

Summary of Dean M. Aslam's Creative/Unique Research and K-16 Outreach

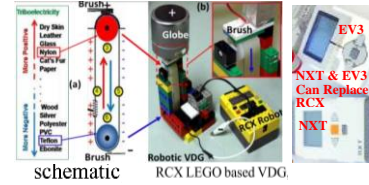
Dean Aslam is a world leader in very creative (a) Functionalized Bricks with Embedded Bricks (FBEI) for K-16 outreach microsystems and (b) polycrystalline diamond and other systems research. See pictures on right.

Rarely, a scientist excels both in research and K-16 outreach as Dean Aslam does.

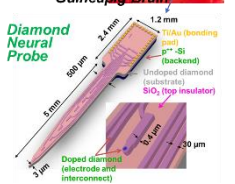
Creation of Universe; Big Bang, Brain/Mind Roles, Life Creation, and Mind-controlled Robots (Fig. 1). The world unique mind-controlled LEGO robot built by Dean Aslam in 2013 (Fig. 1a); the new version is stress/anxiety/depression-controlled LEGO robot being built in 2024 using MUSE-2.

World-Unique K-16 FBEI Modules FBEIs Designed by Dean Aslam

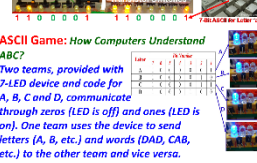
Except for robotic doll (designed and built by high school girls in Dr. Aslam's lab) all modules were designed/built by Dean Aslam.
LEGO VD Graaf Generators Designed by Dean Aslam



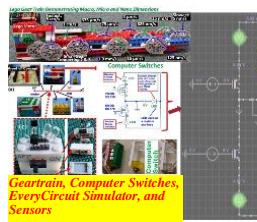
World-Unique Diamond Neural Probe



Two Ways to Generate 7-Bit ASCII Code for a Keyboard



ASCII Game: How Computers Understand ABC?



Microcontroller Programming by Android

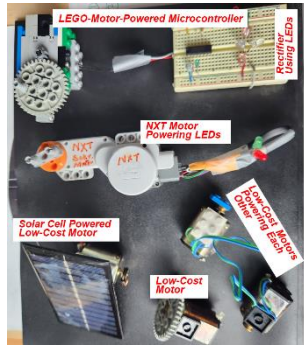
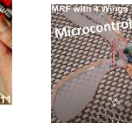


Fig. 9 Programming of a microcontroller by Android Smartphone.

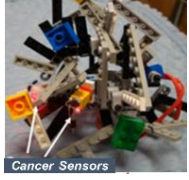
LEGO-Motor Powered Microcontroller Using LEGO as Voltage Regulator & Rectifier



anodiamond (ND) Oxidized ND



Technology Assisted Cancer Education & Prevention



Micro, Nano and Microsystems Fabrication



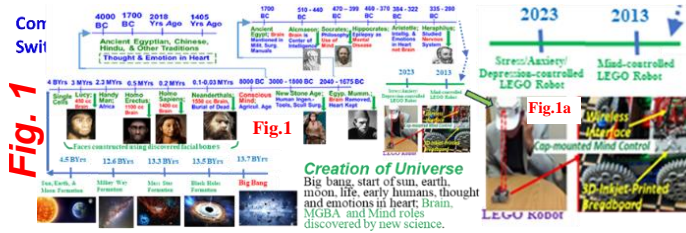
LEGOS Used to Explain Processes for Fabrication of Micro & Nano Switches



Filter Bars

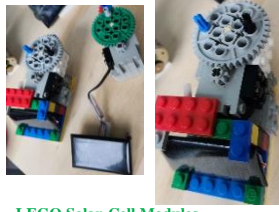


Mind and Body Health By Non-invasive Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FIMS) Equipped with Single sensor EEG (Brain) and Multi-sensor EGIC (Gut)



Current Researchers: Jingyi Shen

See figures above and section 6b for details of published papers



LEGO Solar-Cell Modules



EIGHT STAGES OF LIFE: Contributing to Stress, Happiness & Longevity



SUMMARY VITAE Dean M. Aslam

IEEE Life Senior Member

Biomedical Engineering, UT Southwestern, Dallas, Texas (Adjunct Professor)

Michigan State U (aslam@msu.edu) www.egr.msu.edu/~aslam (Professor Emeritus)

Member of National Academy of Inventors (NAI); <https://www.youtube.com/watch?v=rK8w3f8Cks8>

EDUCATION; M.S. (Dipl. Phys.), Physics, 1979; Ph.D. (Dr. rer. nat.), EE, 1983, Aachen Technical University (RWTH), Germany

RESEARCH Dean Aslam is interested in the areas of (a) *Interoception Study for Health and Longevity using MUSE-2 EEG headset*, (b) *Neuroscience Engineering Education Using Self-learning by Mind-controlled LEGO Robots*, (c) Artificial Mind (AM) Algorithms; (d) Scientific Mind Model, (e) self-study and -healing of neural problems, (f) monitoring/predicting mind/body problems by data collection and developing algorithms using non-invasive Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FTIMS), (g) *Mind- and Empathy-Controlled LEGO Robots* (h) *Maple-seed Inspired Microdrones to Detect Viruses in Atmosphere*, (i) *Functionalized Bricks with Embedded Intelligence (FBEI) for K-16 Outreach, UG/Graduate Education, and Workforce Training*

RESEARCH Dean Aslam is interested in the areas of (a) *Interoception Study for Health and Longevity using MUSE-2 EEG headset*, (b) *Neuroscience Engineering Education Using Self-learning by Mind-controlled LEGO Robots*, (c) Artificial Mind (AM) Algorithms; (d) Scientific Mind Model, (e) self-study and -healing of neural problems, (f) monitoring/predicting mind/body problems by data collection and developing algorithms using non-invasive Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FTIMS), (g) *Mind- and Empathy-Controlled LEGO Robots* (h) *Maple-seed Inspired Microdrones to Detect Viruses in Atmosphere*, (i) *Functionalized Bricks with Embedded Intelligence (FBEI) for K-16 Outreach, UG/Graduate Education, and Workforce Training*.

RESEARCH INNOVATIONS: Seminal Work/First to Report:

2024; *Amygdala Scripts, Mind, and Brain Roles in Stress, Health, Longevity and Life Quality*; in progress
2024; *Artificial Intelligence (AI) Models of AI Brain (AIB) and Mind (AIM) for Creative Healthcare*
2024; *MUSE-2 for Biomedical Disease Prediction and Unique K-16 Education and Outreach*
2024; *Brain and Mind Roles and Study of External and Interoceptive Senses Using MUSE-2*
2024; *Big Bang, Stars, Earth, Humans, Heart Role, Microbiome-Gut-Brain-Axis and Mind*
2023 *Technology, MGBA and Mind Roles in Personality, Health, and Longevity of Humans*
2023; *Self-Study of Cancer Reoccurrence Stress and Effects of Keto Diet and Black Seed Oil*
2023; *Nature of Distracted Driving in Various Physiological Conditions*
2022; *Factors Affecting Mind/Personality, Health, Quality of Life and Longevity of Humans*
2022; *Brain, Mind, Body, and Soul; Scientific-Definition/Role in Quality and Longevity of Life*
2022; *Role of Mind in Cancer Survival Strategies Considering 'Stress Algorithms'*
2021; *Self-Study and -Care of Human Health Problems Guided by New Scientific Mind Model*
2021; *Self-study of interoception using LEGO robots*
2020; *Self-study of neural problems using LEGO robots,*
2020; *Empathy-controlled Robot to study narcissism, sociopathy and psychopathy*
2019; *Scientific Models of Mind and Brainwave Generation & Emission*
2017; *Hands-on Flipped Lab Using Smartphones*
2016; *Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FTIMS); predict health problems by algorithms development*
2015; *Jacket- and wig-mounted mind-control*
2014; *Fabric-embedded mind-control for smart home and personal healthcare monitoring. Algorithm development.*
2013; *Cap-mounted mind-control for robots; attention level algorithms*
http://www.youtube.com/watch?v=LdSBQy5_vyY&feature=youtu.be
2012; *Mind controlled robot, DNA Inspired Active Network Arrays (DIANA)*
2011; *Technol. Assisted Dancing, Bullying Study & Cognitive Training,*
2010; *Passive maple-seed robotic fliers (MRF) with on-board Intelligence.*
2009; *Reported Single Material MEMS (SMM).*
2008; *Reported energy scavenging from static charges.*
2008; *Functionalized Nanobricks with Embedded Intelligence (FBEI).*
2007; *All-diamond MEMS neural probe.*
2006; *MEMS cochlear probe with diamond position sensors*
2005; *The highest quality factor of 116,000 for cantilever beams made from (i) any polycrystalline material and (ii) for any resonator structure made of microcrystalline diamond (MCD). 100 nm wide MCD RFMEMS resonators.*
2002; *All-diamond MEMS packaging with built-in interconnects.*

1999: Field emission electroluminescence (FEEL) in MCD.
 1998: Highest piezoresistive gauge factor (over 4000) in MCD.
 1990: Piezoresistive gauge factor reported: MCD and crystalline diamond.

RESEARCH: 450 (sum of cells, shaded in light green, in the table below)
 Flipped-classroom Courses Starting Fall 2014: ECE870, ECE871
 Online Courses: ECE101, ECE870, ECE871

RECENTLY TAUGHT COURSES before retirement on 9-9-22: Online: Intro to Microsystems (ECE870), Microsystems Fabrication (ECE871), Introduction to ECE (ECE101) Hands-on Flipped Microsystems Using Smartphones (starting in Spring 2020)

RECENT POSITIONS (since 9-9-2022)

Biomedical Engineering, UT Southwestern, Dallas, Texas (Adjunct Professor)
 Roswell Park Comprehensive Cancer Center, Buffalo NY (Adjunct Professor)
 Michigan State U (aslam@msu.edu) www.egr.msu.edu/~aslam (Professor Emeritus)
 Member of National Academy of Inventors (NAI); <https://www.youtube.com/watch?v=rK8w3f8Cks8>

1. EDUCATION

Ph.D. (Dr. rer. nat.) 1983, Electrical-Engineering, Aachen Technical University (RWTH), Germany. **Thesis Title:** "Annealing Behavior of Electron and Hole Traps in SiO₂ of MOS Devices". Adviser: Pieter Balk
M.S. (Dipl. Phys.) 1979, Physics, RWTH Aachen, Germany. **Thesis Title:** "Temperature Dependence of Mobility and Concentration of Electrons in Ion-Implanted Si-MOSFETs". Adviser: Pieter Balk

PROFESSIONAL EXPERIENCE: See section 8, **PROFESSIONAL & PUBLIC SERVICE:** See section 9

2. TEACHING

Until 9-9-22: Research-oriented Teaching

Online Courses Using Smartphones

ECE 302; offered in Spring 2021 & Spring 2022

ECE 101, ECE870 & ECE871; offered online in Fall 2020, Spring 2021, Fall 2021, Spring 2022

ECE 870 (Intro. MEMS)*, ECE 871 (Microsystems Fab)*, ECE101 (Introduction to ECE for freshmen), ECE302, Electronic Circuits.

Flipped ECE101; Hands-on Flipped Lab Using Smartphones (Introduction to ECE- started in Fall 2017)

Until 9-9-22: UG Lab Development:

1. **ECE101: Flipped Hands-on Lab Using Smartphones: currently being offered at MSU starting in Fall 2017.**

2. **ECE101**, Introduction to ECE for freshmen, was totally redesigned and further developed in Spring of 2011. It has become an extremely popular course and is now offered in Fall and Spring (enrollment in Spring '12 was 30). New experiments are introduced every semester (windmill and solar car introduced in Spring 2012).

Non-Credit Research-oriented Outreach Service

☐ **Concepts Introduced:** KPD (From Kindergarten to Ph.D.); TASEM (Technology Assisted Science, Engineering and Mathematics); FBFI (Functionalized Bricks with Embedded Intelligence).

☐ **Summer, In/After School Courses and Workshops;** over 1,650 K-12 children served during 2003 -

NSF ERC Funding during 2001 - 2010;	Ph.D. Grad.	Patents Issued	Publications		Presentations						Multimedia News, Reports, Appearances
			Rev. Journal	Rev. Conf	Conf/Sess Chair	Invited	Keynote	Oral/Poster	Short Courses	Invited Seminars	
\$ 3,500,000	17	10	82	147	19	37	11	144	66	38	75

2015 through 60 short courses; Remote sessions provided to schools through live Internet-based video by MSU faculty.

