**MOHSEN (MO) SHAHINPOOR, Ph.D., PE**

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***1-Education:***

**Ph.D.: Mechanical and Aerospace Engineering**, Department of Mechanical and Aerospace Engineering, School of Engineering, University of Delaware, Newark, Delaware, USA, Dates of Attendance: 9/l/68 to 6/30/70

Principal Advisor: H. Fletcher Brown Professor Jertzy L. Nowinski

**M.Sc.: Mechanical and Aerospace Engineering**, Department of Mechanical and Aerospace Engineering, School of Engineering, University of Delaware, Newark, Delaware, USA, Dates of Attendance: 9/l/66 to 6/l5/68

Principal Advisors: Professors Millard F. Beatty and H. Fletcher Brown Professor Jertzy L. Nowinski

**B.Sc.: Chemical and Materials Engineering,** College of Engineering, Department of Chemical, Materials and Petroleum Engineering, Abadan Institute of Technology, Abadan, Iran, Dates of Attendance: 9/2l/62 to 7/l/66

Principal Advisor: Professor Ragden Babayan

***2-Brief Employment History, Professional Appointments & Experiences:***

**Professor and Director (7/1/2014-Continuing)**

Department of Mechanical Engineering, University of Maine, Orono, ME 04489

**Richard C. Hill Professor and Chair (7/1/2007-6/30/2014)**

Department of Mechanical Engineering, University of Maine, Orono, ME 04489

**Member**: **University Research Council, University of Maine (2/14/2016-3/30/2018)**

**Director: COE Biomedical Engineering Minor (9/1/2007-Continuing)**

College of Engineering, University of Maine, Orono, ME 04489

**Director: COE Robot Engineering Minor (9/1/2007-Continuing)**

College of Engineering, University of Maine, Orono, ME 04489

**Director: Biomedical Engineering Laboratory (9/14/2007-Continuing)**

College of Engineering, University of Maine, Orono, ME 04489

**Member**: **University Research Council, University of Maine (9/1/2007-8/15/2010)**

**Director: Advanced Robotics/Robotic Surgery Laboratory (9/14/2007-Continuing)**

College of Engineering, University of Maine, Orono, ME 04489

**Professor of Biomedical Science & Engineering (10/1/2007-Continuing)**

Graduate School of Biomedical Science and Engineering (GSBSE)

College of Natural Sciences, University of Maine, Orono, ME 04489

**Research Professor of Surgery (7/1/2002-6/30/2007)** Department of Neurological Surgery, Division of Surgery, School of Medicine

University of New Mexico (UNM), Albuquerque, NM 87103

**(Secondary appointment in UNM Medical School**

**Director: Artificial Muscle Research Institute (AMRI) (7/1/2002-6/30/2007)**

School of Medicine, Division of Neurological Surgery

University of New Mexico, Albuquerque, NM 87103

**Chief Scientist and Director of Biomedical Products (7/1/2002-6/30/2007)**

Environmental Robots Incorporated

Albuquerque, New Mexico 87108

**Regents Professor of Mechanical Engineering (8/13/1984-6/30/2002)**

Department of Mechanical Engineering, School of Engineering

University of New Mexico, Albuquerque, NM 87103

**Professor of Surgery and Biomedical Engineering (6/14/1996-6/30/2002)**

Division of Neurological Surgery, School of Medicine,

University of New Mexico, Albuquerque, NM 87103

**Co-Director with Dr. Ed Benzel (MD, Neurosurgeon): Spine Biomechatronics Laboratory (1/4/1997-6/30/2002)**

Neurological Surgery, School of Medicine and Mechanical Engineering, School of Engineering, University of New Mexico, Albuquerque, NM 87103

**Licensed Professional Engineer (PE)**

State of Maine, **License No. 11853**, **(1/20/2009-Continuing)**

State of New York, **License No. 58845**, **(9/15/1982 Continuing)**

State of New Mexico **License No. 9353**, **(6/16/1982-Continuing)**

**Consultant**: **Sandia National Laboratoires, Albuquerque, NM** **(1/15/1985-9/15/2002)**

**Consultant**: **Los Alamos National Lab., Los Alamos, NM (9/12/1988-8/15/2000)**

**Chairman**: **Manufacturing Engineering and Robotics (8/21/1994-8/20/1999)**

School of Engineering, University of New Mexico, Albuquerque, NM 87103

**Regents Professor (Endowed Chair)** **(7/1/1988-6/30/2002)**

School of Engineering and School of Medicine, University of New Mexico, Albuquerque, NM 87103

**Associate Dean of Engineering** **(1/13/1993-1/4/1995)**

School of Engineering, University of New Mexico, Albuquerque, New Mexico

**Research Professor** **(8/15/1991-9/30/1993)**

Divisions of Engineering & Applied Science and Geological & Planetary Sciences, California Institute of Technology (CALTECH), Pasadena, California

