scholarship - BUET, Dhaka, Bangladesh, 1979 - 1983
- National Talent Scholarship - Chittagong College, Chittagong, Bangladesh, 1977 - 1978

## PROFESSIONAL AFFILIATIONS

- Fellow Member - IEEE Computer Society, IEEE Signal Processing Society, IEEE Photonics Society, IEEE Industry Applications Society, IEEE Communications Society, IEEE Vehicular Technology Society, IEEE Education Society, and IEEE Instrumentation and Measurement Society
- Member - American Society for Engineering Education (ASEE), 1998 - present

- Member - American Institute of Physics (AIP), 1992 - present
- Member - Order of the Engineer, 2004 - present
- Member - IEEE Computer Society Technical Committee on Pattern Analysis and Machine Intelligence, 2010-present
- Member - Mobile Area Council of Engineers (MACE), 2012 - 2016
- Member - ECE Department Heads Association (ECEDHA), 2001 - 2015
- Member - Southeastern ECE Department Heads Association (SECEDHA), 2001 - 2015
- Member - Sigma Xi: The Scientific Research Society, 2006 - present
- Member - Eta Kappa Nu, 2007 - present; Phi Beta Delta, 2003 - present; Phi Kappa Phi, 2003 - present

## PROFESSIONAL SERVICE ACTIVITIES

- **Guest/Co-Guest Editor** - *Optical Engineering*, *Applied Optics*, and *Journal of Computers*
- **Reviewer of research grant proposals for the following agencies**  
NSF, Army Research Office, Department of Energy, Louisiana Board of Regents, Alabama State DEPSCoR Committee, Ukraine National Science Committee, Southeastern Center for Electrical Engineering Education, NRL/ASEE Post-doctoral Research Program, American Association for Advancement of Science, Research Grants Council of Hong Kong
- **Reviewer of book proposals for the following publishers**  
John Wiley & Sons, Mercel-Dekker, Elsevier, Kluwer/Plenum, Academic Press, and IEEE Computer Society
- **Served or serves as a reviewer for 30+ journals including**  
*IEEE Transactions on Image Processing*; *IEEE Trans. on Computers*; *IEEE Trans. on Instrumentation & Measurement*; *IEEE Trans. on Aerospace and Electronic Systems*; *IEEE Trans. on Geoscience & Remote Sensing*; *IEEE Trans. on Industry Applications*; *IEEE Trans. on Education*; *IEEE Trans. on Circuits & Systems for Video Technology*; *Optical Engineering*; *Applied Optics*; *IEEE Trans. on Parallel & Distributed Systems*; *IEEE Journal of Lightwave Technology*
- **Served or serves as a reviewer for 15+ professional conferences including**  
*Int'l Conference on Computer and Information Technology*; *Int'l Conference on Ubi-media Computing*; *Int'l Conference on Advances in Electrical Engineering*; *SPIE Conference on Pattern Recognition and Tracking*; *Int'l Conf. on Graphics and Visualization in Engineering*; *National Aerospace and Electronics Conference*
- **Leadership roles at international conferences**
  1. General Chair, *Int'l Conference on Computer and Information Technology (ICCIT)*, IEEE, 2016 - present
  2. Chair, *Conference on Pattern Recognition and Tracking*, SPIE, 2015 - present
  3. Member, Executive Organizing Committee, *SPIE Defense+Commercial Sensing*, 2017 - present
  4. Member, Program Committee, *The 10<sup>th</sup> Int'l Conference on Image and Graphics*, Beijing, August 23-25, 2019
  5. Co-Chair, *Int'l Conference on Computer and Information Technology*, IEEE, 2015
  6. Chair, Plenary Session, ICCIT, IEEE, 2014 - 2020
  7. Organizer and Chair, Panel on *Ethics and Professional Integrity*, ICCIT, IEEE, December 21-23, 2015
  8. Chair, Technical Committee, ICCIT, 2015 - present
  9. Co-Chair, Int'l Conference on Optical Pattern Recognition, SPIE, 2014 - 2015
  10. Member, Advisory Board, *Int'l Symposium on 3D Imaging, Metrology and Data Security*, OSA, Sept. 26-29, 2015
  11. Organizer and Chair, *Responsible Conduct in Research*, ICCIT, IEEE, Dhaka, December 22-23, 2014
  12. Organizer and Chair, Panel on *Improving Engineering Education in Bangladesh - Prospects and Challenges*, Int'l Conference on Advances in Electrical Engineering, Dhaka, December 19-21, 2013
  13. Co-Chair, International Program Committee, *Int'l Conference on Computer & Information Technology*, 2014
  14. Chair, International Program Committee, *Int'l Conf. on Advances in Electrical Engineering*, Dhaka, 2011- 2013
  15. Chair, Plenary Session, *Int'l Conf. on Advances in Electrical Engineering*, Dhaka, December 19-21, 2013
  16. Chair, Technical Committee, *Int'l Conf. on Computer, Communication, and Informatics*, India, January 4-6, 2013
  17. Member, Program Committee, *International Conference on Ubi-media Computing*, IEEE, 2008 - present
  18. Member, Program Committee, *Int'l Conf. on Electrical and Electronic Engineering*, IEEE, Tripoli, 2010
  19. Member, Program Committee, *Conference on Optical Pattern Recognition*, SPIE, 2000 - 2013
  20. Member, Program Committee, *Conference on Automatic Target Recognition*, SPIE, 2007 - 2016
  21. Member, Program Committee, *Int'l Conf. on Multispectral Image Processing and Pattern Recognition*, 2006-2008
  22. Member, Program Committee, *Int'l Conf. on Electrical and Computer Engineering*, IEEE, Dhaka, 2002 - 2012
  23. Member, SPIE International Technical Working Group on *Optical Processing and Computing*, 1997 - 2000
  24. Member, Program Committee, *Int'l Conf. on Imaging and Signal Processing in Healthcare & Technology*, 2010
  25. Co-Chair, Plenary Session, *Int'l Conference on Computer and Information Tech.*, Dhaka, December 23-25, 2010
  26. Panel Member, Skills for the 2020 Department Head, *ECEDHA Annual Meeting*, New Orleans, March 2009
  27. Panel Member, *Pro-Innovation Infrastructure*, Global Knowledge Forum, Madinah, June 22-24, 2008
  28. Chair, Plenary Session, *Int'l Conference on Electrical and Computer Engineering*, Dhaka, December 22-24, 2008

29. Co-Chair, *Int'l Conference on Computing, Communications and Networking*, Karur, India, December 18-20, 2008
30. Conference Chair and Organizer, *Int'l Conf. on Graphics and Visualization in Engineering*, Florida, January 3-5, 2007
31. Panel Member, "Composite Filter Functions for ATR," Int'l Symposium on Defense/Security, SPIE, April 9-13, 2007
32. Co-organizer, Panel on *Strategies for Successful ABET Accreditation*, SECEDHA, Atlanta, November 9-10, 2006
33. Co-organizer, Panel on *Ongoing ABET Issues Under EC 2000*, SECEDHA, Atlanta, November 3-4, 2005
34. Member, International Program Committee, ICCIIT, IASTED, St. Thomas, US Virgin Islands, November 22-24, 2004
35. Member, Program Committee, *Int'l Conference on Information Technology Based Higher Education and Training*, IEEE, Istanbul, Turkey, 2004
36. Member, International Program Committee, ICCIIT, Scottsdale, Arizona, November 17- 19, 2003
37. Member, International Program Committee, *The 25th Conference on Opto-electro-techniques and Laser Applications*, Jakarta, Indonesia, October 2-3, 2002
38. Member, Program Committee, *Int'l Conf. on Intelligent Multimedia & Distance Education*, Fargo, June 2001
39. Member, Program Committee, *The 13th International Conference on Parallel and Distributed Computing Systems*, Las Vegas, Nevada, August 8-10, 2000
40. Member, Program Committee, *OSA Annual Meeting*, Santa Clara, September 26 - October 1, 1999
41. Member, Program Committee, *Int'l Symposium on Intelligent Multimedia and Distance Education*, Baden-Baden, Germany, August 2-7, 1999
42. Member, Program Committee, *International Workshop on Optoelectronic and Hybrid Optical/Digital Systems for Image/Signal Processing*, SPIE, Lviv, Ukraine, September 30 - October 3, 1999
43. Co-organizer, *Symposium on New Optical Pattern Recognition Algorithms*, OSA Annual Meeting, Sept. 26-Oct.1, 1999
44. Co-organizer, *Symposium on Pattern Recognition Algorithms and Hardware*, OSA Annual Meeting, October 4-9, 1998
45. Member, Program Committee, *Annual Meeting of the Optical Society of America*, Baltimore, October 4-9, 1998
46. Member, Program Committee, *The 50th National Aerospace and Electronics Conference*, IEEE, July 13 - 17, 1998
47. Member, Editorial Board, Proc. *Int'l Conference on Fiber-optics and Photonics*, IEEE, India, 9-13 December 1996
48. Member, Planning Committee, *IEEE Tactical Communications Conference*, Fort Wayne, April 30 - May 2, 1996
49. Member, Program Committee, *OSA Annual Meeting*, Portland, Oregon, 10-15 September 1995
50. Organizer, *Symposium on Trends in Pattern Recognition Techniques*, OSA Annual Meeting, 10-15 September 1995
51. Organized and/or Chaired over 200 technical sessions at various international conferences within the US and abroad

- **Leadership roles with professional societies/organizations**

1. Member, Kingsville Chamber of Commerce, 2016 - Present
2. Member, Weslaco Chamber of Commerce, 2016 - Present
3. Member, ASEE Engineering Dean's Institute (EDI) Program Committee, San Antonio, April 7-9, 2019
4. Member, ASEE Dean's Council, 2016 - 2021
5. Member, Mobile Area Council of Engineers (MACE), 2013 - 2016
6. Member, Region III Executive Committee of IEEE, 2012 - 2016
7. Member, Fellows Selection Committee, SPIE, 2006 - 2009
8. Member, Alabama State DEPSCoR Committee, 2001 - 2008
9. Member, Richardson Medal Committee, Optical Society of America, 1997 - 2001
10. Member, Region IV Executive Committee of IEEE, 1995 - 1996
11. Faculty Advisor, IEEE Student Branch, Purdue University - Fort Wayne, 1994 - 1999
12. Faculty Advisor, IEEE Student Branch, University of Alabama, 1999 - 2000
13. Advisor, Mayor's Task Force on IT and Infrastructure, City of Mobile, 2005
14. Member, National Engineers Week Planning Committee, Fort Wayne, Indiana, 1995-1996
15. Judge, Regional Science and Engineering Fair, Fort Wayne, Indiana, 1995-1998
16. Proctor, Fort Wayne Center, Royal Conservatory of Music, Canada, 1993