- **K-12/K-Career;** planned to be offered in collaboration with (a) Church in Lansing and (b) Scott Achenbach of AJ Boggs in April 2022.

Past: 1988 – 2003 *Solid State Devices and MEMS; ECE 474 (Solid State Dev.: UG level), ECE 874 & 875 (Solid State Dev.: Grad Level), Others (Adv. MEMS, Societal Impact, Adv. Topics Courses, Circuits Courses)*

3. RESEARCH AND INNOVATIONS

3.1 Research Areas

Current: (a) Interoception Research Using MUSE-2 EEG Headset, (b) Creation of Universe, (c) Factors Affecting Mind/Personality, Health, Quality of Life and Longevity of Humans, (d) Brain, Mind, Body, and Soul; Scientific-Definition/Role in Quality and Longevity of Life, (e) Role of Mind in Cancer Survival Strategies Considering ‘Stress Algorithms’, (f) *Neuroscience Engineering Education Using Self-learning by Mind-controlled LEGO Robots*, (g) Artificial Mind (AM); (h) Scientific Mind Model, (i) Self-study and -healing of neural problems, (j) monitoring/predicting mind/body problems by data collection and developing algorithms using non-invasive Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FTIMS), (k) *Mind- and empathy-controlled LEGO robots* (l) *Functionalized bricks with embedded intelligence (FBEI) for K-12 outreach, and workforce training.*

Recent Past: *fabrication of carbon-based single-material BioMEMS using EEG/ECG/EMG sensors, energy scavenging from static charges, wall-climber robots, and use FBEIs to study dancing, cognitive training and bullying.*

3.2 Researchers (recent):

Past Postdoctoral:

	Started	Unique Research Aspect
Mike Varney	2015 - 2016	Neural Engineering

Current Remote Researchers:

#	Name	Research Area	Expect. Grad.	Unique Research Aspect
1	Zehan	Self-study of Anxiety, Stress	Remote researcher	
2.	Aseel Al-inaizi	Migraine Headache Algorithms	Remote Researcher	Algorithms for Migraine Headache (Saudi Arabia)
3.	Jingyi Shen	Self-study of Anxiety, Stress	Boston U	

Graduated; 1993-2019: 17 Ph.D., 8 M.S., 10 undergraduates, 18 High School, 8 postdocs

Table 1:

#	Name	Ph.D./M.S. Thesis Title	Year	Unique Research Result
1	H.H Tzeng (co-adv.: Prof. Zapp)	VLSI Smart Logic Modeling and Design for Optimum Chip Feature Characterization	1993	Miniaturization of instrumented sphere
2	I. Taher	CVD Diamond Piezoresistive Microsensors	1994	Piezoresistivity in diamond
3	A. Masood	CVD Diamond Temperature Microsensors	1993	Diamond microchip T-sensor (80 – 1300 K)
4	N. Abu-Ageel	Temperature Depend. of Conductivity and Mobility of b- and a-SiC for Temp. Sensors	1996	Seebeck coefficient of alpha & beta SiC reported for the first time
5	G.W Yang	Diamond Seeding, Sensors and Heaters	1996	Single-structure diamond sensor-heater
6	D.S. Hong	Diamond Field Emission Displays	1997	Diamond gated-field-emitter display reported 1 st time
7	S. Sahli	Diamond Inter- and Intra-Grain Piezoresistive Microsensors	1997	Piezoresistive gage factor of 4000 in poly-C
8	Conrad Pawlowski	High Temperature Superconductors		MS Completed
9	Gary Myers	Evaporated Si Field Emitters		MS Completed
10	U. Kim	Field Emission Electro-luminescence (FEEL) in Diamond and Carbon Nanotubes	2002	FEEL discovered in diamond
11	N. Sepulveda-A	Diamond RFMEMS Resonators	2005	Highest quality factor in cantilever beam resonators reported 1 st time
12	X Zhu	All-Diamond MEMS Packaging	2006	Built-in interconnects, fast growth

13	Y. Tang	Cochlear Implant Probe with microsensors and electrodes	Diamond	2006	Incorporation of diamond sensors in Si cochlear probe for 1 st time
14	Ho-Yin Chan	Diamond Neural Probes		2008	All-diamond neural probes demonstrated 1 st time
15	Zongliang Cao	Diamond Piezoresistive RFMEMS		2011	Single Material MEMS Using Diamond
16	Mike Varney	Single-material BIOMEMS Probes		2014	Single-material neural MEMS using MCD
17	He-Chuan	Smart Solar Systems		2017	MS completed
18	Ahmad Alforidi	Tech. Assist Smart Solar-Systems (TASS)		2016	MS completed
19	Aseel Alinazi	Migraine Headache		2017	MS completed
20	Kevin Burghardt	Optical Switches		2017	MS Completed
21	Ahmad Alforidi	3D Printed EEG/ECG/EMG Microsystems for		2019	Ph.D. Completed
22	Bansari Chuan	Personality Prediction		2019	M.S Completed
23	Pradyumna Domata	Autonomous Vehicles		2019	M.S. Completed

3.3 Innovations:

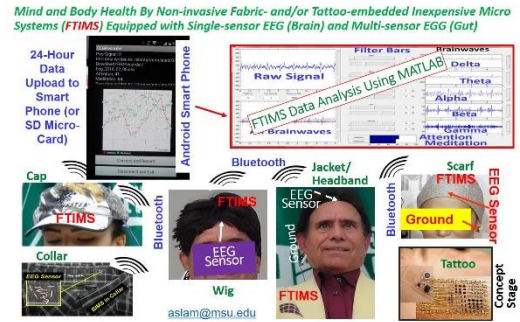
Recent

1. *Artificial Intelligence (AI); remote AI doctor and healthcare; 2024, Seminal Work*
2. *Research on Interoception Using MUSE-2 EEG Headset; 2024, Seminal Work*
3. *Technology, MGBA and Mind Roles in Personality, Health, and Longevity of Humans; 2023, Seminal Work*
4. *Factors Affecting Mind/Personality, Health, Quality of Life and Longevity of Humans; 2022, Seminal Work*
5. *Brain, Mind, Body, and Soul; Scientific-Definition/Role in Quality and Longevity of Life; 2022, Seminal Work*
6. *Role of Mind in Cancer Survival Strategies Considering 'Stress Algorithms'; 2022, Seminal Work*
7. *Self-study of Psychological Problems Using Mind-controlled LEGO Robots, 2021, Seminal Work*
8. *Neuroscience Engineering Education Using Self-learning by Mind-controlled LEGO Robots, 2021, Seminal Work*
9. *Artificial Mind (AM); scientific model, 2021, Seminal Work*
10. *Pain Mind (PM) as Algorithm Based on Data Generated in Microbiome-Gut-Brain-Axis and Body; 2021, Seminal Work*
11. *Self-study and -healing of neural problems; 2021, Seminal Work*
12. *Empathy-controlled Robot to study narcissism, sociopath and psychopath, etc.; 2020, Seminal Work*
13. *Scientific Model of Mind and model of brainwave generation/emission, 2019, Seminal Work*
14. *Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FTIMS); Personality Prediction, 2018*
15. *Flipped Hands-on Lab Using Smartphones, 2017*
16. *Fabric- and/or Tattoo-embedded Inexpensive Micro Systems (FTIMS); predict health/disease by data collection and algorithms development, 2016, Seminal Work*
17. *Jacket- and wig-mounted mind-control, 2015, Seminal Work*
18. *Fabric-embedded mind-control for smart home appliances; predict health/disease by data collection and algorithms development, 2014.*
19. *Fabric-embedded mind-control for personal healthcare monitoring/prediction by algorithms, 2014. Seminal Work*
20. *Cap-mounted mind-control for robots 2013;*
http://www.youtube.com/watch?v=LdSBOy5_yyY&feature=youtu.be
21. *Mind-controlled LEGO robots, 2012.*

Past

22. *DNA Inspired Active Network Arrays (DIANA), 2012. Seminal Work*

23. Technology-Assisted Brain MEMS Interfaces (TBMI), 2012
24. Technology Assisted Dancing, Study of Bullying & Cognitive Training, 2011
25. Passive maple-seed robotic fliers (MRF) with onboard sensors, microcontroller and wireless interfaces, 2010. **Seminal Work**
26. Single material MEMS and NEMS using diamond, 2009. **Seminal Work**
27. Energy scavenging from static charges including those on human body, 2008. **Seminal Work**
28. Fabrication and testing of all-diamond MEMS neural probes for the first time, 2007. **Seminal Work**
29. Reported cochlear BioMEMS probe with diamond position sensors and electrodes, 2006.
30. Reported the highest quality factor of 116,000 for cantilever beams made from (i) any polycrystalline material and (ii) for any resonator structure made of polycrystalline diamond, 2005.
31. Fabricated 100 nm wide polycrystalline RFMEMS resonators, 2005.
32. All-diamond MEMS packaging with built-in interconnects, 2002. **Seminal Work**
33. Reported field emission electroluminescence (FEEL) in diamond for the first time in 2001.
34. Application of diamond sensors and MEMS technologies in wireless integrated Microsystems (WIMS) in 2000.
35. Field emission induced light emission from poly-C and carbon nanotubes in 1999.
36. Implementation of the concept "Elementary School to Ph.D." in K-12 education at Okemos High School (located near MSU) and other schools in Lansing area in 1998.
37. Measured an intra-grain piezoresistive gauge factor of above 4,000 in poly-diamond in 1998. **Seminal Work**
38. Developed diamond MEMS technology compatible with Si microfabrication process in 1996.
39. Demonstrated gated diamond field emission display in 1995.
40. Used Spindt process to fabricate evaporated Si field emitters for displays in 1992.
41. A Michigan State and Ford team headed by Dean Aslam was the first to measure and report piezoresistivity in vapor-deposited p-type diamond in 1990. **Seminal Work**



4. COLLABORATIONS

Current:

1. **2022-present:** UTSW, Dallas.
2. **2011-present:** "Microdrones for Weather/Other Applications", U of Michigan (Prof. Xiaogan Liang, ME)

3. Past:

2018 – 2019: Autónomas Vehicle Algorithms, GM (Dhyan Murugosam).

2011-present: UNCD for FTIMS, U of Texas Dallas (Prof. Orlando Auciello).

2002-10: RFMEMS and nanotechnology with Sandia & Los Alamos, BioMEMS with UM Hospital and Galt LLC, NSF ERC-related collaborations with Professors Sylvester and Wise of University of Michigan Technology Assisted Business Innovations (TABI), Prof. Anthony Ross, Micro Gas Chromatograph Studies using CNTs, Prof. Aurus. Collaborations with MSU faculty from departments of physics (superconductors, sensors), chemistry (sensors), mechanical engineering (thermal conductivity, microrobots, temperature sensors), and computer science (microrobot) has resulted in publications, patents and joint funding from DARPA, NSF, Ford.

1987-96: Collaborative research with industry has resulted in a number of joint patents, publications, cash and in-kind funding, and in interaction of MSU graduate students with the scientists from industry. My students and I have used lab facilities in the departments of physics and sensors & actuators in Ford Scientific Research Laboratories (FSRL) in Dearborn, Michigan (Drs. B. Artz, S. McCarthy, E.M., Logothetis, M. Tamor and L. Rimai). This interaction has resulted in new results in diamond sensors, field emission displays and microelectromechanical systems. A collaborative interaction with Dr. M. Olinger of Smiths Industries led to patents and publications in accelerometers.

5a. PATENTS 10 issued

1. Patent # 4,912,087; "Rapid Thermal Annealing of Superconductor Oxide Precursor Films on Si and SiO₂ Substrates," **M. Aslam**, E.M. Logothetis, R.E. Soltis, Ford Motor Co., March 1990.
2. Patent # 4,943,558; "Preparation of Superconducting Oxide Films Using Pre-oxygen Nitrogen Anneal," R.E. Soltis, E.M. Logothetis, **M. Aslam**, Ford Motor Co., July 1990.
3. Patent # 5,413,668; "Method for Making Mechanical Devices and Micro-Electromechanical Systems", **M. Aslam**, M.A. Tamor, Ford Motor Company, May 1995.
4. Patent # 5,424,241; "Force Detecting Sensor and Method of Making..", **M. Aslam**, M. Olinger, J. Page, Smiths Industries, June, 1995.
5. Patent # 5,474,808; "Method of Seeding Diamond", **M. Aslam**, Michigan State University, Dec, 1995.
6. Patent # 5,488,350; "Diamond Film Structures and Methods Related to Same", "**M. Aslam** and Jim Beck, Michigan State University, January, 1996.