**Halliburton (Endowed Chair) Professor of CAD/CAM, CIM & Robotics**

**(8/15/1987-1/15/1991, also 8/15/1995-8/15/1998)**

College of Engineering, University of New Mexico, Albuquerque, New Mexico

**Director: CAD/CAM, CIM & Robotics Laboratories** **(9/14/1987-12/31/2000)**

Department of Mechanical Engineering University of New Mexico, Albuquerque, NM

**Director:** Intelligent Materials, Structures and Systems Laboratory, University of New Mexico, Albuquerque, NM, USA **(4/13/1992-12/31/2001)**

**Professor and Chairman** **(8/13/1984-6/1/1988)**

Department of Mechanical Engineering, University of New Mexico, Albuquerque, NM

**Chairman, Manufacturing Engineering & Robotics** **Program** **(9/1/1987-12/31/2000)**

College of Engineering, University of New Mexico, Albuquerque, NM

**Director**: **American Society of Mechanical Engineers, ASME, New Mexico Section**

**(6/15/1985-8/30/1991)**

**Chairman: Professional Development Division (1/15/1988-9/18/2001)**

American Society of Mechanical Engineers (ASME), New Mexico Section, Albuquerque, New Mexico, NM

**Chairman**: **Solid Mechanics & Materials Processing Graduate Program**, Clarkson University, Potsdam, New York, USA **(8/30/1982-8/12/1984)**

**Co-Director**: **Robotics & Manufacturing Center** **(2/15/1982-8/12/1984)**

College of Engineering, Clarkson University, Potsdam, New York

**Professor of Mechanical & Industrial Engineering** **(1/1/1979-8/12/1984)**

Department of Mechanical & Industrial Engineering, Clarkson University, Potsdam, NY

**Council Member**: **US Institute of Colloid and Surface Science (1/1/1983-1/1/1986)**

USICSS, Potsdam NY

**Visiting Principal Scientist**: **(8/1/1978-1/1/1979)**

The Technological Institute, Northwestern University, Evanston, Illinois

**Associate Dean of Engineering** **(8/1/1976-7/31/1978)**

College of Engineering, Shiraz University, Shiraz, Iran

**Professor of Mechanical Engineering**  **(9/1/1976-1/1/1979)**

Department of Mechanical Engineering, Shiraz University, Shiraz, Iran

**Principal Research Scientist** **(6/1/1976-9/1/1976)**

Department of Mechanics and Materials Science, the Johns Hopkins University, Baltimore, MD

**Associate Professor of Mechanical Engineering** **(9/1/1972-8/31/1976)**

Department of Mechanical Engineering, College of Engineering, Shiraz University, Shiraz, Iran

**Visiting Associate Professor of Mechanics & Materials Science** **(9/1/1973-9/1/1974)**

Department of Mechanics and Materials Science, the Johns Hopkins University, Baltimore, MD, USA

**Chairman** **(12/15/1970-9/1/1973)**

Department of Mechanical Engineering, Shiraz University, Shiraz, Iran

**Assistant Professor** **(8/1/70-9/1/72)**

Department of Mechanical Engineering, Shiraz University, Shiraz, Iran

**Project Engineer** **(6/15/1968-9/1/1968)**

De Laval Turbine, Inc., Nuclear Submarine Design Division, Trenton, NJ, USA

**Research Associate** **(6/15/1968-8/1/1970)**

Department of Mechanical & Aerospace Engineering, University of Delaware, Newark, Del., USA

**Teaching Assistant** **(6/15/1966-6/15/1968)**

Department of Mechanical & Aerospace Engineering, University of Delaware, Newark, Del., USA

***3. Academic, Professional and Research-Honors and Awards:***

Elected **"Fellow of the National Academy of Inventors, NAI”** by the Board of Governors of the NAI (2015)

**Distinguished Member of the Francis Crowe Society with Medallion** (inducted: December 2008, University of Maine).

NASA 2003 “**Space Act Award”** for the Development of A Space Dust Wiper Made With Polymeric Artificial Muscles with **Dr. Yoseph Bar-Cohen of JPL**, October 31st. Von Karman Auditorium, NASA Jet Propulsion Laboratories, **Awarded by Dr. Charles Elachi.**

Elected **"Fellow of Royal Society of Chemistry, RSC"** by the Board of Governors of the Royal Society of Chemistry, (2015)

Elected **"Fellow of Institute of Physics”,** by President **Sir Peter Williams** (Fellow of the Royal Society) and the Board of Governors of **Institute of Physics**, Great Britain, (2001)