- **Global engagement**

1. Developed articulation agreements with multiple international institutions
  - American International University of Bangladesh
  - United International University
  - Chongqing University
2. Member, International Advisory Board, GIK Institute of Engineering and Technology, Pakistan, 2003 - 2012
3. External Assessor, International Islamic University, Malaysia, 2004 - present
4. External Evaluator, Institutional Quality Assurance, BRAC University, Bangladesh, 2017
5. Co-Supervisor or External Examiner for Ph.D. students at:
  - University of Brittany, Brest, France, 2009 - present
  - Bangladesh University of Engineering and Technology, 2017 - present
  - Multimedia University, Cyberjaya, Malaysia, 2002 - present
  - University of Basrah, Iraq, 1999 - 2004

- University of Malaysia, Kualalumpur, 2008 – present
- VM University, India, Tamil Nadu, 2013 - 2017
- Anna University, Chennai, India, 2009 - present
- Calcutta University, India, 2008 - present
- Indian Institute Technology, Patna, India, 2016 - Present

• **Reviewer of promotion and/or tenure cases for the following institutions**

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|--|---|
| 1. Georgia Institute of Technology       | 12. Temple University, Philadelphia                       |
| 2. University of Missouri - Columbia     | 13. Farmingdale College, State University of New York     |
| 3. Catholic University of America        | 14. International Islamic University, Malaysia            |
| 4. Kuwait University, Safat, Kuwait      | 15. University of Engineering and Technology, Pakistan    |
| 5. University of South Alabama           | 16. Islamic University of Technology, Dhaka, Bangladesh   |
| 6. University of Michigan - Dearborn     | 17. GIK Institute of Engineering and Technology, Pakistan |
| 7. Purdue University - Fort Wayne        | 18. Bangladesh University of Engineering and Technology   |
| 8. Texas A&M University - Corpus Christi | 19. National University of Science & Technology, Pakistan |
| 9. University of West Florida            | 20. Auburn University - Montgomery                        |
| 10. Wichita State University             | 21. University of Denver, Colorado                        |
| 11. Texas A&M University - Kingsville    | 22. University of Southern Mississippi                    |

**UNIVERSITY COMMITTEES**

• **Texas A&M University - Kingsville**

- Chair, College of Education Dean Search Committee, 2019 - 2020
- Member, Campus Master Plan Evaluation Committee, 2020 - Present
- Member, Undergraduate Program Review Committee, 2020 - Present
- Member, Academic Dean's Council, 2016 - 2021
- Member, University Budget Council, 2016 - 2021
- Member, University Space Committee, 2016 - 2019
- Member, Tuition Rebate Committee, 2016 - 2021
- Member, Revenue Generation Committee, 2017 - 2018
- Member, Higher Education Fund (HEF) Committee, 2016 - 2018
- Member, Research Development Fund (RDF) Committee, 2016 - 2018
- Member, Compensation Task Force, 2019
- Chair, Academic/Research Planning Committee, Weslaco Campus, 2016 - 2017

• **University of South Alabama**

- Member, Global Engagement in International Research Committee, 2015 - 2016
- Member, Faculty/Staff Annual Fund Campaign Committee, 2007 - 2016
- Chair, College of Engineering Promotion and Tenure Committee, 2015
- Chair, ECE Department Promotion and Tenure Committee, 2015 - 2016
- Chair, ECE Department Scholarship Committee, 2015 - 2016
- Member, College of Engineering Excellence in Research Awards Committee, 2006-2008, 2015
- Member, Research and Technology Park Advisory Committee, 2002 - 2006
- Member, University Safety Committee, 2004 - 2015
- Member, College of Engineering Dean's Executive Council, 2001 - 2015
- Member, College of Engineering Scholarship Committee, 2007 - 2010
- Member, Mechanical Engineering Department Chair Search Committee, 2004 - 2005
- Chair, ECE Assessment Committee, 2001 - 2015
- Member, Research and Technology Park Director Search Committee, 2004 - 2005
- Member, College of Engineering Dean Search Committee, 2002 - 2003
- Coordinated all activities related to ABET, SACS, student recruitment/retention, academic advising, orientation, curriculum/laboratory development, faculty/staff mentoring/performance evaluation, faculty/staff search and recruitment, financial resource management, promotion and tenure, donor cultivation, secure external and internal funding, research compliance, equipment/facilities development, etc.

• **University of Alabama**

- Member, University Information Technology Committee, 2000 - 2001
- Member, International Program Committee, College of Engineering, 1999 - 2001
- Member, International Student Recruitment Subcommittee, College of Engineering, 1999 - 2001

- Member, Faculty Search Committee, ECE Department, 1999 - 2000
- Member, Computer Engineering Curriculum Review Committee, 1999 - 2001
- Member, Board of Education, Isl. Academy of Alabama, Birmingham, 2000 – 2001
- Member, ECE ABET Visit Preparation/Planning Committee, 2000 - 2001
- Faculty Advisor and Branch Counselor, IEEE Student Branch, University of Alabama, 1999 - 2000
- Actively participated in many community and professional societal activities

- **Purdue University - Fort Wayne**

- Chairman/Vice Chairman/Secretary (elected), School Assembly of Representatives, 1994 - 1997
- Member, University Diversity Council, 1997 - 1998
- Member, University Advisory Committee for People with Disabilities, 1995 - 1998
- Member, University Research Advisory Committee, 1998 - 1999
- Member, University Honors Program Council, 1995 - 1997
- Member, University Academic Appeals Committee, 1995 - 1998
- Member, Faculty Colloquium on Excellence in Teaching (FACET) Committee, 1997 - 1999
- Member, University FACET Award Selection Committee, 1997
- Member, Planning Committee, FACET Workshop on Teaching Excellence, 1997
- Member, Faculty Incentives Subcommittee, Honors Program Council, 1995 - 1996
- Member, Director Search Subcommittee, Honors Program Council 1995 - 1996
- Member, General Education Subcommittee, Honors Program Council, 1996-1997
- Panel Member, Chairs-Deans Workshop on Augmenting Resources, November 6, 1997
- Panel Member, 1995 New Faculty Orientation Series, August 1995
- Member, University Speakers Bureau, 1993-1999
- Faculty Advisor, Student Branch of IEEE, Purdue University - Fort Wayne, 1994 - 1999
- Member, Promotion and Tenure Committee, School of Engineering & Technology, 1998
- Member, School of Engineering & Technology Assembly of Representatives, 1994 - 1997
- Member, School of Engineering & Technology Nominating Committee, 1994 - 1996
- Member, School of Engineering & Technology Assessment Review Committee, 1996
- Member, Excellence Awards Committee, School of Engineering & Technology, 1997
- Member, School of Engineering & Technology Open House Committee, 1993 - 1994
- Member, Departmental Promotion and Tenure Committee, 1992 - 1999
- Member, Departmental Mid-tenure Review Committee (for tenure track faculty), 1998
- Chair, Electrical Engineering Curriculum Evaluation Subcommittee, 1996 - 1997
- Member, Electrical Engineering Curriculum Committee, 1992 - 1999
- Chair, Scholarships of Excellence Committee, 1995
- Member, Scholarships of Excellence Committee, 1994 - 1999
- Member, Faculty Search Committee, 1995, 1997 and 1998
- Member, ABET Accreditation Committee, 1992 - 1999
- Member, Department P&T Procedure Evaluation Committee, 1994
- Member, Senior Design Project Evaluation Committee, 1992 - 1998
- Member, Course Sequence Committee, 1994-1995
- Member, Graduate Program Evaluation Committee, 1994-1995
- Editor - Leading Edge, the Engineering Alumni Newsletter, 1997-1999
- Department Liaison to the University Library, September 1997 - 1999

- **Bangladesh University of Engineering and Technology**

- Member, Bureau of Research, Testing and Consultations
- Member, EEE Department Curriculum Committee
- Member, EEE Department Course Scheduling Committee
- Member, EEE Department Laboratory Management Committee

- **Consultancy**

- *nifina* Technologies, Mobile, Alabama
- Technology, Scientific Services, Inc. (TSSI), Dayton, Ohio
- LIN Technology, Fort Wayne, Indiana
- ITT Industry, Fort Wayne, Indiana
- Bureau of Research, Testing and Consultations, BUET

## TEACHING

### SUMMARY

- Developed and/or taught 20+ undergraduate and graduate courses in electrical/computer/optical engineering and computer science
- Supervised the research work of 16 post-doctoral students and 7 visiting research scholars
- Supervised and/or supervising 55+ dissertation and theses
- Served on the thesis and dissertation committees of many graduate students
- Supervised 35+ undergraduate senior design projects, honors projects and research projects
- Taught several short courses and tutorials at international conferences
- ABET Program Evaluator, Engineering Accreditation Commission, 2009 - present

### TEACHING EXPERIENCE

- **Texas A&M University - Kingsville**
  - Courses Developed and/or Taught - Renewable Energy (EEEN 5303), Sustainable Energy Systems (ESEN 6303), Introduction to Computer Science (ESEN 2304), Research Project (EEEN 5305), Thesis (EEEN 5306), PhD Dissertation (ESEN 6306)
  - New Laboratories Developed - Vision, Imaging, and Photonic Systems (VIPS) Lab, Sustainable Energy Systems (SES) Lab
- **University of South Alabama**
  - Courses Developed and/or Taught - Digital Logic Design (EE 263), Advanced Digital Systems (EE 469/569), Image Processing (EE 566), Biomedical Imaging (EE 567), Pattern Recognition (EE 568), Thesis (EE 599), and Research Integrity and Seminar (EG 501)
  - New Laboratories Developed - Hyperspectral Image Processing Systems (HIPS) Laboratory; Photonic Information Processing Systems (PIPS) Laboratory; Vision, Image Processing and Sensing (VIPS) Laboratory; and Fuel Cell Operated Smart Home (FCOSH) Laboratory
- **University of Alabama**
  - Courses Developed and/or Taught - Digital Computer Fundamentals (ECE 380), Pattern Recognition (ECE 693), Graduate Seminar (ECE 695/696), Advanced Computer Architecture (ECE 584), Computer Vision and Digital Image Processing (ECE 582), Advanced Digital Systems (ECE 493/593), Digital Signal Processing (ECE 485/585), Fiber-optic Communication Systems (ECE 593), Thesis (ECE 599), Dissertation (ECE 699)
  - New Laboratories Developed - Digital Image Processing Laboratory, Optical Information Processing Systems Laboratory, and upgraded the Digital Computer Fundamentals Laboratory (ECE 380 Lab)
- **Purdue University - Fort Wayne**
  - Courses Developed and/or Taught - Optical Computing (EE 595), Advanced Digital Design Using VHDL (EE 585), Computer Architecture (EE 565), Image Processing (EE 563), Introduction to Optical Engineering (EE 495), Digital System Design Using VHDL (EE 472), Optical Fiber Communication Systems (EE 414), Senior Engineering Design (EE 406), Digital Computer Design (EE 365), Microprocessor Systems and Interfacing (EE 362), Microprocessor Systems Laboratory (EE 362L), Electromechanical Machines (EE 320), Digital Logic Design Lab (EE 267), Digital Logic Design (EE 266), Electronics (EE 265), and Electrical Circuits Laboratory (EE 207)
  - New Laboratories Developed - Microprocessor Systems and Interfacing Laboratory (for EE 362L), Digital Logic Design Laboratory (for EE 267), and Optical Information Processing (OIP) Laboratory
- **Bangladesh University of Engineering and Technology**
  - Courses Taught - Electrical Circuits (EE 203), Electrical Machines (EE 205), Electronics I (EE 207), Electronics II (EE 301), Instrumentation and Measurements (EE 307), Control Systems (EE 401), Industrial Electronics (EE 407), Circuits Laboratory (EE 204), Electronics Laboratory (EE 208 and EE 302), Electrical Machines Laboratory (EE 306), Instrumentation Laboratory (EE 308), Control Systems Laboratory (EE 402), Industrial Electronics Laboratory (EE 408), and Microwave Engineering Laboratory (EE 416)
  - Taught several computer programming courses as a part-time instructor for BUET Computer Center