7. Patent # 5,526,703; "Detecting Sensor and Method of Making --", **M. Aslam**, M. Olinger, J. Page, Smiths Industries, June, 1996.
8. Patent #6,082,200; **D.M. Aslam** and S. Sahli, "Ultra-High Sensitivity Intra-grain Piezoresistive CVD Diamond Sensors", Michigan State University, 2000.
9. Patent # 6,868,736; "Ultra-Miniature Optical Pressure Sensing System", Takeo Sawatari, Alex Klooster, **Dean M. Aslam**, Yuping Lin, and James Marks , Sentec Corporation, March 22, 2005.
10. Patent # 7,615,189, "Analyte Accumulation Device", **D.M. Aslam**, Ted Zellers, Yang Lu, 2009 (November 10th).

5b. Recent Invention Disclosures; 9

6a. EDITORSHIPS AND EDITORIAL BOARDS

1. Guest Editor for special issue on "Artificial and Real Intelligences for Creative Healthcare", Journal of Micromachines, MPDI, 2022.
2. Member of editorial board IJARCCCE, 2020; <https://ijarccce.com/editorial-board/>
3. Guest Editor for special issue on 'Mind-controlled Devices', Journal of Micromachines, MPDI, 2014.
4. Guest Editor for special issue on 'Technology and Applications of Carbon-Based MEMS', Journal of Micromachines, MPDI, 2010.
5. Founding Editor-in-Chief of **Journal of Nano Systems and Technology (JNST)**, A.J. Boggs, Ann Arbor, MI (USA); first issue published in November 2009 (www.jnst.org).
6. Member of editorial board of **Micromachines**, an open-access web journal published by Molecular Diversity Preservation International (MDPI), Basel, Switzerland 2009.
7. Proceedings Co-Editor (along with Mike Tamor), Diamond Film Semiconductors, SPIE Proceedings Vol 2151, 1994. ISBN 0-8194-1446-8.

6b. PUBLICATIONS/PAPERS 288 (93 Journal + 52 Keynotes & Invited Papers + 147 conference papers)

Refereed Journal Articles 93.

1. **D.M. Aslam**,
2. **D.M. Aslam**, "Real Mind and Artificial Mind for Healthcare", in progress for Int. J. Adv. Research Computer & Comm. Engin., (IJARCCCE), in progress, 2024.
3. **D.M. Aslam**, "Heart, Brain and Mind in Sufism: Who is In-charge of What?", Int. J. Adv. Research Computer & Comm. Eng., (IJARCCCE), 2024.
4. **D.M. Aslam**, "Scientific Model of Artificial Mind and its Applications in Creative Healthcare Approaches", Int. J. Adv. Research Computer & Comm. Eng., (IJARCCCE), 2024.
5. **D.M. Aslam**, "Artificial Intelligence (AI) Models of AI Brain (AIB) and Mind (AIM) for Creative Healthcare", <https://ijarccce.com/wp-content/uploads/2024/06/IJARCCCE.2024.13607.pdf>
6. **D.M. Aslam**, "MUSE-2 for Biomedical Disease Prediction and Outreach Education", IJARCCCE, Vol. 13 (5); 2024; DOI: 10.17148/IJARCCCE.2024.13501; <https://ijarccce.com/wp-content/uploads/2024/05/IJARCCCE.2024.13501.pdf>
7. **D.M. Aslam**, "Brain and Mind Roles and Study of External and Interoceptive Senses Using MUSE-2", IJARCCCE, Vol. 13 (3), 2024; DOI: 10.17148/IJARCCCE.2024.13335; <https://ijarccce.com/wp-content/uploads/2024/03/IJARCCCE.2024.13335.pdf>
8. **D.M. Aslam**, "Big Bang, Life, Humans, Brain/Mind Roles, Life Creation, and Mind-controlled Robots", IJARCCCE, Vol. 13 (1), 2024; DOI: 10.17148/IJARCCCE.2024.13102; <https://ijarccce.com/wp-content/uploads/2024/01/IJARCCCE.2024.13102.pdf>
9. Y. Chu, H.R. Chowdhury, A. Mitul, N. Uddin, M. J. Hossain, Dean M. Aslam, "Nature of Distracted Driving in Various Physiological Conditions", <https://ijarccce.com/wp-content/uploads/2023/12/IJARCCCE.2023.121201.pdf>
10. **D.M. Aslam**, "Technology, MGBA and Mind Roles in Personality, Health, and Longevity of Humans"; IJARCCCE 12 (10), 2023; DOI: 10.17148/IJARCCCE.2023.121009; <https://ijarccce.com/wp-content/uploads/2023/11/IJARCCCE.2023.121009.pdf>
11. **D. M. Aslam**, J. Shen, and T. Mahmood, "Self-Study of Cancer Reoccurrence Stress and Effects of Keto Diet and Black Seed Oil", IJARCCCE 12 (4), 2023; DOI: 10.17148/IJARCCCE.2023.12426; <https://ijarccce.com/wp-content/uploads/2023/04/IJARCCCE.2023.12426.pdf>

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Keynotes, Webinars

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1. **D.M. Aslam**, Invited, Japan, 2023; "**International Experts Summit on Biomedical Engineering and Biotechnology** (IESBEB2023), Tokyo, Japan, September 11-13, 2023, Meghaz Meetings: <https://www.meghazmeetings.com/iesbeb-2023/>
2. **D.M. Aslam**, IEEE Seminar, 2023; IEEE Life Affinity Group (Harpreet Singh), 8/16/23

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5. **D.M. Aslam**, “Provocative Applications of Scientific Mind Model as MGBA EEG-Data-Based Algorithm”, NAI Webinar, July 15th, 2020; <https://www.youtube.com/watch?v=rK8w3f8Cks8>
6. **D.M. Aslam**, "Brain and Mind; Who is the Leader?", **Keynote**, 9th International Conference on Advanced Technologies (ICAT'20), Istanbul, Turkey, August 10-12, 2020.
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8. **D.M. Aslam**, “Technology Assisted Science, Engineering and Mathematics Outreach Education Using K-Ph.D. Concept”, **Keynote**, NSF IGERT Interdisciplinary Research Symposium on 'Cultivating and Developing Leaders for the New Millennium', University of South Florida, Tampa, April 5, 2006.
9. **D.M. Aslam**, “Micro- and Nano- Technologies in K through Ph.D. Education and Research”, **Keynote**, Second World Congress Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio 2004) Albuquerque, New Mexico, December 6-8, 2004.
10. **D.M. Aslam**, “Small Tech Education”, **Keynote**, High Desert MNT Regional Workshop, TVI Workforce Training Center - Albuquerque, NM, October 12-13, 2004.
11. E. T. Zellers, **D. M. Aslam** and Yang Lu, "Materials and Processing Challenges Related to the Fabrication of a MEMS Micro Gas Chromatograph," Symposium on Materials, Mechanisms, and Systems for Chemical and Biological Detection and Remediation, Materials Research Society Meeting, **keynote**, San Francisco, CA, April 12-16th, 2004.
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Invited: Talks/Papers/Posters/ 38

1. **D.M. Aslam**, M. Alshammari and Y. Liu “*Static Charge Energy Scavenging Algorithms Using CMOS Sensor Data Collection*”, 2021.
2. **D.M. Aslam**, “Artificial and Real Intelligences in Healthcare”, TelemedEdu Symposium in Healthcare, Troy, MI, October 2021.
3. **D.M. Aslam**, “Intriguing Aspects of New Scientific Mind Model as EEG Data Based Algorithm”, IEEE Luncheon, December 28, 29205 Orchard Lake Road, Farmington Hills, Michigan; 2019; <https://events.vtools.ieee.org/m/213651>
4. A. Alforidi and **D.M. Aslam**, "Fabric-embedded EEG/ECG/EMG Micro-Systems to Monitor Health/disease of people in Smart Homes using smartphones for data collection and analysis", 2018 IEEE International Conference on Electro/Information Technology (EIT), Detroit, MI
5. **D.M. Aslam**, “Innovative Hands-on Demos and Smartphone-based Learning”, 3 Sessions for Math and Science for Girls, MSU Campus, March 17, 2017.
6. **D.M. Aslam**, “Innovative Hands-on STEM Modules; Gateway to Research-oriented and Entrepreneurial Learning”, Demos for 50 Teachers Invited by National Academy of Inventors (NAI), MSU Campus, July 16, 2016.
7. **D.M. Aslam**, “Introduce a Girl to Engineering Day”, Hands-on Presentation, MSU Campus, February 27, 2016.
8. **D.M. Aslam**, “Fabric-embedded Mind-control for Robots and Smart-Home Devices”, IEEE SEM Spring Conf., April 2015.
9. **D.M. Aslam**, “Mind-controlled Robots and Prosthetics”, IEEE SEM Fall Conf., 2013; <http://detroit.cbslocal.com/2013/11/06/ieee-celebrates-electronics-engineerings-achievements-amazing-future/>

10. **D.M. Aslam**, “Mind/Muscle Controlled Games, Robotics and Prosthetic Limbs”, MRS Spring Meeting and Exhibition, San Francisco April 1-5, 2013; <http://www.mrs.org/spring-2013-functionalized-bricks-embedded-intelligence-presentations/>
11. **D.M. Aslam**, “Monitoring Happiness for Improved Workplace Performance”, MRS Spring Meeting and Exhibition, San Francisco April 1-5, 2013; <http://www.mrs.org/spring-2013-functionalized-bricks-embedded-intelligence-presentations/>
12. **D.M. Aslam**, “Piano and Bugs Controlled by Static Charges”, MRS Spring Meeting and Exhibition, San Francisco April 1-5, 2013; <http://www.mrs.org/spring-2013-functionalized-bricks-embedded-intelligence-presentations/>
13. **D.M. Aslam**, “LEDs Used as Solar Cells”, MRS Spring Meeting and Exhibition, San Francisco April 1-5, 2013; <http://www.mrs.org/spring-2013-functionalized-bricks-embedded-intelligence-presentations/>
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Dean Aslam, IEEE Senior Member and professor of Electrical and Computer Engineering at Michigan State University, explained that, “through use of wearable Microsystems equipped with inexpensive and non-invasive brainwave and muscle sensors, we will be able to set specific patterns and thoughts to turn on ceiling fans, appliances or even lights. When you get cold, all you’ll need to do is blink your left eye twice or think about raising the temperature on the thermostat and you’ll warm right up. If you go to sleep without switching off lights and TV, they will be automatically switched off the moment the sensors find you in the state of sleep.”

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1. **D.M. Aslam**, "Electroluminescence in Diamond", in Handbook of Electroluminescent Materials", edited by D. R. VIJ, Institute of Physics Publishing, U.K. (2004), *also listed under J. Papers*.
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Conference Chair/Co-Chair, Workshop-Chair, Session-Chair 21

1. One day workshop, Lansing STEM Academy, "Hands-on TASEM session for 4th graders", 2012.
2. **Workshop Chair**, "Nanotechnology Education Using Nanobricks", MSTA Conf., Grand Rapids, MI, 2011.
3. **Workshop Chair**, "Hands-on Nanotechnology", eight workshops (200 college and high school students and 35 teachers), Taibah University, Medinah, Saudi Arabia June 2010.
4. General Chair, IEEE Fall Nano Conference on "Nano-technology & -robots, Nano-business & -education", Ypsilanti, MI, November 2009.
5. Session Chair, "COMS-2009 Education Session", COMS 2009, Copenhagen, Denmark, September 2009.
6. **Student Poster Session Chair**, "Energy Scavenging for Microsystems", IEEE SEM Fall Conference on Green Energy in Great Lakes, Dearborn, MI, November, 2008.
7. **Session Chair**, Int.Lawrence Conference on Commercialization of Micro and Nano Sysstems (COMS), Puerto Vallarta, Mexico, 2008.