Elected **"Fellow of ASME"** by the Board of Governors of the American Society of Mechanical Engineers, (1989)

University of New Mexico Libraries **“Faculty Achievement Award”,** (1996)

Elected: **Member of the New York Academy of Sciences**, October (1995)

Received the College of Engineering **"Research Excellence Award"** for the second time, University of New Mexico, May (1995)

**Award for Excellence in Research,** Sandia National Laboratories, Twice in 1993 and 1994

Awarded by the **US Society of Professional Engineers**, New Mexico Section, the title of **"Engineer of the Year 1992"**

**New York Times** 1991 **Selected Inventor: The "Magic Wheel"**, US Patent No. **5,038,532**, Issued August 13, (1991), August 17, (1991)

**Award for Excellence in Manufacturing Engineering Education,** Society of Manufacturing Engineers, April 1991

**Albuquerque Journal**'s 1991 selected "**Rising Stars of the 90's**"

Awarded by the Board of Regents of the University of New Mexico, the title of Chaired **"Regents Professor for Life"**, (1990)

Awarded the **"Halliburton Endowed Chair Professorship in CAD/CAM, CIM & Robotics**”, in the School of Engineering, University of New Mexico, August (1988)

Received the College of Engineering **"Research Excellence Award"**, University of New Mexico, May (1988)

Awarded the University of New Mexico's Burlington Northern Foundation **“Faculty Achievement Award for Excellence in Teaching and Research”**, May (1986).

**Award of Achievement** by the U.S. Society of Technical Communications, for the Creation in 1984 of the World's First Multi-Station Robotics Instructional Laboratory at UNM, April (1986), USA

Elected: **Member of the Sigma Xi Scientific Research Society**, (March 1985)

Awarded **"Eminent Engineer"** title by the **U.S. National Engineering Honor Society**; November l983, USA

**First Prize**: **International Union of Theoretical & Applied Mechanics** (IUTAM)- Applied Mechanics Reviews International **Jumping Disk Contest**, Toronto, Canada; August l980

**Engineering Researcher of the Year l977** Award, selected jointly by the **"Academy of Sciences of Iran" and "Ministry of Science and Higher Education of Iran", awarded by Her Majesty the Queen Farah of Iran,** Tehran, Iran; l0/9/77

**Alborz Foundation** **"Distinguished Scientist of the Year l976"** Award, Tehran, Iran; 2/7/77

**4th. Place Honor** (amongst over 110,000 high school graduate applicants), National Universities Annual Admissions Contest, Tehran, Iran (1962)

***4. Non-Academic Services and Honors :***

**Talent Judge**: National Collegiate Inventors Competition (CIC) sponsored by **National Inventors Hall of Fame and conducted by:**National Academy of Inventors; (2015, 2016, 2017 and 2018, continues)

**Judge and Workshop Organizer, 6th Annual Robotics Expo-** 4H Robotics Expo and Workshop, Organized by Jen Lobley, M.ED, CVA, University of Maine-Machias Campus, State of Maine 4-H Robotics, March, 26, 2012, Machias, Maine

**Judge, State of Maine VEX Robotics Championship, April 2010, Portland, Maine**

**Championship**, Generics Soccer Team, Albuquerque Soccer League, Albuquerque, New Mexico, (1986), was **Assistant Coach.**

**Championship**, Potsdam Soccer Team, **Northern New York Soccer Tournament**, Potsdam, NY, (1982), played **Center Forward**.

**Championship**, Abadan Institute of Technology (AIT) Team, **Abadan Soccer Tournament**, Abadan, Iran, (1964 and 1966), played **Left Forward**.

**Second Place**, l967 **State of Delaware Open Chess Championship**, Title and Award, Wilmington, Delaware; 7/l8/67

**Champion**, 1st. place: **Abadan Chess Championship**, l965; Abadan, Iran; Title and Award, 4/20/65

**Pianist and Violin player**: Abadan Institute of Technology (AIT) Student Musical Band, services rendered during 7/1/1962-6/30/1966

**Student Council Officer**: Abadan Institute of Technology (AIT) Student Council, services rendered during 7/1/1962-6/30/1966

***5.1- Research Funding History* (88 Grants)*:***

**Over $15M, of past research grants and pending grants:**

NIH, R1 Grant, “Development of a Non-Invasively Adjustable Implant for Type 1 Thyroplasty”, submitted, Co-PI, $2,717,252, 9/1/2019 - 8/31/2024

RRF, 2018-2019, “Hybrid Polymer-Metal Composites made with Cellulose Nanofibrils for Sensing and Actuation Applications”, Maine Research Reinvestment Fund (RRF), co-PI, Submitted, $50,000