## RESEARCH

### SUMMARY

- Served or serves as the PI (Principal Investigator) or Co-PI of many research projects totaling over **\$17M**
- Sponsors include NSF, NASA, DoE, ARO, DoD, FAA, AFRL, SMDC, Wright-Patt AFB, Alabama Department of Commerce, Purdue Research Foundation, Radiance Tech, *nfin*a Tech, British Petroleum, and ITT Industry
- Established collaborative research with 30+ domestic and international research institutions and private industry
- Led many multidisciplinary flagship initiatives involving multiple campuses and industrial partners
- Research interests include pattern recognition, digital/optical image processing, multispectral/hyperspectral/infrared image processing, biomedical imaging, renewable energy, ultrafast computing, wireless sensor networks

### FUNDED RESEARCH

1. Analytic software platform for stimuli-sensitive tumor targeting and drug delivery via hyperspectral imaging, **\$3.4M**, Under Review, *NIH*, 2022-2027 (PI/PD)
2. Pathways of excellence to promote seamless transitions in the engineering majors (PEP-STEM), **\$2.4M**, *NSF*, 2019-2024 (PI/PD)
3. Cloud computing, data storage and network management system, **\$550,000**, *Alabama Department of Commerce* (\$250,000) and *nfin*a Technologies (\$300,000), 2015-2017 (PI/PD)
4. CCTS Pilot Project - Microwave radar and infrared sensing based breast imaging device for cancer detection, **\$30,000**, *NIH* (subcontract through the University of Alabama in Birmingham), 2016-2017 (Co-PI)
5. Consortium for Alabama renewable energy (CARE) proposal development, **\$20,000**, *Alabama Innovation Fund*, 2016 (PI/PD)
6. Extracting target signatures from vibrometric data, **\$38,500**, *AFRL*, 2015 (PI/PD)
7. Performance evaluation of optimal filters for target detection and tracking, **\$81,224**, *AFRL*, 2012 - 2014 (PI/PD)
8. Hyperspectral imaging based estimation of physical distribution, dispersion and dilution of oil polluted contaminants, **\$87,400**, *British Petroleum*, 2010 - 2011 (PI/PD)
9. Feasibility study of multispectral acoustical imaging techniques for estimating physical distribution of oil-derived substances, **\$15,000**, *British Petroleum (BP)*, 2010 - 2011 (Co-PI)
10. High peak power plasmoid thruster for space propulsion applications, **\$1,537,963**, *NASA*, 2006 - 2010 (PI/PD)
11. Smart energy management and control of fuel cell powered applications, **\$954,621**, *DoE*, 2005 - 2007 (PI/PD)
12. Joint wavelet transform based hyperspectral image processing, **\$1,318,752**, *Space and Missile Defense Command* (joint project with Radiance Tech), 2004 - 2006 (PI/PD)
13. Smart energy management and control system for fuel cell operated microgrid connected neighborhoods, **\$490,539**, *DoE*, 2004 - 2006 (PI/PD)
14. Fuel cell operated smart microgrid community, **\$963,372**, *DoE*, 2003 - 2005 (PI/PD)
15. Grid independent fuel cell operated smart home, **\$1,938,000**, *DoE*, 2002 - 2003 (PI/PD)
16. Cooperative micro-satellite experiment, **\$35,000**, *NSSTC*, 2002 - 2002 (Co-PI)
17. Real time target detection and tracking, **\$331,025**, *ARO*, 2002 - 2005 (PI/PD)
18. Developing effective strategies and performance metrics for automatic target recognition, **\$268,016**, *ARO*, 2001-2004 (PI/PD; joint project with the University of Memphis and Wright State University)
19. Integrated MEMS photonics for computer and communication systems, **\$2,251,000**, *NSF*, 2001 - 2005. (Co-PI; joint project with University of Alabama in Huntsville, Auburn University and Tuskegee University)
20. Real time pattern recognition, **\$21,300**, *NSF (Int'l Program)*, 2001 - 2005 (PI/PD)
21. Low cost precision gyroscope for general aviation, **\$3,643,650**, *FAA*, 2000 - 2001 (Co-PI)
22. Fractional power FAF-based joint transform correlation, **\$56,684**, *NSF*, 1997-1999 (PI/PD)
23. Advanced weather satellite instrumentation, **\$53,762**, *NSF*, 1997 - 1999 (Co-PI)
24. Advanced weather satellite instrumentation," **\$53,762**, *ITT Industry*, 1997-1999 (Co-PI)
25. Infrared image registration and high resolution reconstruction using rotationally translated video sequences, **\$24,998**, *AFOSR*, 1997 (PI/PD)
26. Fast FLIR image registration and high resolution reconstruction using multiple, rotationally translated, aliased frames, **\$7,006**, *Wright-Patterson AFB*, 1996 (PI/PD)
27. Fast infrared image registration and high resolution reconstruction for real time applications, *AFOSR*, **\$9,542**, 1996
28. Ultrafast optical pattern recognition, \$5000, *Purdue Research Foundation (PRF)*, 1995 (PI/PD)
29. Multiobject real-time pattern recognition, \$5000, *PRF*, 1994 (PI/PD)
30. Fractional joint transform correlator, \$5000, *PRF*, 1993 (PI/PD)
31. USA Foundation, Mobile, Alabama (\$8,000)
32. Optical Society of America, Washington DC (\$5,500)

- 33. Purdue Research Foundation, West Lafayette, Indiana (\$6,004)
- 34. MUCIA, West Lafayette, Indiana (\$1,000)
- 35. Dekko Foundation, Fort Wayne, Indiana (\$1,205)
- 36. OCF, Indiana University, Bloomington, Indiana (\$1,400)
- 37. IPFW Foundation, Fort Wayne, Indiana (\$2,885)

#### **FUND RAISING FROM THE PRIVATE SECTOR**

- Texas A&M University - Kingsville (Recently received gifts that are equal or greater than \$25K)
  - \$500K endowment to establish scholarships for engineering students, Welhausen Estate
  - \$250K endowment for the Eugene E. Dawson Professorship in Civil Engineering
  - \$162K for STEM Activities, NR Electric Co.
  - \$100K from Valley Crossing Pipeline to establish an scholarship for Natural Gas Engineering students
  - \$100K endowment from an alumnus for establishing an scholarship for Civil Engineering students
  - \$100K endowment from an alumnus to establish scholarships for Chemical Engineering students
  - \$100K from American Electric Power for facilities expansion
  - \$95K endowment from Bishop Community Services to establish an scholarship for an engineering student
  - \$60K for RGV Engineering Initiative (\$30K - Weslaco Economic Development Corp., \$30K - City of Weslaco)
  - \$50K from Houston Gas Processor's Association to establish an scholarship for Natural Gas Engineering program
  - \$50K endowment from an alumnus to establish an scholarship for Natural Gas Engineering students
  - \$50K Flint Hills Resources to support the Capstone Senior Design Conference
  - \$45K endowment from an alumnus T. Hartsfield to establish an scholarship for Chemical engineering students
  - \$25K from Texas Association of County Engineers & Road Administrators for an scholarship in Civil Engineering
  - \$25K endowment to establish a scholarship for Civil Engineering students, American Society of Civil Engineers
  - \$41M in-kind donation (oil/gas reservoir simulation/modeling software), Schlumberger Technology Corporation
- University of South Alabama
  - \$500K from Alabama Power Foundation to establish Power Electronics and Programmable Logic Controller Labs
  - \$325K from an alumnus to establish the first Endowed Professorship in the ECE Department and the College
  - \$150K from an alumnus to establish an Endowed Graduate Research Assistantship in the ECE Department
  - \$100K endowment fund to establish ECE undergraduate scholarships (50% from an alumnus and 50% matching)
  - \$20K endowment fund from an alumnus for an undergraduate student scholarship
  - \$10K endowment fund from an alumnus for a graduate student scholarship (50% matched by the university)
  - \$500K from Kyoto University, Japan (Molecular Beam Epitaxy machine)
  - \$30K from Minolta/QMS, Inc. (6 Unix workstations, 1 HP workstation, and 4 laser printers)
  - \$57K from Altera Corporation (DE2 FPGA boards)
  - \$50K from Leptis Technologies, Rochester, NY 14618 (Copper Vapor Laser System)
  - \$125K from Operation Technology, Inc., Irvine, CA 92618 (ETAP Thinking Power Software Package)
  - \$53K from FreeScale Corporation (embedded system design equipment)
  - \$61K from Tektronix Corporation (mixed signal oscilloscopes, digital multimeters, and signal generators)

## PUBLICATIONS

### SUMMARY

- 535+ publications: 17 book chapters, 200+ journal publications, and 320+ conference publications
- 125+ keynote/invited papers, seminars, and tutorials presented at international conferences and research institutions
- 30+ project reports (submitted to funding agencies supporting my research projects)
- Organized/chaired many international conferences, symposia, technical sessions, and expert panels
- Served or serves as a reviewer of papers for 30+ refereed journals and 15+ professional conferences
- *Google Scholar Citations*: 7,950+, h-index: 42, i10-index: 149; *ResearchGate*: 28,500+ reads

### PROCEEDINGS/BOOKS/BOOK CHAPTERS/MANUALS

1. M. S. Alam, Ed., *Proceedings of the SPIE Conference on Pattern Recognition and Tracking*, 2016-2021
2. M. S. Alam, Co-Ed., *Proceedings of the SPIE Conference on Optical Pattern Recognition*, 2012-2015
3. M. S. Alam, Ed., *Proceedings of the IEEE Int'l Conference on Advances in Electrical Engineering*, 2013
4. M. S. Alam, Ed., *Proceedings of the IET Int'l Conference on Advances in Electrical Engineering*, 2011
5. M. S. Alam, Ed., *Proceedings of the International Conference on Knowledge Based Development*, June 2008
6. M. S. Alam, Ed., *Proceedings of the Int'l Conference on Graphics and Visualization in Engineering*, Acta Press, 2007
7. M. Alkhatib and M. S. Alam, *IPTV Multimedia Networks: Concepts, Developments, and Design*, IEC Press, 158 pages, 2007
8. M. S. Alam, Ed., *Optical Pattern Recognition Using Joint Transform Correlation*, 687 pages, SPIE Milestone Series (a reference book of selected papers), SPIE Press, Bellingham, WA, August 1999
  