8. **Workshop Co-Chair**, “Robotics and Nanotechnology”, IEEE Science Teacher Workshop (10 teachers), Dearborn, MI, USA, August 2008.
9. **Workshop Chair**, “Hands-on Nanotechnology and Microsystems”, ASEE Conference (17 teachers), Pittsburgh, USA, June 2008.
10. **Chair Technical Session D**, “Material Considerations”, ASEE Zone 1 Conference, West Point, New York, USA, March 2008.
11. **Workshop Chair**, “Hands-on Nanotechnology and Microsystems Learning Modules”, ASEE Zone 1 Conference (16 teachers), West Point, New York, USA, March 2008.
12. **Workshop Chair**, “Hands-on Nanotechnology and Microsystems Learning Modules”, New York State United Teachers (76 teachers), Latham, New York, USA, March 2008.
13. **Chair Technical Session B**, 6th International Workshop & Training Course on Microelectronics; Micro- and Nano-electronics & Photonics, Islamabad, Pakistan, April 9-13, 2007.
14. **Poster session Chair**, 2006 Nanomedicine Symposium, Michigan State University, E. Lansing, MI, April 29, 2006.
15. **Member of Organizational Committee**, 2006 Nanomedicine Symposium, Michigan State University, E. Lansing, MI, April 29, 2006.
16. **Chair Hands-On One-Day Science Teacher Workshop**, Science and Math Education, Michigan State U, 2002.
17. **Workshop Chair**, Sci Teacher Workshop at Okemos High School near Michigan State University “Elementary School to Ph.D.”, June 2002.
18. **Workshop Chair**, Sci Teacher Workshop at University of Michigan on “Elementary School to Ph.D.”, June 2001.
19. **Poster Session Co-Chair**, SID Symposium, University of Michigan, Ann Arbor, 1999.
20. **Poster Session Co-Chair**: 3rd Int. Conf. on Applications of Diamond Films And Related Materials, Gaithersburg, Washington D.C.; Co-chair of Poster Session II, 1997.
21. **Conference Co-Chair**: SPIE Conference on "Diamond Film Semiconductors" (vol. 2151), Los Angeles, CA, 1994; co-chaired by M.A. Tamor and M. Aslam, 1994.

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1. **Two Short Courses**; “Hands-on Learning Modules for Understanding Microsystems/MEMS”, GIKI, Topi, Pakistan, April 2007.
2. **Short Course**: “Microcontroller Programming and Educational Modules”, Michigan Technological University, Houghton, Summer 2004.
3. **Short Course**: “Microcontroller Programming and Robots”, Naval Engineering College (Karachi), 2001.
4. **Short Course**: “Microcontroller Programming and Robots”, EME College, NUST (Islamabad), Pakistan, 2001.
5. **Short Course**: "Diamond Sensors and MEMS", IEEE Int. Conf. on Solid State Sensors and Actuators (Transducers'97), Chicago, 1997.
6. **Short Course** on sensors given at NUST (Pakistan), 1993.

Outreach Short-Courses, Presentations 63

1. **Six 8-hour Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, June-July 2013, average number of children in a short course is 13.
2. **Short Course**; “FBEI modules”, Lurie Nanofab Facility (LNF) open house, approx. 20 children in grades 8-11, 2012.
3. **Four Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU DPO, approx. 80 children in grades 8-11, June-July 2012.
4. **Six 8-hour Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, June-July 2012, average number of children in a short course is 12.
5. **Four 8-hour Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, June-July 2011, each short course; 20 children.

6. **Four 8-hour Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, June-July 2010, each short course; 18 children.
7. **Four** 14-week courses at Woodcreek Magnet Elementary School, Lansing, 2009, Each course; 50 min per week, 20 children (2 in Fall and 2 in Spring).
8. **Four Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, June-July 2009, each short course; 8 hours, 20 children.
9. **Four** 14-week courses at Woodcreek Magnet Elementary School, Lansing, 2008, Each course; 50 min per week, 20 children (2 in Fall and 2 in Spring).
10. **Six Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, July-August 2008, each short course; 8 hours, 25 children.
11. **Short Course**; “Nano Robotics and Technology”, Impressions 5 Museum, March 2008; 5 hours, 120 visitors.
12. **Six Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics Summer Camp, July-August 2007, each short course; 8 hours, 30 children.
13. **One Short Course**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Nanotechnology and Robotics DAPCEP, July-August 2007, each short course; 12 hours, 26 High School students.
14. **Four** 14-week courses at Woodcreek Magnet Elementary School, Lansing, 2007, Each course; 50 min per week, 20 children (2 in Fall and 2 in Spring).
15. **Short Course**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, Impressions 5 Museum, April 2007, 6 hours, 80 visitors.
16. **Six Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, Woodcreek Magnet Elementary School, Lansing, 2004 - 2006.
17. **Eight Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Summer Camp, July-August 2006.
18. **Two Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, Oakland Schools Summer Camp, June/July 2006.
19. **Six Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Summer Camp, July-August 2005.
20. **Two Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, Oakland Schools Summer Camp, June/July 2005.
21. **Six Short Courses**; “Technology Assisted Science, Engineering and Mathematics (TASEM)”, MSU Summer Camp, July-August 2004.
22. **Short Course**; “WIMS for precollege students”, Okemos community Education, Summer 2003.
23. **Short Course**; “WIMS for precollege students”, July 2000, Sponsored by Diversity Programs Office at Michigan State University, 2002.
24. **Short Course**; “WIMS for precollege students”, July 2000, Sponsored by Diversity Programs Office at Michigan State University, 2001.
25. **Short Course**; “WIMS for precollege students”, July 2000, Sponsored by Diversity Programs Office at Michigan State University, 2000. *First ever courses on WIMS.*

Oral/Poster Conference Presentations

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1. Y. Chu, H. R. Chowdhury, A. Mitul, N. Uddin, M. J. Hossain, **Dean Aslam**, “Nature of Distracted Driving in Various Physiological Conditions”, SPIE Conf., 2019;
2. A. Alforidi, **D.M. Aslam**, “Partial-Resonant Flyback Converter Analysis and Comparison to the Standard Flyback Converter”, Int. Conf. on Recent Advances in Engineering and Technology (ICREAT), December 2016, Miami, USA.
3. A. Alforidi, **D.M. Aslam** “TASS” IEEE SEM, 2015.
4. A. Alinaizi, **D.M. Aslam** “TASS” IEEE SEM, 2015.
5. C. Yu, **D.M. Aslam, D. Posselt** “Microdrones” IEEE SEM, 2015.
6. A. Alforidi, **D.M. Aslam**, “Solar Tracking Systems”, IEEE SEM, Best poster award, 2013
7. H. Cheng, “Inkjet Printed Packaging of IC and MEMS”. IEEE SEM, 2013
8. N. Abu-Ageel and **D.M. Aslam**, “Laser-driven solid-state light source for automotive applications,” Poster Session, IEEE Southeastern Michigan Spring Section Conference, Dearborn, Michigan, April 25, 2013.

9. He-Chuan Cheng, Ahmad Alforidi, N. Abu-Ageel and **D.M. Aslam** "Technology Assisted Solar Systems (TASS) with Multiple Tracking Capabilities," Poster Session, IEEE Southeastern Michigan Spring Section Conference, Dearborn, Michigan, April 25, 2013.
10. N. Abu-Ageel, **D.M. Aslam**, M. Alfatlawi and A. Abu-Ageel, "Functionalized Bricks with Embedded Intelligence," Poster Session, The R&D Project Brokerage Event, Istanbul, Turkey, March 23, 2013.
11. N. Abu-Ageel, **D.M. Aslam**, M. Alfatlawi and A. Abu-Ageel, "Commercialization of Functionalized Bricks with Embedded Intelligence," The second R&D Project Brokerage Event, Istanbul, Turkey, March 22, 2013.
12. Sedat Gur and **D. M. Aslam**, "Technology Assisted Business Innovations Using Programmable Robots with Integrated RFID Readers/Writers", *IEEE Southeastern Michigan Section Spring Conference, UM Dearborn, MI, 2011.*
13. Sedat Gur, C. Zongliang and **D. M. Aslam**, "Passive Maple-seed Robotic Flyers with On-board Sensors and Actuators", *IEEE Southeastern Michigan Section Spring Conference, UM Dearborn, MI, 2011.*
14. Sedat Gur, D. M. Aslam, C. McGreal and C. Moser, "Programming of Networked NXT Robots to Study Bullying using Technology Assisted Psychology Concept", *IEEE Southeastern Michigan Section Spring Conference, UM Dearborn, MI, 2011.*
15. S. Hatch and **D. M. Aslam**, "Optimal Design of MEMS Cantilever Resonators In Terms of Quality Factor and Mass Sensitivity", *IEEE Southeastern Michigan Section Spring Conference, UM Dearborn, MI, 2011.*
16. Z. Cao and D.M. Aslam, "Polycrystalline CVD Diamond Single-Material MEMS Resonators With Piezoresistive Detection", *IEEE Southeastern Michigan Section Spring Conference, UM Dearborn, MI, 2011.*
17. M. Varney, D.M. Aslam, and Z. Cao, "Diamond Electrochemical MEMS Probes", *IEEE NEMS, China, 2010.*
18. Z. Cao and **D.M. Aslam**, "SINGLE-MATERIAL MEMS USING POLYCRYSTALLINE DIAMOND", *IEEE MEMS, 2010.*
19. Z. Cao and **D.M. Aslam**, "Polycrystalline Diamond MEMS Using Single-Material Technology", *IEEE NEMS, 2010.*
20. Z. Cao and **D.M. Aslam**, "All-Diamond Field Emission Device with a Micro-tip Array Cathode", *IEEE NEMS, 2010.*
21. Z. Cao and **D.M. Aslam**, "Thin Film Packaging Process for MEMS Device Using Polycrystalline Diamond", *IEEE NEMS, 2010.*
22. **D.M. Aslam**, S. Heatch, A. Basit, and R. Raza, "Energy Scavenging from Static Charges", *COMS 2009, 2009.*
23. **D.M. Aslam** and Z. Cao, "Single Material MEMS and NEMS", *COMS 2009, 2009.*
24. Z. Cao and **D.M. Aslam**, "Single-material Vacuum Diode", *EEE International Vacuum Nanoelectronics Conf. (IVNC), Japan, 2009.*
25. Z. Cao and **D.M. Aslam**, " ", *2009 IEEE Nanotechnology Materials and Devices Conference,??, 2009.*
26. Z. Cao and **D.M. Aslam**, " ", *2009 Diamond Sci Techn & Nano Techn Conference,??, 2009.*
27. H-Y Chan, **D. Aslam**, S. Hatch, J. Wiler, and B. Casey, "Implantable Diamond Neural Probe For In Vivo And In Vitro Physiological Recording", *IEEE Transducers Conf., Denver, Co, 2009.*
28. **D.M. Aslam**, S. Hatch, and C. Rostamzadeh, "On the Diverse Educational Applications of Van de Graaff Generators", *ASEE North Central Section Conf., Grand Rapids, MI, 2009.*
29. **D.M. Aslam**, "Bi-directional Learning; Computer Switches and Base Pairs in Genes", *Electrical and Computer Engineering, Wayne State University, Detroit, MI, October, 2009.*
30. Mike Varney, Abed Janoudi, Sean Hatch, **D.M. Aslam**, Diane Graham, "Hands-on TASEM Modules for Third Graders in Woodcreek Magnet Elementary School", *ASEE North Central Section Conf., Grand Rapids, MI, 2009."*
31. S. Hatch, B. Chaudhry, D.M. Aslam, and C. Rostamzadeh, "Energy Scavenging from Static Charges", *IEEE SEM Fall Conference on Green Energy in Great Lakes, Dearborn, MI, November, 2008.*
32. Z. Cao and D.M. Aslam, "MEMS Packaging with Built-in Energy Scavenging Devices", *IEEE SEM Fall Conference on Green Energy in Great Lakes, Dearborn, MI, November, 2008.*
33. D.M. Aslam, Z. Cao, and C. Rostamzadeh, "Hands-on Micro and Nano Learning Modules Using Programmable Lego® Robotic Van de Graaf Generators and Their Commercialization", *COMS 2008 Conf., 2008. Best Paper Award*
34. H-Y Chan, D.M. Aslam, S. Hatch, J. Wiler, and B. Casey, "In vitro and In vivo Neural Recordings using Diamond Neural Probes", *COMS 2008 Conf., 2008.*
35. D.M. Aslam, Z. Cao and C. Rostamzadeh, "Innovative Engineering Education Using Programmable Lego Robotic VD Graaf Generators", *Proc. ASEE Zone 1 Conf., West Point, New York, 2008.*