NIH, “A Novel Robotic Glove for Power Assistance”, Co-PI, pending, $568,103, 9/1/2018 - 9/1/2021

NSF, “NRI: “A Novel IPMC-based Robotic Glove for Hand Assistance in Activities of Daily Living”, Co-PI, declined. In the process of resubmission to NSF, based on NSF Reviewers feedback, $390,511, (8/15/2018 - 8/15/2021)

RRF, 2018-2019, “Wearable Companion Robots”, Maine Research Reinvestment Fund (RRF), co-PI, $38,000

MTI, “Establishing Biomechanics and Bio-Inspired Robotics Lab (BBRL) to Enable Assistive Products Development and Enhance Physical Therapy Services in Maine”, co-PI, MTI, $724,000, with a 1-to-1 UMaine Match for a total of $1, 448,000 (2018-2022)-declined MTI, in the process of resubmission based on MTI feedback (2018)

NSF, “NRI: Investigation of Designs and Materials Framework to Facilitate Safe Symbiotic Haptic Interactions among Ubiquitous Co-Robots and other Agents”, PI, declined NSF, in the process of resubmission based on NSF feedback, $592,523, (2017-2020)

NSF, “Analytical and Experimental Study of Fused-Filament 3D Printed Electroactive Polymer Structures”, Co-PI, declined NSF Grant, in the process of resubmission based on NSF feedback, $371,542, (2017-2019)

NSF, “Feasibility of Ionic Polymer Metal Composites (IPMCs) Micro-Nano Cantilevers as Dynamic Mode Biosensors for Detection and Measurement of Analyte Mass”, PI, NSF declined Grant, $227,428, (2016-2018)

Maine Science and Technology Foundation, “Advanced Biomechanics Laboratory for Injury Reduction and Rehabilitation”, (co-PI), MTAF Program, ($795,000), (2011-2015)

NIH, R1 Granr, “Development of a non-invasively adjustable implant technique for medialization laryngoplasty”, declined, Co-PI, $2,254,356, 12/1/2013 - 11/30/2018

NASA, “Real-time Wireless Shape Monitoring of Deployable/Inflatable Space Structures”, (co-PI), NASA EPSCoR Grant, ($1,543,000), (2010-2014)

Ophthalmotronics Corporation, “Development of Bionic Eyes Using Advanced Nano-Composites”, 2005-2007, ($248,000).

NIH/National Cancer Institute/Department of Health & Human Services, Through Magnim Inc., ”Biomagnetic Sensor Array for Cardiac/Cerebral Imaging”, 2003-2005, Phase I ($196,758)

NASA/NIAC Phase II, through OAI-ERI, “Solid State Aircraft Development Using Ionic Polymeric Artificial Muscles”, (2003-2005), ($499,753)

NASA Langley Research Center through SAIC,” Deployable Space Mirrors For Star Tracking Using Polymeric Sensors and Actuators,” (2003), ($41,000)

NASA/NIAC Phase I, Through OAI-UNM, “Solid State Aircraft Development Using Ionic Polymeric Artificial Muscles”, (2002-2004), ($75,000)

NASA/JSC,” Development of Synthetic Muscle Systems for NASA Space Robotics/EVA Applications,” Phase II, through ERI, Contract No. NAS9-02015, (2002-2004), ($599,563)

NASA/JSC,” Development of Synthetic Muscle Systems for NASA Space Robotics/EVA Applications”, Phase I, through ERI, Contract No. NAS9-02013, (2001-2002), ($69,800)

Johnson & Johnson DePuy Acromed, "Biomechanical Testing of Pedicle Screws placed in the Mid-Cervical Spine with Image Guidance" with Dr. Nevan Baldwin of Neurological Surgery Division of Medical School, No. MED-09-2001, (2000-2001), ($134,500, grant funded through UNM Medical School)

Sandia National Laboratories”, Smart Materials & Structures Research,” UNM-342622, (1998-2000), ($164,560)

Air Force Research Laboratory-ISSES, "Space Optics Actuator Development for ASTEC ISSES Effort-Preliminary Investigation,", UNM-833961, (2000-2002), ($113,450)

NSF, "Using IPMC Artificial Muscles for A Micro-Gripper," UNM-314601, (1999-2000), ($61,000)

MIT/Draper Laboratory, "Artificial Muscles for Vorticity Control of Underwater Swimming Robots,", UNM-311851 and UNM-315241, (1998-2000), ($175,800)

Naval Research Laboratory, "Design and Development of a Biomimetic Swimming Robotic Fish with Smart Skin", No. N00173-98-C-2060, (1998-2002), ($2,780,028)

NASA Johnson Space Center, "Artificial Muscles for NASA Space Applications," (1998-2000), UNM-310815, ($360,000)