9. P. Sidike, M. S. Alam and V. Sagan, "Robust Pattern Recognition via Joint Transform Correlation," *Advances in Pattern Recognition Research*, Nova Science Publishers, p. 81-89, 2018
10. M. Uzunoglu and M. S. Alam, "Fuel-Cell Systems for Transportation," *Power Electronics Handbook*, Butterworth-Heinemann, p. 1091-1112, 2017
11. M. S. Alam and A. Sakla, "Automatic Target Recognition in Multispectral and Hyperspectral Imagery via Joint Transform Correlation," *Augmented Vision and Reality*, Springer-Heidelberg, Vol. 6, p. 179 - 206, 2014
12. P. Katz, A. Alfalou, C. Brosseau and M. S. Alam, "Correlation and Independent Component Analysis Based Approaches for Biometric Recognition," *Face Recognition: Methods, Applications & Technology*, Nova Publishers, p. 1- 29, 2012
13. M. S. Alam, "Pattern Recognition and Tracking in Forward Looking Infrared Imagery," *Machine Vision Beyond Visible Spectrum*, Springer-Verlag, p. 87-122, 2011
14. M. M. Alkhatib, M. S. Alam, M. Bayoumi, B. Alhalabi and I. Saeed, "The Use of Intelligent Compression for Future IPTV Networks," *Development of Triple Play Services*, International Engineering Consortium (IEC), Vol. 58, p. 1-8, 2006
15. M. S. Alam, M. A. Salam and P. Polu, "CDMA - An Evolutionary Technology," *Annual Review of Communications*, IEC, Vol. 58, p. 435-446, 2005
16. M. Alkhatib, M. S. Alam and I. Saeed, "Triple Play: Current and Emerging Last Mile Network Architectures," *Achieving the Triple Play: Technologies and Business Models for Success*, IEC, Vol. 58, p. 223-231, 2005
17. S. Alsharif and M. S. Alam, "Assuring the Quality of Service for Triple Play," *Achieving the Triple Play: Technologies and Business Models for Success*, IEC, Vol. 58, p. 379-392, 2005
18. M. S. Alam, P. Polu, P. Panati, A. El-Saba and S. Alsharif, "DWDM - Changing the Landscape of Photonics World," *Annual Review of Communications*, IEC, Vol. 57, p. 511-519, 2004
19. M. S. Alam, "Optical Pattern Recognition," *Encyclopedia of Optical Engineering*, Marcel Dekker, p. 1778-1797, 2003
20. A. K. Cherri and M. S. Alam, "Optical Computing Using Trinary Signed-digit Arithmetic," *Optical Switching and Computing for Multimedia Systems*, Marcel Dekker, p. 377 - 446, 2002
21. A. K. Cherri and M. S. Alam, "Ultrafast Arithmetic, Logical and Image Processing Operations Using Polarization-encoded Optical Shadow-casting," *Optical Switching and Computing for Multimedia Systems*, Marcel Dekker, p. 447 - 504, 2002
22. G. Li and M. S. Alam, "Optics for Computing," *Introduction to Information Optics*, p. 475-569, Academic Press, 2001. (This book is also translated into Chinese)
23. M. S. Alam, "Energy Measurement," *Encyclopedia of Electrical and Electronics Engineering*, p. 103-111, Vol. 7, 1998. An enhanced version of this chapter is published as "Electrical Energy Measurement" in the survey volume *Instrumentation and Measurement*, John Wiley & Sons, 2001
24. F. Ahmed, M. S. Alam and M. Kaykobad, "Data Recording," *Encyclopedia of Electrical and Electronics Engineering*, John Wiley & Sons, 1998. An enhanced version of this chapter is also published as "Data Storage and Recording," in the survey volume *Instrumentation and Measurement*, John Wiley & Sons, 2001
25. M. S. Alam and M. A. Karim, "Optical Symbolic Substitution Architectures," *Advances in Electronics and Electron Physics*, Academic Press, Vol. 89, p. 53-92, 1994
26. M. S. Alam, "Microprocessor Systems and Interfacing Laboratory Manual," Published by Purdue University - Fort Wayne, includes twelve experiments on hardware, software and interfacing, 153 pages, 6<sup>th</sup> edition, September 1998
27. M. S. Alam, "Digital Logic Design Laboratory Manual," Published by Purdue University - Fort Wayne, includes twelve experiments, 86 pages, 4<sup>th</sup> edition, January 1998

## JOURNAL PUBLICATIONS (Only 50 out of 200+ are listed, full list available upon request)

1. N. Nasrullah, J. Sang, **M. S. Alam**, M. Mateen, B. Cai and H. Hu, "Automated lung nodule detection and classification using deep learning with multiple strategies," *Sensors*, 19 (17), 3722, 2019
2. M. Tanrioven, T. Akfidan and **M. S. Alam**, "Demonstration and assessment of dynamic performance of a hybrid power system based electric passenger cart," *International Journal of Hydrogen Energy*, Vol. 44, p. 23348-23359, 2019
3. S. Tehsin, S. Rehman, M. Saeed, F. Riaz, A. Hassan, M. Abbas, R. Young and **M. S. Alam**, "Self-organizing hierarchical particle swarm optimization of correlation filters for object recognition," *IEEE Access*, Vol. 5, p. 24495-24502, 2017
4. A. Bal and **M. S. Alam**, "Automatic target tracking in FLIR video sequences using tuned basis functions," *Optical Engineering*, Vol. 55, p. 073102(1-6), 2016
5. P. Sidike, V. Asari and **M. S. Alam**, "Multiclass object detection with single query in hyperspectral imagery using class-associative spectral fringe-adjusted joint transform correlation," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 99, p.1-13, 2015
6. **M. S. Alam** and A. Bal, "Detection of reappearing targets in FLIR video sequences," *Optical Engineering*, Vol. 54, p. 053114(1-6), 2015
7. M. N. Chy, A. Sakla and **M. S. Alam**, "Oil spill detection in ocean environment via ultrasonic imaging and spectral fringe-adjusted joint transform correlation," *Optical Engineering*, Vol. 52, p. 083109(1-7), 2013
8. S. M. A. Bhuiyan and **M. S. Alam**, "Color image trend adjustment using a color bidimensional empirical mode decomposition method," *Journal of Electronic Imaging*, Vol. 21, p. 033019(1-15), 2012
9. J. Sang, S. Ling and **M. S. Alam**, "Efficient text encryption and hiding with double random phase encoding," *Sensors Journal*, Vol. 12, p. 13441-13457, 2012
10. A. Alfalou, C. Brosseau, P. Katz and **M. S. Alam**, "Decision optimization for face recognition based on an alternate correlation plane quantification metric," *Optics Letters*, Vol. 37, p. 1562-1564, 2012
11. H. Oloomi, **M. S. Alam** and M. Rana, "Noise performance evaluation of uncooled infrared detectors," *IEEE Sensors Journal*, Vol. 11, p. 971-987, 2011
12. A. Sakla, S. Sakla and **M. S. Alam**, "Hyperspectral target detection via discrete wavelet based spectral fringe-adjusted joint transform correlation," *Applied Optics*, Vol. 50, p. 5545-5554, 2011
13. **M. S. Alam**, S. F. Goh and S. Dacharaju, "Three-dimensional color pattern recognition using fringe-adjusted joint transform correlation with CIE Lab coordinates," *IEEE Transactions on Instrumentation & Measurement*, Vol. 58, p. 2176-2184, 2010
14. **M. S. Alam** and S. Ochilov, "Spectral fringe-adjusted joint transform correlation," *Applied Optics*, Vol. 49, p. 18-25, 2010
15. J. Khan, **M. S. Alam** and S. M. A. Bhuiyan, "Automatic target detection in FLIR imagery via probabilistic neural networks," *Applied Optics*, Vol. 48, p. 464-476, 2009
16. Y. Sheng, Z. Xin, **M. S. Alam**, L. Xi, L. Feng, "Information hiding based on double random-phase encoding and public-key cryptography," *Optics Express* (online journal of OSA), Vol. 17, p. 3270-3284, 2009
17. J. Sang and **M. S. Alam**, "Fragility and robustness of binary phase-only filter based fragile/semi-fragile digital image watermarking," *IEEE Transactions on Instrumentation and Measurement*, Vol. 57, p. 595-611, 2008
18. O. Onar, M. Uzunoglu and **M. S. Alam**, "Modeling, control and simulation of an autonomous WT/PV/FC/UC hybrid power system," *Journal of Power Sources*, Vol. 185, p. 1273-1283, 2008
19. M. I. Elbakary and **M. S. Alam**, "Superresolution construction of multispectral imagery based on local enhancement," *IEEE Geoscience and Remote Sensing Letters*, Vol. 5, p. 276-279, 2008
20. N. S. Sisworahardjo, **M. S. Alam** and G. Aydinli, "Reliability and availability analysis of low power portable direct methanol fuel cells," *Journal of Power Sources*, Vol. 177, p.412-418, 2008
21. M. Uzunoglu and **M. S. Alam**, "Modeling and analysis of an FC/UC hybrid vehicular power system using a novel wavelet based load sharing algorithm," *IEEE Transactions on Energy Conversion*, Vol. 23, p. 263-272, 2007
22. M. M. Al-Khatib and **M. S. Alam**, "A novel approach for reducing the probability of error in the presence of ISI and Gaussian noise," *Optical Engineering*, Vol. 46, p. 105003, 2007
23. **M. S. Alam** and A. Bal, "Improved multiple target tracking via global motion compensation and optoelectronic correlation," *IEEE Transactions on Industrial Electronics*, Vol. 54, p. 522-529, 2007
24. M. Tanrioven and **M. S. Alam**, "Modeling, control and power quality evaluation of a PEM fuel cell based power supply system for residential use," *IEEE Transactions on Industry Applications*, Vol. 42, p. 1582-1589, 2006
25. O. C. Onar, M. Uzunoglu and **M. S. Alam**, "Dynamic modeling, design and simulation of a wind/fuel cell/ultracapacitor based hybrid power generation system," *Journal of Power Sources*, Vol. 161, p. 707-722, 2007
26. S. M. A. Bhuiyan, **M. S. Alam** and S. R. F. Sims, "Target detection, classification and tracking using MACH and PDCCF filter combination," *Optical Engineering*, Vol. 45, p. 116401, 2006
27. M. M. Al-Khatib and **M. S. Alam**, "New programmable expressions for calculating error probability and error bounds for M-ary PAM systems in the presence of ISI and Gaussian noise," *Optical Engineering*, Vol. 45, p. 095005, 2006
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29. M. Uzunoglu and **M. S. Alam**, "Dynamic modeling, design and simulation of a combined PEM fuel cell and ultra-capacitor system for stand-alone residential applications," *IEEE Transactions on Energy Conversion*, Vol. 21, p. 767-775, 2006
30. M. Tanrioven and **M. S. Alam**, "Impact of load management on reliability assessment of grid independent PEM fuel cell power plants," *Journal of Power Sources*, p. 401-410, Vol. 157, 2006