36. D.M. Aslam and A. Shao, "Nanotechnology Learning Modules Using Technology Assisted Science, Engineering and Mathematics", *Proc. ASEE Zone I Conf, West Point, New York, 2008.*
37. Najamuddin, Shafaat A. Bazaz, H.Y.Chan, **D.M.Aslam**, "Impedance Characterization of MEMS based All Diamond Neural Probe", The 20th IEEE International Conference on Microelectronics, Sharjah, 14-17 December, 2008.
38. H. Chan, M. Varney, **D.M. Aslam** and K.D. Wise, "Fabrication and Characterization of All-diamond Microprobes for Electrochemical Analysis", *IEEE NEMS, China, 2008; selected among the 10 best papers.*
39. J. Lu, N. Sepulveda, Z. Cao, **D.M. Aslam**, J.P Sullivan "High Performance Polycrystalline Diamond Micro Resonators", *IEEE NEMS, China, 2008.*
40. H. Chan, **D.M. Aslam** and K.D. Wise, "Fabrication and Characterization of All-diamond Microprobes for Electrochemical Analysis", *IEEE MEMS, Phoenix, Arizona, 2008.*
41. A. Shao, **D.M. Aslam** and E. T. Zellers, "Carbon nanotube selective growth for micro gas chromatograph and chemical nano-sensors", *ENATBio, Emerging Nanoscience Applications in Technology and Biomedicine , Wayne State University, Detroit, 2007.*
42. G. Wile and **D.M. Aslam**, "Design, Fabrication and Testing of a Miniature Wall Climbing Robot Using Smart Robotic Feet", *International Conference on Cybernetics and Information Technologies, Systems and Applications, Orlando, FL, 2007.*
43. Y. Tang and **D.M. Aslam**, "3rd generation Diamond Cochlear Probes", *ADC Conf., 2006.*
44. X. Zhu and **D.M. Aslam**, "Thin Film Diamond MEMS Packaging", *ADC Conf., 2006.*
45. Y. Tang and **D.M. Aslam**, "Diamond Cochlear Probe", *IEEE NEMS, China, 2006.*
46. X. Zhu and **D.M. Aslam**, "Diamond MEMS Packaging", *IEEE NEMS, China, 2006.*
47. N. Sepulveda-Alancaastro, **D.M. Aslam**, "RFMEMS Resonators", J. Sullivan, *IEEE NEMS, China, 2006.*
48. N. Sepulveda, **D.M. Aslam** and J. Sullivan, "Polycrystalline Diamond RFMEMS Resonators with Highest Quality Factors", *EEE Int. Conference on Micro Electro Mechanical Systems (MEMS 2006), Istanbul, Turkey, 2006.*
49. Y. Tang, **D.M. Aslam**, J. Wang, K.D. Wise, "Diamond Position Sensors for Cochlear Probe", *Transducers' 05, Seoul, S. Korea, 2005.*
50. X. Zhu and **D.M. Aslam**, "All-Diamond Thin Film Packaging", *Transducers' 05, Seoul, S. Korea, 2005.*
51. J. Ren, T. Li and **D.M. Aslam**, "A Power Efficient Link-layer Security Protocol (llsp) for Wireless Sensor Networks", *IEEE Milcom 2005, Oct. 17-20, 2005, Atlantic City, NJ.*
52. Tang et al., *ADC 2005, Chicago.*
53. Zhu et al., *ADC 2005, Chicago.*
54. Lu et al., *ADC 2005, Chicago.*
55. Sepulveda-Alancaastro, D.M. Aslam et al., *ADC 2005, Chicago.*
56. **D. M. Aslam** and Y. Lu, "CNT for Micro GC and Chemical Sensors", *Proc. Sensors Expo 2004, ed., Roger Grace, June, Detroit, 2004.*
57. N. Sepulveda-Alancaastro and **D.M. Aslam**, "Polycrystalline Diamond Technology for RFMEMS Resonators", *Proceedings of Micro and Nano Engineering 2003, Cambridge, UK, Sept. 2003.*
58. M. Baur and D.M. Aslam, "Robotic Foot", *Robotics Conf., Orlando, Florida, 2003.*
59. X. Zhu and D. Aslam, "CVD Diamond Packaging Structures", *MEMS 2003. Japan, 2003.*
60. Y. Tang, S. Sahli, **D. M. Aslam**, D. Merriam, and K. D. Wise, "Poly-diamond inter- and intra-grain piezoresistive position sensor design for WIMS", *AICHE Annual Conference on Sensors, Indianapolis, 2002.*
61. U. Kim and D.M. Aslam, "Field Emission Electro-Luminescence on Diamond and Carbon Nanotube Films", *SID symposium, Detroit, MI, 2001.*
62. U. Kim and D. Aslam, "Diamond Field Emission", *SID Symposium, 2000.*
63. R. Lal Tummala', R. Mukherjee', **D. M. Aslam**, Ning Xi', S. Mahadevan, and J. Weng, " Reconfigurable Adaptable Micro-robot", *IEEE Conf. on Systems, Man and Cybernetics, Tokyo, Japan, 1999.*
64. V. Papageorgiou, D.M. Aslam and K. Najafi, "Diamond MEMS", *SID Symposium, University of Michigan, 1999.*
65. U. Kim and D.M. Aslam and S. Kwon, "Field Emission Mapping", *IVMC 98, Asheville, NC, 1998.*
66. C. Koellner, U. Kim and D.M. Aslam and S. Kwon, "Field Emission Testing System", *IVMC 98, Asheville, NC, 1998*
67. D. Hong and D.M. Aslam, "Field emission Displays", *SID 97, U of Michigan, 1997.*
68. D. Hong and D.M. Aslam, "Simulation of FE structures", *IVMC 97, South Korea, 1997.*
69. D. Hong, D.M. Aslam, T. Grimm and S. Bandy, "Ion Implanted FE structures", *IVMC 97, South Korea, 1997.*
70. Y. Li, D.M. Aslam and S. Kwon, "Field Emission From Low Temperature Diamond", *IVMC 97, South Korea, 1997.*
71. S. Kwon, D.M. Aslam, Y. Li and Y. Lee, "Field Emission From MPCVD Films", *IVMC 97, South Korea, 1997.*
72. D.M. Aslam, Y. Li and W. McColl, "Field emission from Diamond deposited at low temperature", *Diamond'97, UK, 1997.*

73. D. Hong and D. M. Aslam, "Fabrication and Optimization of Diamond Field Emission Display Cell in Triode Modes", Diamond '96, Tours, France.
74. S. Sahli and D. M. Aslam, "Effect of Annealing on Resistivity", Diamond '96, Tours, France, 1996.
75. S. Sahli and D. M. Aslam, "Inter- and Intra-grain Conduction in Polycrystalline Diamond", Diamond '96, Tours, France, 1996.
76. G.S. Yang and D. M. Aslam², "Diamond Temperature Sensors and Heaters", Diamond '96, Tours, France, 1996.
77. D. Hong and D. M. Aslam, "Diamond Field Emitters", IVMC 96, Saint Petersburg, Russia, 1996.
78. D. Hong and D. M. Aslam, "Diamond Field Emitter Displays", IVMC 96, Saint Petersburg, Russia, 1996.
79. M. Aslam and D. Hong, "Diamond Field Emitter display Technology", SID Symposium on Vehicle Displays, Ypsilanti, MI, 1996.
80. S. Sahli and M. Aslam, "Pressure Sensors", Transducers 95, Stockholm, Sweden, 1995.
81. M. Aslam and D. Schulz, "Technology of Diamond Microelectromechanical Systems", Transducers 95, Stockholm, Sweden, 1995.
82. S. Sahli and M. Aslam, "Pressure Dependence of Piezoresistance", Applied Diamond Conference, Gaithersburg, USA, 1995.
83. S. Sahli, X. Hou and M. Aslam, "CBS Measurement on Diamond", Applied Diamond Conference, Gaithersburg, USA, 1995.
84. G.S. Yang and M. Aslam, "Temperature Sensors and Heaters", Applied Diamond Conference, Gaithersburg, USA, 1995.
85. D. Hong and M. Aslam, "Diamond Field Emitters", Applied Diamond Conference, Gaithersburg, USA, 1995.
86. D. Hong and M. Aslam, "Diamond Field Emitter Study", IVMC 95, Portland, USA, 1995.
87. D. Hong and M. Aslam, "Diamond Field Emitter Pressure Sensor", IVMC 95, Portland, USA, 1995.
88. D. Hong and M. Aslam, "Diamond Field Emitter Displays", IVMC 95, Portland, USA, 1995.
89. S. Sahli and M. Aslam, "Pressure Dependence of Resistance", CFMR Symposium, MSU, E. Lansing, 1995.
90. S. Sahli, X. Hou and M. Aslam, "Piezoresistance of CVD Diamond", CFMR Symposium, MSU, E. Lansing, 1995.
91. M.D. Jaeger, B. Golding, M. Thorpe, K. Shirai and M. Aslam, "Electrical Contacts to 3D Diamond Microcrystals", Bull. A.P.S. **40**, 221(1995).
92. S. Sahli and M. Aslam, "Pressure Dependence of Piezoresistance", CFMR Symposium, 1994.
93. S. Sahli, X. Hou, M. Aslam and B. Golding, "CBS Measurements", CFMR Symposium, 1994.
94. G.S. Yang and M. Aslam, "Ultra-High Nucleation Diamond Films for Thermistors", CFMR Symposium, 1994.
95. D.S. Hong and M. Aslam, "Diamond Cold Emitters", Diamond Technology Workshop, WSU, Troy MI, 1994.
96. G.S. Yang and M. Aslam, "Ultra-High Nucleation Density for Diamond Growth", Diamond Technology Workshop, WSU, Troy, MI, 1994.
97. Abu-Ageel, **M. Aslam**, L. Rimai, "Electrical Characterization of Polycrystalline SiC Thin Films Deposited on Fused Silica Substrates by Laser Ablation", Diamond Technology Workshop, WSU, Troy, MI, 1994.
98. Herr, J. Beck, J. McGrath, S. Sahli and **M. Aslam**, "Estimation of Diamond Film Thermal Conductivity Using Optimal Design Techniques", Sixth Inverse Problems in Engineering Seminar and Workshop, Cincinnati, 1994.
99. D.S. Hong and **M. Aslam**, "Diamond Cold Emission", ICNDST-4, 4th Int. Conf. New Diamond Sci. & Technol., Kobe, Japan, 1994.
100. Yang, **M. Aslam** et al., "Ultra-high Nucleation Density", ICNDST-4, 4th Int. Conf. New Diamond Sci. & Technol., Kobe, Japan, 1994.
101. D.S. Hong and **M. Aslam**, "Field Emission From p-Type Polycrystalline Diamond Films", IVMC'94, Grenoble, France, 1994.
102. S. Sahli, X. Hou and **M. Aslam**, "Current Bias Stressing of p-type Diamond Films at Different Temperatures", High Temp. Elect. Conf., North Carolina, 1994.
103. G.S. Yang and **M. Aslam**, "Ultra High Nucleation Density for Diamond Temperature Sensors", High Temp. Elect. Conf., North Carolina, 1994.
104. M. Feldmann, M. Olinger and **M. Aslam**, "Analysis of New Cold Cathode Microelctrometer Using a Novel Corrugated Anode", Position Location and Navigation Symposium (PLANS'94), 1994.
105. S. Herr, J. Beck, J. McGrath, S. Sahli and **M. Aslam**, "Method Measuring Doped Diamond Film Thermal Conductivity Using Infrared Thermography", SPIE Int. Conf. on Diamond Film Semiconductors, Los Angeles, 1994.
106. **M. Aslam**, A. Masood, M. Tamor, "CVD Diamond Temperature Sensors", SPIE Int. Conf. on Diamond Film Semiconductors, Los Angeles, 1994.
107. Abu-Ageel, **M. Aslam**, L. Rimai, "Electrical Characterization of Polycrystalline SiC Thin Films Deposited on Fused Silica Substrates by Laser Ablation", Int. Conf. on SiC and Related Materials, Washington DC, 1993..