Naval Research Laboratory, "Design and Development of A Biomimetic Flying Robots", No. N00115-97-C-1352, (1997-1998), ($325,044)

NASA-JPL, (1996-1999), "Artificial Muscles for Space Robotic Applications,", No. UNM-346041, ($170,000)

UNM, Artificial Muscles Research Institute, UNM Administrative Funding, (1996-1999), UNM-AMRI-1-18549, ($780,000 cash, and $720,000 in-kind)

Sandia National Laboratories, Grant No. AE-4721B, (1996-1998), ($56,000), Application of Smart Materials and Structures and Artificial Muscles to Smart Structures

Sandia National Laboratories, Equipment Grant No. AE-4721B-2, (1996-97)- ($80,000), An MTS Materials Testing System

Artificial Muscles Research & Development (AMRD), “Artificial Muscles Research,”, AMRDI-0001-UNM-347951, (1996-97), ($22,000)

Science & Technology Alliance, DOE-SNL, Grant No. AS-5088, (1996-97), ( $23,000), CAD/CAM & Robotics Training For Minority Students

Sandia National Laboratories, Equipment Grant No. AE-4721B-AM2, (1996), ($250,000), Soligen 3-Dimensional Printing Rapid Prototyping Machine

Sandia National Laboratories, Grant No. AE-4721, (1995-1996), ($46,000), Application of Smart Materials and Structures and Artificial Muscles to Micro-Machining

Waste Education and Research Consortium (WERC), (1995-1996), WERC-09-095, ($21,000), Applications of Ionic Polymeric Gels As An Encapsulation Means For Contaminated Water

Science & Technology Alliance, DOE-SNL, Grant No. AF-8846, (1995-96), ( $29,000), CAD/CAM & Robotic Training For Minority Students

Sandia National Laboratories, Equipment Grant No. AM-4721- AM1, (1995-1996)- ($287,000), 4 Stardent Graphics Workstations

National Science Foundation, DMII-DMGC-96, (1995-1996), ($187,890), 1996 NSF Design and Manufacturing Grantees Conference, Albuquerque, New Mexico

Air Force Office of Scientific Research (AFOSR) via JIMT, (1994-1997), ($96,000), Study of Environmentally Conscious Design & Manufacturing and the Eco-Factory

National Science Foundation, (1994-1996), ($299,876), A Laboratory for the Study of Interactions of Biological Systems with Synthetic Materials

Sikorsky Helicopter Company, Grant No. PO S2542146, (1994-1995), ($27,400), Manufacturing Automation of Isogrids

Sandia National Laboratories, Grant No. AE-4721, (1994)-(1995), ($40,116), Smart Materials, Artificial Muscles and Structures Research and Development

Army Research Office Grant No.32115-MS-SM, (1993-1996), ($312,000), Novel Applications of Ionic Polymeric Gels as Smart Materials and Artificial Muscles For Robotic Applications

National Science Foundation, International Union of Theoretical & Applied Mechanics (IUTAM) Symposium on Nonlinear Waves, Grant No. MSS-9302478, ($9,900),

(1993-1994)

Science & Technology Alliance, DOE-SNL, Sandia National Laboratories Grant No. AF-8846, (1993-1994), ( $19,800), CAD/CAM & Robotic Training For Minority Students

Western Regional Power Association, Intelligent Power Generation From Bio-Mass, Grant No.P-3201.29, (($24,900), (1993-1994)

Sandia National Laboratories, Grant No.AJ-4111, (1993-1994), ($12,000), Performance Evaluation of Chemical Free Thermoelectric Water Coolers

Science & Technology Alliance, DOE-SNL, Grant No. AF-8846, (1993-94), ( $20,800), CAD/CAM & Robotic Training For Minority Students

National Science Foundation, Miklowitz Memorial Symposium, Grant No.MSS-9301820, (1992-93), ( $9,900)

Sandia National Laboratories, Grant No. AE-9988, (1992-94), ( $41,450), Design For Manufacturability of Modular Multi-Chip Advanced Controllers and Their Manufacturing Costs

Sandia National Laboratories, Grant No.AE-5124, (1992-93), Velocity, Angular Dispersion and Size Distributions of Fragments in A Dynamic Fragmentation Event,

($20,560)

Environmental Protection Agency through AIPC-Pueblo Office of Environmental Protection, Grant No. UNM-128/430A, (1992-1993), ($54,000), Environmental Graduate Training and Research For The Nineteen Pueblos of New Mexico

Sandia National Laboratories, Grant No. AE-4721, (1992-1993), ($48,116), Ionic Polymeric Gel Actuators and Artificial Muscles

Sandia National Laboratories, Grant No.AC-5525, (1992), ($10,934), CAD/CAM and Robotics Summer Training of Minority Students