31. A. Dawoud, **M. S. Alam**, A. Bal and C. Loo, "Target tracking in infrared imagery using weighted composite reference function based decision fusion," *IEEE Transactions on Image Processing*, Vol. 15, p. 404-410, 2006
32. A. Bal and **M. S. Alam**, "Automatic Target tracking in FLIR image sequences using intensity variation function and template modeling," *IEEE Transactions on Instrumentation and Measurement*, Vol. 54, p. 1846-1852, 2005
33. J. F. Khan and **M. S. Alam**, "Target detection in cluttered forward-looking infrared imagery," *Optical Engineering*, Vol. 44, p. 076404, 2005
34. **M. S. Alam**, A. Bal, E. Horache, S. F. Goh, C. Loo, S. Regula and A. Sharma, "Metrics for evaluating the performance of joint transform correlation based target recognition and tracking algorithms," *Optical Engineering*, Vol. 44, p. 067005, 2005
35. M. Tanrioven and **M. S. Alam**, "Reliability modeling and evaluation of grid-connected PEM fuel cell power plants based on Markov models," *Journal of Power Sources*, Vol. 142, p. 264-278, 2005
36. A. Khan, S. Marupaduga, **M. S. Alam** and N. Ekins-Daukes, "Radiation response analysis of wide-Gap P-AllnGaP for super-high-efficiency space photovoltaics," *Applied Physics Letters*, Vol. 85, p. 5218-5220, 2004
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39. **M. S. Alam**, M. Haque, J. Khan and H. Kettani, "Target tracking in forward looking infrared imagery using fringe-adjusted joint transform correlation," *Optical Engineering*, Vol. 43, p. 1407-1413, 2004
40. A. F. Alsamman and **M. S. Alam**, "Invariant face recognition using a projection slice synthetic discriminant function based algorithm," *Optical Engineering*, Vol. 41, p. 87-93, 2002
41. A. K. Cherri and **M. S. Alam**, "Reference phase-encoded fringe-adjusted joint transform correlator," *Applied Optics*, Vol. 40, p. 1216-1225, 2001
42. **M. S. Alam** and J. Predina, "Identification and estimation of nonlinearity in constant voltage biased infrared sensor detected signals," *Optical Engineering*, Vol. 39, p. 3264-3271, 2000
43. **M. S. Alam** and D. Chain, "Efficient multiple target recognition using a joint wavelet transform processor," *Optical Engineering*, Vol. 39, p. 1203-1210, 2000
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46. D. W. Mauritzen and **M. S. Alam**, "Comments on accurate measurement of power, energy, and true rms voltage using synchronous counting," *IEEE Trans. on Instrumentation and Measurement*, p. 1300-1301, Vol. 46, 1997
47. S. Majumder, **M. S. Alam** and R. Gangopadhyay, "Effect of nonuniform laser FM response on the performance of multichannel optical systems using optical amplifiers," *IEEE Journal of Lightwave Technology*, Vol. 15, p. 188-193, 1997
48. **M. S. Alam**, Y. Ahuja, A. K. Cherri and A. Chatterjea, "Symmetrically recoded quaternary signed-digit arithmetic using shared content-addressable memory," *Optical Engineering*, Vol. 35, p. 1141-1149, 1996
49. **M. S. Alam**, "Efficient trinary signed-digit symbolic arithmetic," *Optics Letters*, Vol. 19, p. 353-355, 1994
50. **M. S. Alam** and M. A. Karim, "Fringe-adjusted joint transform correlation," *Applied Optics*, Vol. 32, p. 4344-4350, 1993

**CONFERENCE PUBLICATIONS** (since 2011, full list available upon request, includes 35 invited papers)

1. F. Long, J. Sang, M. S. Alam, C. Huang, and X. Qiao, "Pneumonia classification with capsule network by using X-ray images," *Proc. SPIE*, Vol. 11735, p. 11735S(1-10), April 12-16, 2021
2. Y. Shia, J. Sang, M. S. Alam, X. Liua, and S. Tiana, "MSNet: Multi-scale Network for Crowd Counting," *Proc. SPIE*, Vol. 11735, p. 11735M(1-10), April 12-16, 2021
3. U. Shabbira, J. Sang, M. S. Alam, J. Tana, and X. Xia, "Comparative study on crowd counting with deep learning," *Proc. SPIE*, Vol. 11400, April 26-30, 2020
4. M. A. Rahman and M. S. Alam, "Imperfect nonlinear false data injection attack against largest normalized residual test," *Proceedings of the IEEE PES General Meeting*, Atlanta, August 4-8, 2019
5. P. Banerjee, U. Abeywickrema, H. Zhou, M. S. Alam, G. Nehmetallah, J. Khoury and L. Cao, "Taking correlation from 2D to 3D: Optical methods and performance evaluation (**Invited Paper**)," *Proc. SPIE*, Vol. 10203, April 14-18, 2019
6. N. Nasrullah, J. Sang, M. S. Alam, and H. Xiang, "Automated detection and classification for early stage lung cancer on CT images using deep learning," *Proc. SPIE*, Vol. 10203, Baltimore, April 14-18, 2019
7. W. Wu, J. Sang, M. S. Alam, X. Xia, J. Tan, "A crowd counting method based on multi-column dilated convolutional neural network," *Proc. SPIE*, Vol. 10203, Baltimore, April 14-18, 2019
8. Q. Zhang, J. Sang, M. S. Alam, B. Cai, and L. Yang, "A Chinese acoustic model based on convolutional neural network," *Proc. SPIE*, Vol. 10203, Baltimore, April 14-18, 2019
9. M. Moniruzzaman and M. S. Alam, "Wavelet filtered shifted phase-encoded joint transform correlation," *Proc. SPIE*, Vol. 10203, p. 1020308, Anaheim, April 9-13, 2017
10. M. Moniruzzaman and M. S. Alam, "Wavelet filtered local phase pattern for face recognition," *Proc. SPIE*, Vol. 10203, Anaheim, April 9-13, 2017
11. M. Hossain, S. Latif, S. Sharma and M. S. Alam, "Hybrid perturbations in stacked ring-patch antennas for wide beam width

- circular polarization,” *Proc. Int’l Conference on Antennas and Propagation*, p. 27-28, IEEE, Puerto Rico, October 2016
12. M. Moniruzzaman and M. S. Alam, “Face recognition using 4-PSK joint transform correlation (**Invited Paper**),” *Proc. SPIE*, Vol. 9845, Baltimore, April 17-21, 2016
  13. B. Biswas, M. S. Alam and S. Chowdhury, “Efficient face recognition using local derivative pattern and shifted phase-encoded fringe-adjusted joint transform correlation,” *Proc. SPIE*, Vol. 9845, Baltimore, April 17-21, 2016
  14. M. Moniruzzaman and M. S. Alam, “Wavelet decomposition-based efficient face liveness detection,” *Proc. SPIE*, 26<sup>th</sup> SPIE Conference on Pattern Recognition, Vol. 9845, Baltimore, April 17-21, 2016
  15. A. Sakla and M. S. Alam, “Investigation of correlation between vibrometric data and accelerometric data using spectral fringe-adjusted joint transform correlation,” *Proc. SPIE*, Vol. 9845, April 17-21, 2016
  16. J. Sang, M. S. Alam and B. Cai, “Efficient detection of plain text attack on gyrator transform based image encryption,” *Proc. SPIE*, Vol. 9845, April 17-21, 2016
  17. M. Hossain, S. Latif and M. S. Alam, “A wideband stacked patch-ring antenna with corner perturbations for circular polarization,” *Int’l Conference of Computer s and Information Technology*, IEEE, December 21-23, 2015
  18. B. Biswas and M. S. Alam, “Efficient live face detection to counter spoof attack in face recognition systems (**Invited Paper**),” *Proc. SPIE*, Vol. 9477, p. 947703(1-13), 2015
  19. P. Sidike, V. Asari and M. S. Alam, “A robust fringe-adjusted joint transform correlator for efficient object detection,” *Proc. SPIE*, Vol. 9477, p. 947707(1-8), 2015
  20. Y. Belkhouche, B. Buckles, P. Duraisamy and M. S. Alam, “Graph-based filtering of urban LiDAR data”, *Proc. SPIE*, Vol. 9094, p. 90940I(70-75), 2014
  21. S. Bhuiyan, J. F. Khan and M. S. Alam, “Power enhanced extended maximum average correlation height filter for target detection,” *Proc. IEEE SoutheastCon*, p. 1-4, Lexington, Kentucky, March 13-16, 2014
  22. P. Sidike, V. Asari and M. S. Alam, “Illumination-invariant pattern recognition using fringe-adjusted joint transform correlator and monogenic signal,” *Proc. IS&T/SPIE*, Vol. 9024, p. 90240C(1-10), San Francisco, February 2-4, 2014
  23. M. S. Alam, J. Khoury, P. P. Banerjee, W. Durant, D. Martin, G. T. Nehmetallah, “Performance evaluation of optimal filters for target detection and tracking using SAR imagery,” *Proc. SPIE*, Vol. 9094, May 2014
  24. J. Khoury, M. S. Alam, P. P. Banerjee, G. T. Nehmetallah, D. Martin, W. Durant, J. Donoghue, N. Peyghambarian and M. Yamamoto, “Performance comparison of photorefractive two-beam coupling correlator with optimal filter-based correlators (**Invited Paper**),” *Proc. SPIE*, Vol. 9094, May 2014
  25. G. T. Nehmetallah, P. P. Banerjee, M. S. Alam and J. Khoury, “Performance evaluation of photorefractive two-beam coupling joint transform correlator,” *Proc. SPIE*, Vol. 9094, May 2014
  26. P. Duraisamy, X. Yuan and M. S. Alam, “Finding weak edges in imagery,” *Proc. SPIE*, Vol. 9094, May 2014
  27. P. Sidike, T. Aspiras, V. Asari and M. S. Alam, “A rotation-invariant pattern recognition using spectral fringe-adjusted joint transform correlator and histogram representation,” *Proc. SPIE*, IEEE, Vol. 9094, May 2014
  28. P. Sidike, M. S. Alam, C. Cui and V. Asari, “Efficient face recognition using shifted phase-encoded fringe-adjusted joint transform correlator,” *Proc. ICAEE 2013*, IEEE, Dhaka, December 19-21, 2013
  29. S. Patrabansh, M. Y. El-Sharkh and M. S. Alam, “DMFC models and applications,” p. 2346-2355, *Proc. Conf. Industrial Engineering and Operations Research*, Bali, Indonesia, January 7-9, 2014
  30. A. Alfalou, C. Broseau and M. S. Alam, “Smart pattern recognition (**Invited Paper**),” *Proc. SPIE*, Vol.8748, p. 874809, 2013
  31. P. Duraisamy, K. Namuduri and M. S. Alam, “Robust 3D reconstruction using LIDAR and N-visual image,” *Proc. SPIE*, Vol. 8748, p. 874808(1-9), April 2013
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  33. M. H. Habib, M. S. Alam and W. Al-Assadi, “JTC based concealed object detection via terahertz imaging,” *Proc. SPIE*, Vol. 8748, p. 87480R(1-9), April 2013
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  41. M. S. Alam and P. Sidike, “Trends in oil spill detection via hyperspectral imaging (**Invited Paper**),” *Proc. of the Int’l Conf. on Electrical and Computer Engineering*, IEEE, p. 858-862, Dhaka, December 20-24, 2012
  42. A. Alfalou, N. Benhaj-Yahia, M. Elbouz and M. S. Alam, “Face recognition using a non-zero-order correlation plane and a