² Previously M. Aslam

108. I. Taher, **M. Aslam**, M.A. Tamor, "CVD Microstructures for Sensor Applications", 2nd Int. Conf. on Application of Diamond Films and Related Materials", Tokyo, Japan, 1993.
109. D.S. Hong, **M. Aslam**, M. Olinger and M. Feldmann, "Simulations of Fabricated Field Emitter Structures", International Conference on Vacuum Microelectronics, Rhode Island, USA, 1993.
110. **M. Aslam**, I. Taher, M.A. Tamor, R. Elder, "CVD Diamond Piezoresistive Sensors", Transducer 93, Int. Conference on Solid-State Sensors and Actuators, Yokohama, Japan, 1993.
111. I. Taher, **M. Aslam**, M.A. Tamor, "CVD Polycrystalline Diamond Structures For Micromechanical Sensor Applications", Diamond Workshop, Madison, Wisconsin, USA, 1993.
112. I. Taher, **M. Aslam**, M.A. Tamor, "Doping Dependence of Piezoresistive Effect in Diamond", CFMR Symposium, MSU, 1993.
113. L. Rimai, R. Ager, J. Hangan, C. Peters, E.M. Logothetis, N. Abu-Ageel and **M. Aslam**, "Laser Deposited SiC on Fused Silica and Sapphire Substrates", MRS Meeting, Boston, 1992.
114. **M. Aslam**, G. Myers, P. Klimecky, L. Cathey, R. Elder and B. Artz, "Characterization of Evaporated Si Cold Emitters", 5th International Conference on Vacuum Microelectronics, Vienna, Austria, 1992.
115. **M. Aslam**, I. Taher, A. Masood, M. Tamor, "CVD Diamond Piezoresistive Sensors", 3rd International Conf. on New Diamond Science and Technol. & Diamond 92, Heidelberg, Germany, 1992.
116. A. Masood, **M. Aslam**, I. Taher, M. Tamor, T.J. Potter, C. Evans, T. Curtis and J. Ledford, "Diamond Piezoresistive Sensors for High Temperatures", CFMR Industry Symposium, East Lansing, MI, 1992.
117. P. Klimecky, **M. Aslam**, G. Myers, R.E. Elder and B. Artz, "Current-Voltage Characteristics of Micromachined Si Vacuum Diodes", CFMR Industry Symposium, East Lansing, MI, 1992.
118. C. Pawlowski, **M. Aslam**, L. Rimai and W.P. Pratt, "In-Situ Laser Deposition of $YBa_2Cu_3O_x$ Films Using Microwave Plasma Disk Reactor Oxygen Source", CFMR Industry Symposium, East Lansing, MI, 1992.
119. R. Zapp, H. Tseng, **M. Aslam** and G. Brown, "Smart Logic Design for Instrumented Sphere Miniaturization", International Meeting of American Society of Agricultural Engineers, Sharlott, North Carolina, 1992.
120. **M. Aslam**, A. Masood, R.J. Fredricks, M.A. Tamor, "Thin Film Diamond Temp. Sensor Array for Harsh Aerospace Env.", SPIE Conf., Orlando, FL, 1992.
121. A. Masood, **M. Aslam**, M.A. Tamor and T.J. Potter, "Electrical Characterization of Boron Doped Diamond Film Resistors Synthesized by Hot-Filament CVD", 3rd Annual Diamond Workshop, Wayne State Uni., Detroit, MI, 1992.
122. **M. Aslam**, I. Taher, A. Masood, M.A. Tamor and T.J. Potter, "Homoepitaxial and Polycrystalline CVD-Diamond Films for Piezoresistive Devices", 3rd Annual Diamond Workshop, Wayne State Uni., Detroit, MI, 1992.
123. A. Masood, **M. Aslam**, M.A. Tamor and T.J. Potter, "Boron-doping and Electrical Characterization of Thin Diamond Films for Device Applications", ISDRS 91, Charlottesville, Virginia, 1991.
124. **M. Aslam**, I. Taher, A. Masood, M.A. Tamor and T.J. Potter, "Technology and Characterization of CVD-Diamond Piezoresistive Devices", ISDRS 91, Charlottesville, Virginia, 1991.
125. J. Tseng, **M. Aslam**, H.R. Zapp and G. Brown, "Multichip Housing for Instru. Sphere Miniaturization", American Society of Ag. Engineers Meeting, Chicago, IL, 1991.
126. G. Myers, **M. Aslam**, L. Cathey, R.E. Elder and B. Artz, "Fabrication of Silicon Cold-Cathodes by Electron Beam Evaporation", Technical Digest, 4th International Vacuum Microelectronics Conference, Nagahama, Japan, 1991.
127. I. Taher, **M. Aslam**, A.H. Meitzler, and G. sloka, "Resistance-vs-Strain Nonlinearity for Ion-Implanted, Junction-Isolated Piezoresistors", Sensors-Expo 90, Chicago, IL, U.S.A.(1990).
128. **M. Aslam**, B. Artz, T. J. Pratter, and S. Kaberline, "A Study of Micromachining-related Cross Contamination Pertaining to Hybrid Vacuum Microelectronic Devices," 3rd International Conference on Vacuum Microelectronics, Monterey, CA, U.S.A.(1990).
129. C. Pawlowski, **M. Aslam**, L. Rimai, W.P. Pratt, "In-Situ Deposition of $YBaCuO$ Films by Laser Deposition Using MPDR Oxygen Source", CFMR/Industry Symposium, Michigan State University, East Lansing, MI, U.S.A.(1991).
130. Pawlowski, **M. Aslam**, C. Nelson, W.P. Pratt, P. Vaishnava, E.M. Logothetis, and R. Soltis, "In Situ Deposition of $YBaCuO$ Films by Laser Deposition", Fourth Annual CFMR/Industry Symposium, Michigan State University, East Lansing, MI, U.S.A.(1990).
131. Soltis, E. M. Logothetis, D. W. Hoffman, J.W. Hangan, Shinozaki, **M. Aslam**, L.E. Wenger, and J.T. Chen, "Deposition of $YBa_2Cu_3O_7$ Films on Sapphire by RF Triode Sputtering", International Conference on Science and Technology of Thin Film Superconductors, Denver, Colorado(1990).
132. R. Soltis, W.T. Donlon, S. Shinozaki, R.M. Ager, C.R. Peters, E.M. Logothetis, **M. Aslam**, L.E. Wenger, J.T. Chen, and R. Nelson, "Properties of $BiSrCaCuO$ Films by RF Triode Sputtering", International Conference on Materials and Mechanisms of HTSC, Stanford University, Stanford, CA, U.S.A (1989).
133. R.E.Soltis, S.Shinozki, R.Ager, E.M.Logothetis, **M.Asalam**, L.E.Wenger and J.T.Chen, "R F Triode Sputter Deposition of Superconducting $BiCaSrCuO$ Films", American Physical Soc. Meeting St.Louis, U.S.A. (1989).
134. **M. Aslam**, "Performance-limiting defects in VLSI devices", CM/ESD Conference, Dearborn, MI, U.S.A. (1989).

135. Soltis, S. Shinozaki, R.M. Ager, R.E. Chase, E.M. Logothetis, **M. Aslam**, R. Nelson, M. Gorbett, J.T. Chen and L.E. Wenger "Superconducting YBaCuO Films on Si and SiO₂ and SiO₂/Si Without Buffer Layers", Conf. on Science and Technology of Thin Film Superconductors, Colorado Springs, Colorado, U.S.A. (1988).
136. R. Soltis, **M. Aslam**, S. Shinozaki, R. Ager, E.M. Logothetis, J.T. Chen, and L.E. Wenger, "Rapid Thermal Annealing of YBaCuO Films on Si and SiO₂ Substrates", International Materials Research Society Symposia, Boston, Massachusetts, U.S.A., (1988).
137. **M. Aslam**, R.E. Soltis, E.M. Logothetis, J.T. Chen and L.E. Wenger "Technology of Superconducting Films on Si, SiO₂ and Si₃N₄", IEEE Vacuum Microelectronics Conference, Williamsburg, Virginia, U.S.A., (1988).
138. **M. Aslam**, R.E. Soltis, E.M. Logothetis, R. Ager, M. Mikkor, W. Win, J.T. Chen and L.E. Wenger, "Rapid Thermal Annealing of YBaCuO Films and Si and SiO₂ Substrates", American Ceramic Society Meeting, Cincinnati, Ohio, U.S.A. (1988).
139. **M. Aslam**, "Electron Mobility in Boron Implanted Si Inversion Layers", Portland International Conference on Silicon Technology, Portland, Oregon, U.S.A., (1987).
140. **M. Aslam**, "Nature of Instabilities in VLSI and VHSIC", Royal Aeronaut. Soc. Conf., Karachi, Pakistan, (1985).
141. M. Offenbergh, **M. Aslam**, T. Johansson and P. Balk, "Electron Traps in B -Implanted SiO₂ ", ESSDERC 84, Lille, France (1984).
142. **M. Aslam** and P. Balk, "Structural Relationship Between Electron and Hole Traps in Thermal SiO₂ Films", 1983 IEEE Semiconductor Interface Specialists Conference, Fort Lauderdale, U.S.A., (1983).
143. Do Thanh, **M. Aslam** and P. Balk, "Processing Dependence and Generation of Interface States in MOS- Structure Upon Electron and Hole Injection," ESSDERC 83, Canterbury, U.K., (1983).
144. **M. Aslam** and P. Balk, "Processing Dependence and Nature of Hole Traps in SiO₂", INFOS '83, Eindhoven, Holland, (1983).
145. **M. Aslam**, R. Singh, and P. Balk, "Electronen-Selftrapping in SiO₂ von MOS-Strukturen", German Physical Society Conference, Freudenstadt, Germany (1983).
146. **M. Aslam**, M. Maier, D.R. Young, and P. Balk, "Effect of High Temperature Annealing on Electron Traps in SiO₂", ESSDERC and Symposium 82, Munich, Germany, (1982).

Invited and Other Seminars

43

1. D.M. Aslam, many talks during 2013 – 2024 to be updated.
2. D.M. Aslam, "FBEI Modules", Harvard University, October, 2012.
3. D.M. Aslam, "FBEI Modules", Tufts University, October, 2012.
4. D.M. Aslam, "Carbon-Based NEMS and MEMS", Taibah University, Madinah, Saudi Arabia, June 2010.
5. D.M. Aslam, "Carbon-Based BioMEMS", KAUST University, Thuwal, Saudi Arabia, June 2010.
6. D.M. Aslam, "Single Material MEMS", IEEE SEM, U of Michigan, Ann Arbor, 2010.
7. D.M. Aslam, " Polycrystalline Diamond Bioprobes", Oral & Maxillofacial Surgery, Department of Surgery, U of Michigan Hospital, Ann Arbor, MI, USA, March 2010.
8. D.M. Aslam, " Single-Material MEMS and NEMS Using Polycrystalline Diamond", EM Virtual, Ann Arbor, MI, USA, February 2010.
9. D.M. Aslam, "Smart Nanobricks for STEM Education and Future Workforce", Native American Tribes in Michigan, Casino Resort, Manistee, MI, USA, January 2010.
10. D.M. Aslam, "Smart Nanobricks for STEM Education", Saginaw Chippewa Tribe, Casino Resort, Mt. Pleasant, MI, USA, January 2010.
11. D.M. Aslam, "Functionalized Nanobricks with Embedded Intelligence", Charter Schools, Grand Rapids, Michigan, USA, December 2009.
12. D.M. Aslam, "Diamond probes for Muscle Strain Measurements", GI Molecular Motors Lab, Department of Pediatrics, U of Michigan Hospital, Ann Arbor, MI, USA, December 2009.
13. D.M. Aslam, "Diamond Mirco systems Probes for Sensing in Skin", Department of Pathology, U of Michigan Hospital, Ann Arbor, MI, USA, December 2009.
14. D.M. Aslam, "Diamond Mirco systems Probes and STEM Education", Galt, Ann Arbor, MI, USA, November 2009.
15. D.M. Aslam, "Micro and Nano System Integration", Air University, Islamabad (Pakistan), July 2009; *through live video conference*.
16. D.M. Aslam, "Carbon-Based MEMS", Center for Micromanufacturing, Louisiana Tech U, Ruston, June 2008.
17. D.M. Aslam, "From Micro Electro Mechanical Systems to Diamond Neural Probes", Inst. Theoret. Physik, Technical University of Berlin, Berlin, Germany, December 2007.
18. D.M. Aslam, "Design, Fabrication and Testing of All-Diamond Neural Probes", Inst. Messtechnik, Technical University of Berlin, Berlin, Germany, December 2007.
19. D.M. Aslam, "Carbon Basen Micro and Nano Technologies for Microsystems", University of Engineering and Technology, Lahore, Pakistan, April 2007.