Los Alamos National Laboratory, Grant No. 9-X60-D1200-1, (1992), ($32,238), Manufacturing Automation of Multiple-Cycle Direct Oxide Reduction (MCDOR)

Sandia National Laboratories, Grant No. 128-378, (1991-92), ($40,490), Evaluation and Selection of CAD/CAM Systems For Small Manufacturing Job Shops

Los Alamos National Laboratory, Equipment Grant, IBM 7565 Robot Manipulator System with Series 1 Computer and High Pressure Hydraulic Unit, Grant No.326-91, (1991), ($124,659)

Los Alamos National laboratory, Grant No.128-393, (1991-1993), ($34,013), Manufacturing Automation of MCDOR

Sandia National Laboratories, Grant No. 67-7922, (1991-92), ($36,292), Novel Design and Manufacturing of Type 3 Interconnection Modules For Electronic Boards

Sandia National Laboratories, PADL-II Solid Modeling Software & Tektronix Equipment Grant No.12-3885, (1991), ($41,600)

Sandia National Laboratories Grant No.69-3960, (1990-1991),($40,095), Design of Smart Projectiles For Electromagnetic Rail Launchers and Coil guns

Sandia National Laboratories Grant No.128-372, (1990-1991), ($55,670), Modeling of High Pressure Burning of Pyrotechnic Materials

Sandia National Laboratories Grant No.66-0505, (1989-1990), ($49,652), High Pressure Burning of Pyrotechnic Materials in A Closed System

Sandia National Laboratories Grant No.40-4133, (1989-1990), ($51,300), Combustion of Pyrotechnic Materials in A Closed System

Sandia National Laboratories, Grant No. 57-9622, (1988-1989),($51,400), Characterization of High Pressures Produced by Combustion of Pyrotechnic Materials

Defense Nuclear Agency(DNA) via University of Texas at Arlington(UTA), Grant No. 142/403, (1988-1989), ($84,000), Dynamic Computer Simulations of Plasma Armature Electromagnetic Rail Launchers

Sandia National Laboratories Grant No.75-7546, (1988-1989),($49,800), Dynamic Computer Simulation of Pyrotechnic Material Combustion

Army Research Office Grant No. 24867-EG, (1987-1990), ($254,000), Dynamic Stability of Flexible Robot Manipulators

Bell and Howell Equipment Grant, Two Computer Image Processing Systems, February, (1987), ($18,000).

Sandia National Laboratory, Grant No. 23-0307, (1987-1988), ($25,000), Combustion Characteristics of Pyrotechnic Materials

Sandia National Laboratory, Grant No. 04-1186, (1986-1987), ($36,036), Characterization and Manufacturing of Active Granular Materials.

INTEL Corporation Equipment Grant, Maker 100 United States Robot, Controller and Auxiliary Equipment, (1986), ($50,000).

Sandia National Laboratories, Grant No. 04-1286, Study of Two-Fingered Robotic Gripper Dynamics, (1986-1987), ($19,460).

Southeastern Center for Electrical Engineering Education (SCEEE), Grant No. ORG Code 10815, AFWL Fellowship, (1986-1987), ($10,000).

T & W Systems Inc., Equipment and Software Grant, IBM 386 Computers & High Resolution VGA Monitors and the VERSACAD Software, (1986), ($18,500)

IBM, Equipment Grant, IBM 7535 Advanced Manufacturing System;(1985, ($64,000).

Sandia National Laboratories, Grant No. 5l-l362, (l985-1986), ($5l,232), Development of ITV For the State of New Mexico, The First Instructional Television Course On Robot

Engineering was offered and was beamed throughout the State of New Mexico on ITV to Begin the State-Wide ITV Network

Intel Corporation, Equipment Grant, Supermicro Computer System 2863l0-2 and The Associated iRMX-Based Software, (l985), ($27,725)

IBM Equipment Grant, Two Model 7565 Robots (White Cloud) Advanced Manufacturing System, plus One Series l Micro-computer System and Software, (l984), ($240,000)

General Electric Company, Grant No. J85-00032lN6765, (l984), ($l5,457), Effect of Microcracks On the Manufacturing of PZT Piezoceramic Materials

General Electric Company, Grant No. J85-00032lN47l4 and J85-00032lN0785, (l984), ($22,473), Effect of Vibratory Compaction On the Properties of Green-Pressed PZT Piezoceramic Powders

Sandia National Laboratories, Grant-in-Aid, (l984-86), ($10,000), Graduate Student Scholarship in Robotics

General Electric Company, Grant No. J85-00032lN47l4, (l983), ($17,0l6), Development of A Robotic Gripper For the GE P50 Manipulator