- nonlinear joint transform correlator,” *Proc. SPIE*, Vol. 8498, p. 84981A(1-10), San Diego, August 2012
43. M. N. Chy, A. Sakla and M. S. Alam, “Ultrasonic hyperspectral imaging based oil spill detection in sea water via spectral fringe-adjusted joint transform correlation,” *Proc. SPIE*, Vol. 8498, p. 84981C(1-12), San Diego, 2012
  44. S. Patrabanah, M. Y. El-Sharkh, M.S. Alam, “Dynamic modeling of transient response of DMFC for residential applications,” *Proc. IEEE Industry Applications Society Annual Meeting*, p. 1-12, IEEE, Las Vegas, October 2012
  45. P. Sidike, J. Khan, M. S. Alam and S. Bhuiyan, “Spectral unmixing of hyperspectral data for oil spill detection,” *Proc. SPIE*, Vol. 8498, p.84981B(1-10), San Diego, August 2012
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  50. Y. Wan, P. Duraisamy, M. S. Alam and B. Buckles, “Global constrained hidden Markov model applied on wireless capsule endoscopy video segmentation” *Proc. SPIE*, Vol. 8384, Maryland USA, April 2012
  51. M. S. Alam, R. Gollapalli and P. Sidike, “Identification and detection of oil and oil-derived substances at the surface and subsurface levels via hyperspectral imaging,” *Proc. SPIE*, Vol. 8398, p.839801(1-13), April 23-27, 2012
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  55. S. Mercan and M. S. Alam, “Anomaly detection in hyperspectral imagery using stable distribution,” *Proc. SPIE*, Vol. 8049, p.80490V, 2011
  56. J. Sang, S. Ling, M. S. Alam, “Text encryption via double-random phase encoding,” *Proc. SPIE*, Vol. 8055, p. 80550T, 2011
  57. M. I. Elbakary and M. S. Alam, “Kernel and stochastic expectation maximization fusion for target detection in hyperspectral imagery,” *Proc. SPIE*, Vol. 8055, p. 80550Q(1- 12), Orlando, Florida, April 2011
  58. P. Duraisamy, M. S. Alam and S. C. Jackson, “Error correction in image registration using POCS,” *Proc. SPIE*, Vol. 8055, p. 80550P(1- 5), Orlando, Florida, April 2011
  59. J. F. Khan, G. V. Murphy, S. M. A. Bhuyian, M. S. Alam, “Empirical mode decomposition of the ECG signal for noise removal (**Invited Paper**),” *Proc. SPIE*, Vol. 8055, p. 805504(1- 12), Orlando, Florida, April 2011
  60. M. S. Alam and S. Alsharif, “Performance evaluation of CCI on the reverse CDMA channel,” *Proc. SPIE*, Vol. 8061, p.806108, Orlando, Florida, April 2011
  61. M. M. Ali, S. Russ and M. S. Alam, “Variable FEC to reduce ECC overhead in digital video transmission,” *Proc. Int’l Conference on Consumer Electronics*, p. 212-213, DOI:10.1109/ICCE.2011.5722546, IEEE, Las Vegas, January 9-11, 2011

## KEYNOTE ADDRESSES

1. M. S. Alam, “Remote sensing based oil spill detection and mitigation,” **Keynote Address** presented at the *IEEE International Conference on Advanced Information and Communication Technology (ICAICT 2020)*, November 28-29, 2020
2. M. S. Alam, “Infrared image registration and high resolution reconstruction,” **Keynote Address** presented at the *IEEE Region 10 Symposium (TENSYP 2020)*, June 5-7, 2020
3. M. S. Alam, “Pattern recognition via optimal filtering and photorefractive joint transform correlation,” **Keynote Address** presented at the *IEEE International Conference on Telecommunications and Photonics*, December 28-30, 2019
4. M. S. Alam, “Oil spill detection, identification and tracking via hyperspectral imaging,” **Plenary Address** presented at the *Workshop on Pattern Recognition*, Huazhong University of Science and Technology, China, July 9-11, 2019
5. M. S. Alam, “Subsurface oil spill detection in ocean environment via ultrasonic hyperspectral imaging based spectral fringe-adjusted joint transform correlation,” **Keynote Address** presented at the *IEEE SPS and EMBS Chapters Forum*, Dhaka, December 25, 2018
6. M. S. Alam, “Ultrafast biometric recognition and liveness detection,” **Plenary Address** presented at the *Biometrics Workshop*, Huazhong University of Science and Technology, China, June 24-28, 2018
7. M. S. Alam, “Ultrafast computing via optical processing,” **Keynote Address** presented at the *International Conference on Networking, Systems and Security (NSysS 2017)*, IEEE, December 18-20, 2017
8. M. S. Alam, “Imaging based pattern recognition and tracking for humanitarian applications,” **Keynote Address** presented at the *IEEE Region 10 Humanitarian Technology Conference*, December 21-23, 2017
9. M. S. Alam, “Optical pattern recognition,” **Keynote Address** presented at the *Symposium on Optical Processing*, Universidad Autónoma de Nuevo León, Nuevo León, México, March 29-30, 2017 (as a OSA Fellows Travelling Lecturer)
10. M. S. Alam, “Trends in biometric recognition,” **Keynote Address** presented at the *Symposium on Biometric Recognition*, Chongqing University, China, May 20-21, 2016

11. M. S. Alam, "Recent advances in face recognition and liveness detection," **Keynote Address** presented at the *Int'l Conference on Informatics, Electronics, and Vision (ICIEV 2016)*, IEEE, May 13-14, 2016
12. M. S. Alam, "Responsible Conduct in Research," **Keynote Address** presented at the *IEEE miniPOCO*, Bangladesh Section of IEEE, May 14, 2016
13. M. S. Alam, "Correlation based pattern recognition and tracking," **Keynote Address** presented at the *Int'l Symposium on 3D Imaging, Metrology, and Data Security (3DIM-DS 2015)*, SPIE, Shenzhen, China, September 26-29, 2015
14. M. S. Alam, "Ultrafast pattern recognition and tracking in FLIR imagery," **Keynote Address** presented at the *Int'l Conference on Ubi-Media Computing (Ubi-Media 2015)*, IEEE, Colombo, Sri Lanka, August 24-26, 2015
15. M. S. Alam, "Recent advances in optical processing based signal detection and tracking," **Keynote Address** presented at the *Int'l Conference on Telecommunications and Photonics (ICTP 2015)*, IEEE, Dhaka, December 26-28, 2015
16. M. S. Alam, "Trends in Pattern Recognition and Tracking in FLIR imagery," **Keynote Address** presented at the *Int'l Conference on Informatics, Electronics, and Vision (ICIEV 2014)*, IEEE, May 22-24, 2014
17. M. S. Alam, "Estimating and mitigating the impact of oil spill disasters via hyperspectral imaging," **Keynote Address** presented at the *Int'l Conf. on Computer & Information Technology*, IEEE, Dhaka 22 -24, 2011
18. M. S. Alam, "Imaging based surface and subsurface oil spill detection and estimation in ocean environment," **Keynote Address** presented at the *Int'l Conference on Computer, Communications & Informatics*, IEEE, India, January 2-4, 2013
19. M. S. Alam, "Novel computing architectures and algorithms for pattern recognition and tracking," **Keynote Address** presented at the *Int'l Conf. on Electrical and Electronic Engineering*, Tripoli, Libya, October 23 -26, 2010
20. M. S. Alam, "Pattern recognition and tracking in visual, infrared and hyperspectral imagery," **Keynote Address** presented at the *Int'l Conf. on Computers and Information Technology*, December 21-23, 2009
21. M. S. Alam, "Ultrafast architectures and algorithms for pattern recognition," **Keynote Address** presented at the *Int'l Conf. on Multispectral Image Processing and Pattern Recognition*, Yichang, China, October 29 - November 1, 2009
22. M. S. Alam, "Smart pattern recognition, identification and tracking," **Keynote Address** presented at the *International Conference on Computing, Communications and Networking*, IEEE, Karur, India, December 18-20, 2008
23. M. S. Alam, "Ultrafast computing architectures and algorithms for pattern recognition and tracking," **Keynote Address** presented at the *International Computer Symposium*, Taipei, Taiwan, November 13-15, 2008
24. M. S. Alam, "Pattern recognition in three-dimensional hyperspectral imagery," **Keynote Address** presented at the *International Conference on Electrical and Computer Engineering*, IEEE, December 19-21, 2006

#### BOOK REVIEW

1. M. S. Alam, "Review of the textbook Optical Characterization of Semiconductors: Infrared, Raman, and Photoluminescence Spectroscopy (Author: Sidney Perkowitz, Academic Press, 1994)," *Optical Engineering*, Vol. 33, p. 1732, 1994

#### PATENTS

1. "Method and system for increasing transmission speed of wired or wireless signals while minimizing the bit error rate," US Patent No. 8,036,258B2. (Joint patent with M. M. Alkhatib)
2. "Improvements in electronic fan speed regulator and light dimmer," Bangladesh Patent No. 1002052

#### SHORT COURSES

1. "Enhanced Image Processing Techniques and Applications," a short course presented at the *International Conference on Computing, Communications, and Networking (ICCCN '08)*, Coimbatore, India, December 17-19, 2008.
2. "Real-time Optical Pattern Recognition Techniques and Applications," a tutorial presented at the *48<sup>th</sup> National Aerospace and Electronics Conference (NAECON '96)*, IEEE, Dayton, Ohio, 20-24 May 1996