20. D.M. Aslam, "Carbon Basen Micro and Nano Technologies for Microsystems", GIK Institute of Technology, Topi, Pakistan, April 2007.
21. D.M. Aslam, "Role of Micro and Nano in TASEM", Owosso School, Owosso, MI, March 2007.
22. D.M. Aslam, "TASEM for Lay Audiences", Impressions 5 Museum, Lansing, 2006.
23. D.M. Aslam, "Role of Micro and Nano in TASEM", Department of Science Education, Harvard University, Cambridge, MA, 2006.
24. D.M. Aslam, "Role of Micro and Nano in TASEM", Center for Innovations in Education, Princeton University, Princeton, NJ, 2006.
25. D.M. Aslam, "Diamond Technology for Microsystems", Electrical Engineering, University of South Florida, Tampa, April 5, 2006.
26. D.M. Aslam, "Science Teacher Seminar", Science and Math Education, Michigan State U, 2002.
27. "Carbon-based Micro and Nano Technologies for WIMS", University of Michigan, Ann Arbor, MI, 2002.
28. "Diamond Sensor Technologies" Delphi Automotive, Warren, MI, 2000.
29. "Technology of poly-diamond: FED, sensors and MEMS", CMP seminar, Physics Dept, MSU, 2000.
30. "Diamond sensors", MSU Cyclotron Center, 1999.
31. "IC-compatible Diamond Films Technology for Automotive Sensors", Delco Electronics, Kokomo, IN, 1998.
32. "IC-compatible Diamond Films Technology for Field Emission Displays and Sensors", OIS, Northville, MI, 1998.
33. "Poly- and Microcrystalline Diamond Films Technology for Field Emission Displays", Display Technology and Manufacturing Center, University of Michigan, Ann Arbor, MI, 1997.
34. "Fabrication and Optimization of Triode Field Emission Displays Cells", SID Detroit Chapter Seminar, Michigan State University, E. Lansing, MI, 1997.
35. "Diamond Film Technology for Field Emission Displays", University of Michigan, Ann Arbor, MI, 1996.
36. "On-Chip Si Vacuum Microtubes", Wayne State University, Detroit, MI, 1992.
37. "Trapping Centers in MOS Devices with Al, Poly-Si or YBaCuO Gates", Electrical Engineering and Systems Science, Michigan State University, East Lansing, Michigan, U.S.A. (1988).
38. "Trapping Centers in MOS Devices with Al, Poly-Si or YBaCuO Gates", Microelectronics Center of North Carolina, Research Triangle Park, North Carolina, U.S.A. (1988).
39. "Common Origin for VLSI/ULSI Instabilities Related to Charge Trapping in SiO₂", Ford Scientific Research Laboratories, Dearborn, Michigan, U.S.A. (1987).
40. "Device Aspects of Optical Fibre Communication Systems", Avionics Engineering, PAF College of Aeronautical Engineering, Karachi, Pakistan (1985).
41. "Common Origin for Electron and Hole Traps in SiO₂ of MOS-Structures", ESAT Laboratory, Katholieke University Leuven, Heverlee, Belgium (1984).
42. "Structure of Electron and Hole Traps in Thermal SiO₂", Department of Electrical and Computer Engineering, Wayne State University, Detroit, Michigan, U.S.A. (1983).
43. "Annealing Behavior of Electron and Hole Traps in SiO₂ of MOS- Structures", Institute of Solid State Physics, Technical University, Munich, Germany (1983).
44. "High Temperature Annealing Behavior of Trapping Sites in SiO₂", Siemens Research Laboratories, Munich, Germany (1983).

Non-Reviewed Posters in Regional Research Meetings

16 + 42

[The number of papers/posters and participants in these meetings are over 150 and 175, respectively]

1. Others, D.M. Aslam, "", Poster, UM, 2019.
2. X. Yang, M. Shah, **D.M. Aslam**, "Growth of Conformal Carbon-Nanotube Layers for a μ GC", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2009.
3. Z. Cao and **D.M. Aslam**, "Poly-C Micro- and Nano-Resonators", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2009.
4. Z. Cao and **D.M. Aslam**, "Poly-C MEMS Smart Packaging", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2009.
5. H. Chan, A. Shao, **D.M. Aslam**, "Growth of Conformal Carbon-Nanotube Layers for a μ GC", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2008.
6. Z. Cao, J. Lu and **D.M. Aslam**, "Poly-C Micro- and Nano-Resonators", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2008.
7. Z. Cao and **D.M. Aslam**, "Poly-C MEMS Smart Packaging", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2008.
8. H-Y. Chan and **D.M. Aslam**, "All-Diamond MEMS Neural Probes", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2007.
9. A. Shao, **D.M. Aslam**, "Growth of Conformal Carbon-Nanotube Layers for a μ GC", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2007.
10. J. Lu and **D.M. Aslam**, "Poly-C Micro- and Nano-Resonators", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **4 posters** during 2006-07.
11. Z. Cao and **D.M. Aslam**, "Poly-C MEMS Smart Packaging", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2007.
12. H-Y. Chan and **D.M. Aslam**, "All-Diamond MEMS Neural Probes", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **2 posters** during 2007.

13. X. Zhu and **D.M. Aslam**, “All-Diamond Packaging for WIMS”, WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **10 posters** during 2002-07.
14. Y Tang, and **D.M. Aslam**, “Ultra-Sensitive Sensors for a Cochlear Prosthesis”, WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **12 posters** during 2001-07.
15. Y. Lu and **D.M. Aslam**, “Growth of Conformal Carbon-Nanotube Layers for a μGC ”, WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **6 posters** during 2002-05.
16. N. Sepulveda-Alancastro and **D.M. Aslam**, “Poly-C RFMEMS Resonators”, WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; **8 posters** during 2002-06.

Non-Reviewed Technical Reports 42

1. 15 reports for 2007-09, to be updated, 2007-2010.
2. A. Shao, **D.M. Aslam**, “Growth of Conformal Carbon-Nanotube Layers for a μGC ”, WIMS Annual Report (U of Michigan, Ann Arbor), p-47, 2006.
3. H-Y Chan, Y Tang, and **D.M. Aslam**, “All-Diamond Probes for Cochlear and Neural Application”, WIMS Annual Report (U of Michigan, Ann Arbor), p-66, 2006.
4. Y Tang, and **D.M. Aslam**, “Ultra-Sensitive Sensors for a Cochlear Prosthesis”, WIMS Annual Report (U of Michigan, Ann Arbor), p-69, 2006.
5. **D.M. Aslam**, “Technology-Assisted Science, Engineering, and Mathematics for K-Ph-D Education”, WIMS Annual Report (U of Michigan, Ann Arbor), p-161, 2006.
6. Z. Cao and **D.M. Aslam**, “Smart All-Diamond Packaging for WIMS”, WIMS Annual Report (U of Michigan, Ann Arbor), p-91, 2006.
7. X. Zhu and **D.M. Aslam**, “All-Diamond Packaging for WIMS”, WIMS Annual Report (U of Michigan, Ann Arbor), p-108, 2006.
8. J. Lu and **D.M. Aslam**, “Poly-C Micro- and Nano-Resonators”, WIMS Annual Report (U of Michigan, Ann Arbor), p-110, 2006.
9. Y. Lu and **D.M. Aslam**, “Growth of Conformal Carbon-Nanotube Layers for a μGC ”, WIMS Annual Report (U of Michigan, Ann Arbor), p-47, 2005.
10. Y Tang and **D.M. Aslam**, “Ultra-Sensitive Sensors for a Cochlear Prosthesis”³, WIMS Annual Report (U of Michigan, Ann Arbor), p-70, 2005.
11. X. Zhu and **D.M. Aslam**, “All-Diamond Packaging for WIMS”, WIMS Annual Report (U of Michigan, Ann Arbor), p-91, 2005.
12. **D.M. Aslam**, “K-PhD: Cognitive Learning Modules For Science and Engineering in K-12”, WIMS Annual Report (U of Michigan, Ann Arbor), p-148, 2005.
13. Y. Lu and **D.M. Aslam**, “Growth of Conformal Carbon-Nanotube Layers for a μGC ”, WIMS Annual Report (U of Michigan, Ann Arbor), p-52, 2003.
14. Y Tang and **D.M. Aslam**, “Ultra-Sensitive Sensors for a Cochlear Prosthesis”⁴, WIMS Annual Report (U of Michigan, Ann Arbor), p-78, 2003.
15. X. Zhu and **D.M. Aslam**, “All-Diamond Packaging for WIMS”, WIMS Annual Report (U of Michigan, Ann Arbor), p-109, 2003.
16. N. Sepulveda-Alancastro and **D.M. Aslam**, “Poly-C RFMEMS Resonators”, WIMS Annual Report (U of Michigan, Ann Arbor), p-130, 2003.
17. **D.M. Aslam**, “K-PhD: Cognitive Learning Modules For Science and Engineering in K-12”, WIMS Annual Report (U of Michigan, Ann Arbor), p-158, 2003.
18. N. Sepulveda-Alancastro and **D.M. Aslam**, “Poly-C RFMEMS Resonators”, WIMS Annual Report (U of Michigan, Ann Arbor), p-64, 2002.
19. Y Tang and **D.M. Aslam**, “Ultra-Sensitive Sensors for a Cochlear Prosthesis”, WIMS Annual Report (U of Michigan, Ann Arbor), p-69, 2002.
20. Y. Lu, U. Kim, and **D.M. Aslam**, “Growth of Conformal Carbon-Nanotube Layers for a μGC ”, WIMS Annual Report (U of Michigan, Ann Arbor), p-93, 2002.
21. X. Zhu and **D.M. Aslam**, “All-Diamond Packaging for WIMS”, WIMS Annual Report (U of Michigan, Ann Arbor), p-123, 2002.
22. R. Brown, K.D. Wise, **D.M. Aslam**, et al., “Master of Engineering Degree in Integrated Microsystems”, WIMS Annual Report (U of Michigan, Ann Arbor), p-133, 2002.
23. **D.M. Aslam**, “Microsensor Inspired Learning System (MILS) and Robot Inspired Learning System (RILS) in K-12”, WIMS Annual Report (U of Michigan, Ann Arbor), p-139, 2002.
24. **M. Asalm**, G.S. Yang, A. Masood and R. Fredrick, "Diamond Film Temperature and Heat Flux Sensors", NASA Technical Report, 1995.
25. I. Taher, **M. Asalm**, M. Tamor, "CVD Diamond Films Strain Sensors", Ford Technical Memorandum, 1994.
26. **M. Aslam** and S.L. McCarthy, "Etching Behavior of Ambient Oxides in Si", Ford Technical Memorandum, SRM-87-14, 1987.
27. Do Thanh and **M. Aslam**, "Generation of Interface States in MOS Structures Upon Electron and Hole Injection", Jahresbericht 1982-83, Halbleitertechnik, Technical University, Aachen, Germany.
28. **M. Aslam** and R. Singh, "Annealing Behavior of Electron and Hole Traps in Polysilicon-SiO₂-Si Structures", Jahresbericht 1982-83, Halbleitertechnik, Technical University, Aachen, Germany.
29. **M. Aslam**, "Common Origin for Electron and Hole Traps in SiO₂", Jahresbericht, 1982-83, Halbleitertechnik, Technical University, Aachen, Germany.
30. **M. Aslam**, "Annealing Behavior of Electron Traps in SiO₂", Jahresbericht 1981, Halbleitertechnik, Technical University, Aachen, Germany.

7. RESEARCH FUNDING

7.1 Currently none.

7.2 Recent Past

1. General Motors; 2018 – 2019; \$180,000, PI

2. MSU Catalyst Innovation Program (CIP): Project Code: CAT20STEM; Account #: GL100468, 2019 – 2020, \$ 10,000, “Flipped STEM Learning Using Smartphones and Hands-On FBEI (Functionalized Bricks with Embedded Intelligence) Modules”.