National Science Foundation, Grant No. CEE-83l0632, (l983), ($40,805), Experimental Determination of Coordination Number Distributions in Random Packing of Granular Materials

National Science Foundation Grant NSF-CEE-802l032, (l982), ($26,222), Frequency Distribution of Voids in Mixtures of Granular Materials

The Augsbury Corporation, Glens Falls, (1980), NY, Grant No. Res. Div. Acc. No. 37583l ($l8,000), Electromagnetic Separation of Coal-Oil Mixtures

CCT Division of Research Grant No. 336258, (l980), ($3,006), Innovative Teaching Techniques

CCT Division of Research Grant No. 338250, (l980), ($3,500), Development of A Robotics Course”,

National Science Foundation Grant NSF-CME802l032, (l980), ($25,000), Frequency Distribution of Voids In Granular Materials

Atomic Energy Organization of Iran, Research Grants AE0l-Pu-RG (l976 - 1978) and Grants AE0l-Nu-RG (1976-1979) Shiraz (Pahlavi) University, Shiraz, and Northwestern University, Evanston, IL ($744,000), Aseismic Design of Nuclear Reactors

Unesco-lOC Short Grant, On the Teaching of Marine Engineering and Technology at Universities, (l976), ($3,000)

National Science Foundation Grant NSF-GK40l27-76, and NSF GK32ll7X-76, Department of Mechanics and Materials Science, The Johns Hopkins University, Baltimore, MD, (l976- l977), (PI: C. Truesdell), Elastodynamics and Rational Thermo-Mechanics Phenomena (not a principal or co-principal investigator)

National Science Foundation NSF-GK40l27X-74 and NSF-GK32ll7X-74, Department of Mechanics and Materials Science, The Johns Hopkins Univ., Baltimore, MD (PI: J.L. Ericksen), (l976- l977), Dynamic Stability of Structured Media (not a principal or co-principal investigator)

Shiraz University Research Council Grant PURC-7-70, (l970-l972), ($4,400), Hovercraft Development Project

National Science Foundation Grants NSF-2-972-898, Dislocation and Elastodynamics; 9/l6/68 - 7/30/70 and U.S. Temis Pulsatile Flow Grant 2-972-9l2; 9/l6/69 - 8/l5/70 and NSF-97-893, Elastic Stability; (1966-1967), Department of Mechanical and Aerospace Engineering, University of Delaware; Newark, DE (PI: J.L. Nowinski), (not a principal or co-principal investigator)

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***5.2- Academic Educational & Research Laboratories Established***

*(16 of them, Listing the most recent ones first)*

Currently established with Professor Vincent Caccese University of Maine’s and Eastern Maine Medical Center (EMMC, Dr. Andrew Hodge, Chief of Orthopedic Surgery), Maine’s first “**Human Performance and Gait Laboratory”** as a joint laboratory with funding from Eastern Maine Medical Center (EMMC) and Maine Science and Technology Foundation, MTAF Program (2012)

Established with Professor Vincent Caccese University of Maine’s and State of Maine’s first “**Advanced Biomechanics Laboratory for Injury Reduction and Rehabilitation”** with funding from Maine Science and Technology Foundation, MTAF Program, (2011)

Established with Professor Ashish Deshpande, University of Maine’s and State of Maine’s first **“Rehabilitation, Neuromuscular and Biorobotics (ReNeu) Laboratory”,** with funding from NSF and Office of VP for Research, (2010)

Helped to Establish, for Professor Senthil Vel, University of Maine’s and State of Maine’s first **“Controls and Mechatronics Laboratory)”** with funding from **NSF and NASA,** (2009)

Helped to Establish, for Professor Ali Sarvestani, University of Maine’s and State of Maine’s first **“Cell Mechanics and Tissue Manufacturing Laboratory**: with Funding from the Office of VP for Research, UMaine in (2009)

Established with Professors Ali Abedi (ECE dept.), Vince Caccese, and Mauricio deCunha (ECE), University of Maine’s and State of Maine’s first **“Lunar Habitat/Wireless Sensing Laboratory”** in January 2011, with funding from **NASA EPSCoR Gran**t: “Wireless Dynamic Monitoring of Deployable Space Structures awarded August 2008

Established University of Maine’s and State of Maine’s first **“Smart Materials and Artificial Muscles Laboratory”** with seed funding from University of Maine office of Vice-President for Research and Maine Economic Incentive Funds (MEIF), (2009)

Established the University of Maine’s and State of Maine’s first **“Biomedical Engineering Laboratory”** with seed funding from University of Maine office of Vice-President for Research and Maine Economic Incentive Funds (MEIF), (2009)

Established University of Maine’s first **“Intelligent Robotics” as well as “Surgical Robotic Systems” laboratories** with seed funding from University of Maine office of Vice-President for Research and Maine Economic Incentive Funds (MEIF), (2009)

With funding from the Neurological Surgery Department and the School of Medicine of the University of New Mexico in 1998, established and served as co-director with Professor Ed Benzel, Chair of Neurological Surgery Department, the UNM’s "**Spine Biomechatronics Laboratory”** with the goal of electronic regeneration of severed spinal cord.