#### POST-DOCTORAL STUDENT SUPERVISION

1. Dr. G. Lazarou (2020 - Present), Research Associate Professor, Texas A&M University - Kingsville
2. Dr. R. Gollapalli (2011 - 2012), Currently an Assistant Professor, University of North Alabama
3. Dr. S. Bhuyian (2011), Currently a Senior Systems Engineer, BAE Systems, Inc., Nashua, New Hampshire
4. Dr. J. Khan (2011), Currently an Associate Professor, ECE Department, Tuskegee University
5. Dr. N. Sisworahardjo (2005-2010), Currently an Associate Professor, ECE Department, University of Tennessee - Chattanooga
6. Dr. M. I. Elbakary (2005 - 2010), Currently an Associate Professor, Elizabeth City State University
7. Dr. M. Y. Elshark, (2003 - 2008), Currently an Associate Professor, ECE Department, University of South Alabama
8. Dr. T. Yalcinoz (Ph.D., Imperial College, UK, 2006 - 2007), Currently a Professor and Dean, Melik Shah University, Turkey
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10. Dr. E. Sarigul (2005 - 2006), Currently an Associate Professor, ECE Department, Jackson State University
11. Dr. M. N. Islam (2004 - 2006), Currently an Associate Professor, State University of New York, Farmingdale, New York
12. Dr. M. Tanrioven (2003 - 2005), Currently a Professor and Chair, EE Department, Yildiz Technical University, Turkey
13. Dr. A. Dawoud (2003 - 2004), Currently an Associate Professor, University of Southern Mississippi, Hattiesburg
14. Dr. E. Horache (2003 - 2004), Currently serving as Lead Engineer, Bouygues Telecom, Paris, France
15. Dr. M. A. Salam (2003 - 2004), Currently an Associate Professor, EE Department, Southern University, Louisiana
16. Dr. A. Bal (2003 - 2006), Currently a Professor, EE Department, Yildiz Technical University, Turkey

## VISITING SCHOLAR SUPERVISION

1. Prof. B. M. Jomaa, Department of Electrical Engineering, Alfateh University, Tripoli, May 2010 - June 2010
2. Dr. O. Onar, Department of Electrical Engineering, Yildiz Technical University, Turkey, August 2005 - August 2006
3. Dr. J. Sang, Associate Professor, School of Software Engineering, Chongqing University, China, Sept 2004 - Sept 2005
4. Prof. J. Cai, Associate Professor, Shijiazhuang Engineering College, China, January 2002 - July 2002
5. Prof. Y. H. Doh, Professor, EEE Department, Cheju National University, South Korea, February 2001 - March 2002
6. Prof. A. K. Cherri, Professor, ECE Department, Kuwait University, Safat 13060, Kuwait, May 1999 - July 2000
7. Z. Salman, Ministry of Education, Baghdad, Iraq, March 2011 - June 2011

## DISSERTATION/THESIS SUPERVISION

1. S. Gangopadhyay, Deep reinforcement learning based detection of false data attack on energy market, expected graduation date: December 2022
2. M. Moniruzzaman, Wavelet enhanced face descriptor for biometric recognition, 2016
3. D. Martin, Performance evaluation of optimal pattern recognition algorithms, 2015
4. V. Biswas, Efficient live face detection to counter spoof attack in face recognition systems, 2015
5. P. Sidike, Hyperspectral imaging based detection and identification of surface and subsurface oil in ocean environment, 2013
6. M. H. Habib, Efficient object detection and tracking via hyperspectral and THz imaging, 2013
7. M. N. Chy, Efficient mine detection using fringe-adjusted joint transform correlation, 2013
8. S. Patrabansh, Modeling and simulation of the transient response of direct methanol fuel cells, 2010
9. M. M. Ali, A novel error control scheme for video streaming over time varying wireless channel, 2010
10. H. K. Muhammad, Performance analysis and unit sizing for WT-FC and PV-FC based hybrid systems, 2008-2009
11. V. Kalaga, Optimizing the design and performance of dipole antennas, 2008
12. M. Islam, Human motion tracking using mean shift clustering and discrete cosine transform, 2007
13. Z. Boz, Pattern recognition using PCA and SAM in noisy environment, 2007
14. S. Mercan, Anomaly detection in hyperspectral imagery using stable distribution, 2007
15. M. Aslan, Detection and tracking in FLIR and hyperspectral imagery via TBF/DCCF/K-means clustering algorithms, 2007
16. C. Kanukuntla, Modeling of GaN-based hetero-epi wafer with reduced wafer bow, 2007
17. M. Gorantla, Modeling of GaN-based light emitting diode for uniform current spreading, 2007
18. M. Karakaya, Enhanced SEM algorithm for object detection in hyperspectral imagery, 2007
19. G. Aydinli, Reliability modeling and analysis of low power portable direct methanol fuel cell, 2007
20. M. Kisacikoglu, Fuzzy logic control of a FC/Ultracapacitor hybrid vehicular power system, 2007
21. M. F. Islam, Automatic target detection in hyperspectral imagery using 1D MACH/EMACH filters, 2006
22. S. Ochilov, 1D fringe-adjusted joint transform correlation and adaptive band selection in hyperspectral imagery, 2006
23. M. Rahman, 3D model based recognition using multidimensional Hausdorff distance geometrical invariants, 2006
24. A. Z. Sadeque, Target detection in FLIR imagery using independent component analysis, 2006
25. N. Haq, CDMA based wireless location detection systems, 2006
26. I. Saeed, Data acquisition and routing in wireless sensor network, 2006
27. S. S. Shareef, Ultracapacitor assisted fuel cell power converter for automobiles, 2005 - 2006
28. A. Z. Hossain, Cochannel interference in CDMA wireless communication systems with directional antennas, 2006
29. K. Al-Saadi, Developing an economic operational strategy to improve fuel cell power plant competitiveness, 2005
30. P. Panati, Performance evaluation of throughput in optical burst switching, 2005
31. D. N. Singh, Detection of reappearing targets in forward looking infrared video sequences, 2004 - 2005
32. S. Dacharaju, Three-dimensional color pattern recognition using joint transform correlation, 2004
33. S. M. Bhuiyan, Pattern recognition and tracking in forward looking infrared imagery using correlation filters, 2004
34. P. Polu, Enhanced bandwidth utilization in optical CDMA-WDMA-DWDMA networks, 2004
35. A. Sharma, Fusion of edge information in image segmentation, 2004
36. N. Radhakrishna, Performance metrics for pattern recognition algorithms, 2004
37. S. Ahmed, Performance evaluation of various ad-hoc wireless network protocols, 2004
38. S. F. Goh, Three-dimensional pattern recognition using fringe-adjusted JTC, 2004
39. J. F. Khan, Class-associate fringe-adjusted JTC based multiple target detection and tracking, 2004
40. A. Baker, Photonic MEMS based reconfigurable switch for multicast communication systems, 2004
41. T. Shuman, Enhanced class-associative pattern recognition, 2003
42. M. Haque, Fringe-adjusted JTC based target tracking using subframes from a video sequence, 2001 - 2002
43. A. F. Alsamman, Dissertation Title: Ultrafast invariant face recognition, 2001
44. S. Xiuyu, Dissertation: Modeling and simulation of twin-depolarizer based interferometric fiber-optic gyroscope, 2000-2001
45. I. Lugach, Dissertation: Enhanced three-dimensional visualization using computer aided tomography, 2000 - 2001
46. M. A. Hannan, Smart serrodyne signal processor, 2001 - 2002
47. C. N. Wai, Distortion-invariant color pattern recognition, 2001
48. M. M. Rahman, Class-associative pattern recognition, 2001
49. G. Ali, Serrodyne signal processing for interferometric fiber-optic gyroscope, January 2001 - May 2001

50. S. S. Ahsan, Research Topic: Three-dimensional pattern recognition, 2000 - 2001
51. M. Aktharuzzaman, Ultrafast fingerprint identification, 2000
52. X. Chen, Effective strategies for distortion invariant target recognition, University of Dayton (Research Advisor), 1998-1999
53. B. Soon, Ultrafast feature extraction using optical correlation, University of Dayton (Research Advisor), 1998
54. E. Kurtzweg, Multiple target detection using photorefractive correlator, 2000
55. D. Chain, Ultrafast wavelet joint transform correlation, 1999
56. C. Moran, Incoherent erasure multi-target photorefractive joint transform processor, 1999
57. S. Mian, Real time all-optical joint transform correlation, 1997
58. Y. Gu, Optical character recognition using joint transform correlator, 1995

#### **DISSERTATION/THESIS SUPERVISION (CO-SUPERVISOR OR EXTERNAL EXAMINER)**

59. J. Hajjami, Ph.D. Dissertation: Algorithms development for underwater image processing and positioning, University of Brittany, France, 2021
  60. K. Ould, Ph.D. Dissertation: Preprocessing of underwater images based on polarization and frequency filtering: offshore applications, University of Brittany, France, 2019
  61. D. Kumar, Ph.D. Dissertation: Investigations on recognition and security techniques, Indian Institute of Technology, 2017
  62. K. A. Taher, Ph.D. Dissertation: Performance analysis of a polarization division multiplexed fiber-optic transmission system, Bangladesh University of Engineering and Technology, Dhaka, 2017
  63. S. Vijayalakshmi, Ph.D. Dissertation: Brain MR Image segmentation based on Intelligent Hilbert Huang Transform, Anna University, Chennai, India, 2017
  64. R. Nandakumar, Ph.D. Dissertation: Machine learning approach via classifiers for the diagnosis of cardiovascular diseases using ultrasound images of common carotid artery, Anna University, Chennai, India, 2017
  65. M. Datta, Ph.D. Dissertation: Some studies on face detection and recognition, University of Calcutta, Kolkata, India, 2016
  66. M. Aldossari, Ph.D. Dissertation: New optical method of simultaneous compression and encryption of images (still/video) for telecommunications, University of Brittany, Brest, France, 2014
  67. A. Amutha, Ph.D. Dissertation: CT Based Contour Segmentation and 3D Volume Reconstruction from 2D slices of tumor, Anna University, Chennai, India, 2015
  68. A. A. Alattab, Ph.D. Dissertation: Retrieval of human facial images based on the hybrid features of visual content and semantic description, University of Malaya, Kuala Lumpur, Malaysia, 2013
  69. P. Sashikala, Ph.D. Dissertation: "Stochastic model for ECG and its application in human identification," VM University, India, 2013
  70. A. C. Shagar, Ph.D. Dissertation: Design and analysis of CPW FED slot antennas for wideband applications, Anna University, Chennai, India, 2013
  71. I. Leonard, Ph.D. Dissertation: Reconnaissance des object manufactures dans des videos sous-marines, ISEN, France, 2012
  72. S. Kothainachiar, Ph.D. Dissertation: Study on unsupervised color texture image segmentation techniques using morphological watershed algorithm, Anna University, Chennai, India, 2011
  73. A. K. Ghosh, Ph.D. Dissertation: Studies on implementation of multi-valued logic through optoelectronic systems and its applications, Calcutta University, Calcutta, India, 2009
  74. W. A. B. Adnan, Ph.D. Dissertation: Design and analysis of digital image watermarking using wavelet transform, University of Malaysia, Kuala Lumpur, Malaysia, 2009
  75. T. S. Chin, Ph.D. Dissertation: WDM packet switched networks: routing and wavelength assignment aware ASE noise and FWM, Multimedia University, Malaysia, 2008
  76. H. Mellah, Ph.D. Dissertation: Design and performance analysis of a WDM packet switched network, Multimedia University, August 2008
  77. A. Abid, Ph.D. Dissertation: Burst-switched IP over DWDM network design and analysis, Multimedia University, 2007
  78. E. Richard, Performance evaluation of satellite based quantum optical communication systems, Multimedia University, 2011
  79. S. E. Chiang, Performance analysis and design of an arrayed waveguide grating and wavelength conversion device in WDM optical networks, Multimedia University, 2007
  80. K. D. Dambul, Performance analysis and design of a WDM ring network, Multimedia University, 2006
  81. M. Othman, Effect of 4-wave mixing on the transmission performance of WDM networks, Multimedia University, 2001
  82. E. Kiang, Effect of four-wave mixing on the transmission performance of wavelength division multiplexing solitons, Multimedia University, 2001
- Served in the dissertation and thesis committees of 17 Masters and PhD students
  - Supervised 1 Masters research project, 6 undergraduate research projects and 32 capstone senior design projects