7.3 Past Funding; \$ 6,000,000 (my share was \$ 3,500,000)

1. GM funding, \$ 180,000; 2018-19.
2. Mathworks: Research and Education; 2013 - 2014, \$ 40,000, PI

³ Content of the report is updated every year without changing the title.

⁴ Content of the report is updated every year without changing the title.

3. NSF ERC for WIMS, “Wireless Integrated Mico Systems”, 2000 – 2010, \$ 3.5 M, Co-PI, MSU-PI.
4. Honk Kong, “Micromirror fabrication”, 2009, \$ 7,000, PI.
5. Lansing Area Schools and Parents, “TASEM Learning Modules for K-12 Education”, 2003 - 2014, \$ 155,500, PI
6. Impressions 5 Museum, “TASEM Learning Modules for K-12 Education”, 2007, \$2,500, PI
7. Woodcreek Magnet Elementary, “TASEM Learning Modules for 3rd Graders”, 2005-6, \$ 6,200, PI
8. Oakland Schools, “TASEM Learning Modules for K-12 Education”, 2005-06, \$ 6,200, PI
9. NSF Equipment Grant, “Microfabrication equipment”, 2001-04, multi-investigator, \$ 300,000, (my share is \$ 40,000), Co-PI.
10. DARPA, “Reconfigurable Adaptable Microrobot”, 6 PIs, 1998-2002, \$1,430,355. (my share is approximately \$245,000), founding Co-PI.
11. Terastore, “Carbon nanotubes”, 2000-01, 2 PIs, \$ 19,000, (my share is \$ 19,000), PI.
12. NASA, “Carbon Nanotubes”, 1999-00, 3 PIs. \$ 20,000 (my share is \$ 6,666), Co-PI.
13. NSF MRSEC, “Sensor Materials”, 1994-97, \$ 230,000, Co-PI.
14. Norton, “Poly-C Films”, 1993, \$ 20,000, PI.
15. C&J Ind, “Poly-C Structures”, 1992-93, \$ 68,000, PI
16. NASA Langeley, “Poly-C Temperature Sensors”, 1992-93, \$ 100,000, PI.
17. Ford Sci. Labs., “Poly-C Technology and SiC films”, 1990-94, \$ 75,000, PI.
18. USDA, “Miniaturization of Instrumented Sphere”, 1989-90, \$ 5,000, PI.
19. Chrysler Corporation, “MOS Relays”, 1988-90, \$ 34,000, PI.

8.1 PROFESSIONAL EXPERIENCE

Professor Emeritus, MSU Since 9/9/22

Adjunct Professor; Roswell Park Compressive Cancer Research Institute, Buffalo, NY, since 2023

Adjunct Professor, UT Southwestern, Dallas, Texas, since February 2023.

8.2 Teaching/Research

<i>Professor</i>	2010- 2022 electrical Engineering, Michigan State University, E. Lansing, MI, 48824.
<i>Assoc VP Americas</i>	2008-2016 MANCEF (www.mancef.org), Albuquerque, New Mexico.
<i>Associate Director</i>	2000-10 NSF Engineering Research Center for Wireless Integrated Micro Systems (located at U of Michigan, Ann Arbor).
<i>Associate Professor</i>	1988-2010 Electrical Engineering, Michigan State University, E. Lansing, MI, 48824.
<i>Visiting Scholar</i>	2007 <i>Electrical Engineering and Computer Sciences, University of Michigan, Ann Arbor, MI</i>
<i>Sabbatical Leave</i>	Fall 2007 <i>U of Michigan, Ann Arbor, and Technical University of Berlin, Germany.</i>
<i>Assistant Professor</i>	1986-88 Electrical and Computer Engineering, Wayne State University, Detroit, MI 48202.
<i>Summer Assignment</i>	1987 Ford Scientific Research Laboratories, Dearborn, Michigan.
<i>Squadron Leader</i>	1984-86 Avionics Engineering Dept., PAF CAE, Karachi, Pakistan.
<i>Post Doc. Position</i>	1983-84 Electrical Engineering, Technical University (RWTH) Aachen.
<i>DAAD Fellow</i>	1975-83 RWTH Aachen, Germany.
<i>Flight Lieutenant</i>	1974-75 H & S Department, PAF College of Aeronautical Engineering, Karachi.
<i>Lecturer</i>	1970-74 Physics Department, Panjab University, Lahore, Pakistan.

8.2 Research Administration

2000 – 2010 *Associate Director, NSF Engineering Research Center (ERC) for WIMS, U of Michigan, Ann Arbor*

2000 – 2010 *Member Executive Committee, WIMS ERC*

2000 – 2010 *Member Administrative Committee, WIMS ERC*

1990 – 2015 *MANTL Director & Principal Investigator on major External Funds (15-year average is \$ 140,000/year)*

2016 – 2022 *Director Mind and Microsystems Lab*

8.3 Industrial

1987 - 1993 One day per week, Scientific Research Laboratories, Ford Motor Co., Dearborn, MI.

8.4 Academic

1999 - 2010 One day per week, EECS Department, University of Michigan, MI.

8.5 Technological

1987 - 2010 Microsensor and micromachining technologies, IC-compatible diamond film technology for microsensors, MEMS and field emission displays.

1976 - 1984 MOSFET fabrication technologies and MOS characterization, RWTH Aachen .

8.6 Laboratory Development

- Mind BioMEMS Lab, 2018 - present
- Micro and Nano Technology Lab (MANTL); Michigan State University (2000-2018).
- Microfabrication Laboratory (cleanroom), Michigan State University (with D.K. Reinhard).
- Microsensor Lab., Michigan State University (C-V/I-V, field-emitter/microsensor characterization, etc.).
- Microdevice Fabrication Laboratory (class 100 cleanroom), designed at Wayne State University (1986-88).
- MOS Characterization Laboratory, Dept. of Semiconductor Engin., RWTH Aachen, Germany, 1978 - 80.

8.7 Hardware and Software Technologies

- *Mind-controlled LEGO robot*, 2015.
- *Microcontrollers*; chip programmers, C-compiler, system integration (robots, Microsystems, etc.).
- *Operating Systems (familiarity/usage)*; Window, Linux, Mac.
- *Software Tools*; MS Office, OpenOffice, 3D StudioMax, Mathematica, Dreamweaver, CoventoreWare, PSpice, L-Edit.
- *RFID (radio frequency identification)*; RFID readers, RFID tags, technology-assisted business innovations (TABI), robotic TABI table-top factories for supply chain models.
- *Others*; programmable robotic van de Graaff generators, GPS, HD Video shooting and editing, etc.

9. PROFESSIONAL AND PUBLIC SERVICE

Public Service and Service to Professional Societies

- ◆ IEEE Life Senior Member, January 1, 2018.
- ◆ Member of National Academy of Inventors (NAI), since April 2015.
- ◆ Invited by National Academy of Engineering to participate as a fellow in their FOEE symposium, Irvine, CA, 2012.
- ◆ IEEE founding SEM Nanotechnology Council Chair, 2008 -11.
- ◆ IEEE SEM Education Society Chair, 2008 - 11.
- ◆ Member of General Advisory Board, MANCEF, 2009-2012.
- ◆ Associate Vice President Americas of MANCEF, 2008-2012.
- ◆ A certificate of Appreciation awarded to Dean Aslam by American Society for Engineering Education for his service at West Point for ASEE Zone-1 conference, March 2008.
- ◆ Dean Aslam has served on the NSF review panel for the award of Microsystems Education Center (MEC) (awarded to TVI, UNM and Sandia) at TVI community college in Albuquerque, MN, 2003.
- ◆ Dean Aslam served on National Visiting Committee of the TVI NSF Microsystems Education Center, 2004-2008.
- ◆ Faculty mentor, MSU branch of Student Leadership Council of NSF WIMS ERC during 2003-2010.
- ◆ A certificate of Appreciation awarded to Dean Aslam and his grad students by Lansing School District for valuable contributions in K-12, 2004.
- ◆ In recognition of service of Dean Aslam his contribution to international peace and to Lansing area education, a special tribute was awarded by State Representative Paul N. DeWeese (of 67th district), Lansing, MI, 2002.
- ◆ Dean Aslam served on the Board of Directors of Global Hope Makers during 2001 - 2002.
- ◆ A Medal awarded to Dean M. Aslam in appreciation of his service to Detroit Chapter of ASM International, Farmington Hills, MI, U.S.A. (1990), 1990.

Professional Paid Consulting

2009 - 2010	WEBB, Farmington Hills, MI; Static charges in Auto Guided Vehicles
2002-2003	Sentec Corporation, Walled Lake, MI; biomedical sensor using DRIE
2002	A.J. Boggs and Company; sensors in biomedical area
2000	Terastore, nanotubes.
1994 - 1995	S Diamond Optical Structures.
1992 - 1993	Smiths Industries, Grand Rapids, MI; cold emitter accelerometer.
1992 - 1993	Ford Motor Company, Dearborn, MI; diamond electronic devices.

Professional Volunteer Consulting & Service

2014 – 2019	Advisory Board Member, Lansing Magnet Schools
2003 – 2011	Woodcreek Magnet Elementary School, science and technology curriculum development for better testing scores; live video interaction with their students out of my MSU office.
2002 – 2004	Rural Area Schools (Ovid-Elsie, MI), technology assisted science and engineering education to improve standards; live video interaction with their students out of MSU.

- 2000 – 2003 Okemos area schools, science, technology, engineering and mathematics (STEM) pilot program; three microsystems STEM hardware module categories (total of 15 modules) delivered for class room teaching in Okemos High (Mr. C. Kelly and Mr. J. Olstad).
- 2001 – 2002 After a 2nd grader from my K-12 team invented a robot and presented at the 2001 Ardesta Openhouse, Rick Schneider (CEO of Ardesta and Gateway Computers) donated \$ 1,000 to Cornell Elementary School (the School of this second grader), Okemos, MI.

10. AWARDS, FELLOWSHIPS AND HONORS

- ◆ IEEE Life Senior Member, January 1, 2018.
- ◆ Member of National Academy of Inventors (NAI), since April 2015.
- ◆ Best Paper Award for Innovations in Education received from COMS Int Conference, 2008.
- ◆ Member of National Visiting Committee of the TVI NSF Microsystems Education Center, 2004-2008.
- ◆ IGERT Program Award to Dean M Aslam by Dean of Engineering, University of South Florida, for support of their IGERT program, 2006.
- ◆ 'Excellent in Service' Award to Dean M. Aslam for chairing the poster session of 2006 Nanomedicine Conference, MSU, E. Lansing, 2006.
- ◆ Reviewer for IEEE Electron Device Letters, IEEE Trans. Electron Dev., IEEE JMEMS, Applied Physics Letters, J. Vacuum Science & Technology, J. of Applied Physics, Diamond and Related Materials, Carbon, Phys. Stat. Solidi, etc.
- ◆ Certificates of Recognition awarded to Dean Aslam by:
 - IEEE Keynote on Stem Education; 2021
 - IEEE SEM section for outstanding contribution as invited speaker and to the success of the IEEE Fall 2008 SEM conference.
 - Sloan Foundation for graduating a minority doctoral student, 2008
 - ASEE Zone-1 for Contribution to Science Teacher Workshop at West Point, 2008.
 - Micro and Nanotechnology Commercialization Education Foundation for Contribution to High Desert MNT Regional Workshop, 2004.
 - MSU R.E. McNair Post-Baccalaureate Achievement Program for Mentoring a McNair/SROP Scholar.
- ◆ Member of Board of Directors of Global Hope Makers 2001-02.
- ◆ Member of Board of Directors of MSU Chapter of AAUP, 2008-2014.
- ◆ Panelist for NSF research and SBIR proposals, 2003-2011.
- ◆ DAAD (German Academic Exchange Service) Fellowship 1975-83.
- ◆ Pakistan Government Scholarship 1963-69 (awarded to high-achieving students).
- ◆ Senior Member of IEEE.
- ◆ Member of American Society for Engineering Education, 2008 - 2013.

11. PERSONAL

US citizen

Languages other than English: *German, Urdu, Panjabi*

Hobbies: *Gardening, new Lego-based innovative learning modules for K-12*