**RESEARCH COLLABORATIONS**

Collaborated in research, publications, and/or proposal development with the following universities or private industries:

1. University of Brittany, Brest, France
2. Chongqing University, China
3. Huazhong University of Science & Technology, China
4. Shanghai Institute of Optics and Fine Mechanics, China
5. Cheju National University, South Korea
6. Yildiz Technical University, Turkey
7. Multimedia University, Cyberjaya, Malaysia
8. Indian Institute of Technology, Kharagpur, India
9. Kuwait University, Safat, Kuwait
10. University of Parma, Italy
11. University of Basrah, Iraq
12. Dhaka University, Bangladesh
13. Bangladesh University of Engineering and Technology
14. University of Alabama in Huntsville
15. Tuskegee University
16. University of Missouri - Kansas City
17. Western Michigan University, Kalamazoo
18. City University of New York, Manhattan
19. State University of New York, Farmingdale
20. University of Dayton
21. Wright State University
22. Pennsylvania State University (Erie Campus)
23. University of Tennessee, Knoxville
24. Purdue University, West Lafayette
25. University of Memphis
26. Old Dominion University
27. Sensor Technology Branch, Wright-Patterson AFB
28. Rome Laboratory, Optical Signal Processing Branch
29. Lartec, Inc., Concord, New Hampshire
30. Technology/Scientific Services, Inc. (TSSI), Dayton, Ohio
31. LIN Technology, Fort Wayne, Indiana
32. Radiance Technology, Inc., Huntsville, Alabama
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## MOHAMMAD S. ALAM

### Summary of Administrative Responsibilities and Accomplishments

#### General

- Extensive academic leadership experience and proven track record at multiple R1 and R2 universities
- Currently serving as the Special Assistant to the Vice President for Research to promote large scale funded research
- Provided leadership in advancing the Texas A&M University - Kingsville (TAMUK) College of Engineering's mission of teaching, research and service, including long-range strategic planning; managing and enhancing the academic, research and outreach programs; building strong cooperative relationships with internal and external stakeholders; and expanding collaborative efforts with industry and government agencies
- Administered all internal and external activities of the college consisting of 6 academic departments, 2 research centers, 2 institutes, RGV Engineering Initiative, and Texas A&M Engineering Experimentation Station (TEES) at TAMUK
- 17 direct reports - 6 department chairs, 4 center/institute directors, 2 associate deans, 1 executive director, 1 coordinator for RGV engineering initiative, 1 business administrator, 1 director of communications and outreach, and 1 executive assistant; 110+ indirect reports - faculty and staff; hired 2 associate deans, 3 chairs, 35+ faculty/staff members
- Served as Interim Director of High Performance Computing Center and upgraded it with the latest computing resources
- Implemented a cloud based system (Workday) for all major operations in the college such as faculty/staff/student hiring, performance evaluation, financial management, and other administrative operations
- At the University of South Alabama (USA) during my tenure as Chair: 50+ direct reports including faculty, staff, post-docs, visiting research fellows, graduate teaching/research assistants, and part-time faculty
- Coordinated all activities such as faculty/staff recruitment/mentoring, performance evaluation, promotion and tenure, student recruitment/retention, academic advising/orientation, curriculum/laboratory development, ABET/SACS accreditation, financial resource management, donor cultivation, funded research, research compliance, technology transfer, and equipment/facilities development
- Other leadership/administrative experiences include: Member - Board of Directors, Southeastern Center for Electrical Engineering Education (SCEEE); President - Southeastern Electrical and Computer Engineering Department Heads Association (SECEDHA); President - Mobile Section of IEEE, Chairman - Fort Wayne Section of IEEE; Organized and/or Chaired of many international conferences

#### Funded Research

- Increased externally funded research awards from \$1.68M in FY 2016 to \$11.32M in FY 2020
- Established a new \$5M NSF funded Center for Research Excellence in Science & Technology (CREST)
- Added 12 soft funded research staff (research professors, post-docs, and support staff members)
- Increased faculty participation in external research funding related activities from nearly 40% to over 90%
- Established research infrastructure in niche areas and developed robust policies and compliance procedures
- New research labs added - sustainable energy systems lab; vision, image processing, and photonic systems (VIPS) lab
- Developed a Master Research Agreement with the Port of Corpus Christi for large scale applied research projects
- Served as Project Director and Principal Investigator for many large scale research projects
- At USA, increased externally funded research from nearly \$100K to over \$3M
- Added four new research laboratories using external funding by investing over \$1.2M
- Increased faculty participation in externally funded research from 12.5% to 87.5% and supported 16 post-docs
- Established collaborative multidisciplinary research with 30+ domestic and int'l institutions and private industry

#### Academics

- Managed and responsible for 22 academic programs - 10 Bachelors, 10 Masters, and 2 PhD degree programs
- Transitioned two university supported PhD programs into self-sustaining PhD programs
- Added 7 new academic programs - BS in computer engineering, BS in industrial engineering, MS in mechatronic engineering, online MS in natural gas engineering, online MS in mechanical engineering, PhD in engineering, BAAS program on occupational safety and health, 5 minors/certificates, and introduced a fast track 5-year BS-MS program
- Initiated the development of a proposal for an MS in pharmaceutical engineering with the College of Pharmacy
- Introduced an interactive classroom for active learning for students by investing over \$150K
- Revamped/modernized all instructional labs and added a new lab for natural gas engineering by investing nearly \$1.6M
- Implemented online/hybrid course offerings and remote learning opportunities for place-bound and int'l students
- Increased the number of internship/co-op opportunities for students from 888 in 2017 to over 1800 in 2019
- At USA, re-engineered undergraduate and graduate degree programs in electrical and computer engineering
- Implemented online and PodCast based course offerings for distance education
- Introduced a PreMed Track in the BSEE program; a Software Track and a Hardware Track in the BSCpE program
- Introduced Electrical, Computer and Systems Engineering Tracks in the MSEE degree program
- Introduced and/or replaced over 70% of the regularly offered graduate courses and senior level courses

- Actively participated in the development of a college-wide doctoral program in Systems Engineering

### **Fund Raising**

- Introduced effective fund raising strategies (secured \$1.8M from the private sector and \$4.1M from the university)
- Received a \$41M in-kind donation (oil/gas reservoir simulation software) from the Schlumberger Technology Corp.
- Established the first endowed chair in Civil Engineering (Eugene E. Dawson Endowed Chair)
- At USA, actively sought and received donations/gifts from the private sector totaling over \$2M
- Establish the first Endowed Professorship in the history of the College (Warren Nicholson Endowed Chair)

### **Facilities**

- Renovated the Engineering Complex to provide better learning environment for students by investing over \$2.5M
- Constructed a new Engineering Innovation Center for enhanced interaction with industry by investing over \$1.3M
- Invested ~\$1.5M for instructional laboratory improvement and nearly \$1M for research infrastructure development
- Currently serving in the TAMUK Campus Master Plan Evaluation Committee
- Actively involved in the planning, programming, and fund raising for a \$40M engineering building (155,000 sq. ft.)
- Played an active role from the inception and the establishment of the University Research and Technology Park
- Added nearly 10,000 sq. ft. research lab space

### **Diversity/Equity/Inclusion**

- Fostering a culture of diversity, equity and inclusion across the College
- Established diversity by successfully recruiting faculty, staff and students from underrepresented groups
- To ensure student success, especially first generation students who need special attention to succeed, we invested significant amount of resources to provide dedicated advising, supplemental instruction, tutoring, and career guidance through the Javelina Engineering Student Success Center
- As member of Purdue University-Fort Wayne diversity council, developed the strategic plan on diversity and inclusion
- Served as a member of the university advisory committee for people with disabilities at Purdue University-Fort Wayne

### **Enrollment Management/Articulation**

- Directed result-oriented marketing plans for outreach, recruitment and retention
- Developed articulation agreements with 6 regional community colleges and 3 international institutions
- During 2016 to 2019, increased FTIC retention rate from 67% to 78% and 6-year graduation rate from 42% to 48%
- At USA, developed articulation agreements with 3 international institutions
- Doubled student enrollment (from 279 to 546) and increased the tenured and tenure-track faculty size by 75%

### **Accreditation and Assessment**

- Developed and executed mission-focused successful strategies for assessment and accreditation
- Secured initial ABET accreditation for the BS in Natural Gas Engineering and reaccreditation of other programs
- Assisted in the preparation of the university self-study report for SACS reaccreditation
- At USA, secured initial ABET accreditation for the BSCpE program and subsequent re-accreditation for BSEE and BSCpE degree programs (2001, 2005 and 2011) for the maximum possible period
- Implemented a software-based (TracDat) assessment and tracking system for accreditation and annual review

### **Strategic Planning**

- Initiated and developed the 2016-2020 strategic plan for the College by involving all stakeholders
- Actively participated in the development of the 5-year strategic plan for the University
- At USA, actively participated in the development of the strategic plan for the College and the University

### **Budget Management and Resource Allocation**

- Developed and executed mission-focused, outcome-oriented budget strategies
- Responsible for the preparation and management of the College of Engineering budget totaling nearly \$20M
- At USA, responsible for the preparation and management of the departmental budget totaling over \$4M

### **Visibility/Publicity/Global Engagement**

- Promoting student participation in high-profile activities (e.g., IEEE/HKN Best Chapter Award - 4 years in a row)
- Significantly increased the participation of faculty in highly visible activities such as chairing conferences, serving as editors of professional journals, serving as panel members, and becoming Fellows of professional societies
- Providing leadership for various professional activities such as chairing international conferences
- Served in the Advisory Board for international institutions and state level funding organizations (DEPSCoR)