Established with funding from Sandia National Laboratories and the University of New Mexico Office of the Associate Provost for Research the world’s first “**Artificial Muscles Research Institute (AMRI)”** during the year 1996 in the School of Engineering and the School of Medicine, University of New Mexico. World's first membrane-encapsulated artificial muscles made from ionic polymeric gels were first fabricated in the “**Artificial Muscle Research Laboratory”, (AMRL),** which was established prior to the establishment of the **Artificial Muscles Research Institute (AMRI)** laboratory in 1993.

With funding from Sandia National Laboratories and US Army Research Office (ARO) Established the “**Smart Materials, Structures and Systems Laboratory”** during the year 1992 in the College of Engineering, University of New Mexico.

Established (with professors Fred Ju and Joe Mullins of the ME Dept.) with funding from IBM CIM Alliance, the first “**Computer Integrated Manufacturing (CIM) Laboratory”** at UNM with RT work stations, 386 computers, CNC machines , ASA400 networking, IBM CAD and auxiliary units during the 1990-1991 academic year.

Established with UNM bond money the first (in the state of New Mexico) fully operational **"Robotics Instructional Laboratory"** in the ME Department at the University of New Mexico with l4 independent robot work stations each with a 5-axis robot, a computer, a l0-axis controller, a conveyer belt and a coordinated table during the period l984-l985. This instructional laboratory was also equipped with an IBM-7535 Advanced Manufacturing System Robotic Cell, a Maker-100 United States Robotic Cell, a Lobot-1, 6-axis robot with voice and vision and a mobile robot in the period 1985-86.

Established (with Professor Doug Smith of Chemical and Nuclear Engineering Dept.) as a Co-Director, the first UNM “**Powder and Granular Materials Laboratory”** jointly run by the Mechanical Engineering and the Chemical and Nuclear Engineering Departments during the period l984 - l985.

Established (as team member with Professors R. Schilling and R. Mukundan of ECE Dept.) with internal and external funds (Westinghouse, GE, IBM) a fully operational **"Robotics Research and Demonstration Laboratory"** with two IBM 7565 (White Cloud) Rectangular Robots, one GE P50 large 6-axis industrial robot, two liberator cylindrical Robots (Robotics, Inc.), one Optomation II robotic vision system (GE), and one series I microcomputer (IBM) and AML (Advanced Manufacturing Language) Software in the period 1982-1984.

Established with external and internal funds two fully operational **"Instructional Robotics and Control Laboratories"** at Clarkson University with l0 Educational 5-axis robots and the associated robotic work cells, and 2 mobile personal robots during the period l98l-l984.

***6. Activities In Conferences, Congresses and Professional Institutions***

*(Listing the most recent ones first)*

**General Chair and keynote speaker:** 10th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio, BAMN2019, September 1-4, Boston, Mass, USA (2019)

**General Chair and keynote speaker:** 9th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio, <http://bamn2017.org//>, BAMN2017, September 25-27 Wollongong, Australia (2017)

**General Chair and plenary speaker:** 8th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio, [http://bamn2015.org//](http://www.bamn2013.org/main//), BAMN2015, August 24-26, Vancouver, Canada, (2015)

**General Chair:** 7th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio 2013), <http://www.bamn2013.org/main//>, BAMN2013, August 26-30, Jeju Island, South Korea, (2013)

**Plenary Speaker:** 7th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio 2013), <http://www.bamn2013.org/main//>, BAMN2013, August 26-30, Jeju Island, South Korea, (2013)

**Invited Speaker:** 4th International Conference on Smart Materials, Structures and Systems (CIMTEC 2012), June 10-14, 2012, <http://www.cimtec-congress.org/2012/> , Montecatini Terme, Tuscany, Italy, (2012)

**Session Chair:** 4th International Conference on Smart Materials, Structures and Systems (CIMTEC 2012), June 10-14, 2012, <http://www.cimtec-congress.org/2012/> , Montecatini Terme, Tuscany, Italy, (2012)

**Keynote Speaker:** 6th International Congress on Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio BAMN 2011), <http://biomimetics2011.u-cergy.fr/>, Cergy-Pontoise, Paris, France. October 25-27, (2011)

**General Chair:** 6th International Congress on Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio BAMN 2011), <http://biomimetics2011.u-cergy.fr/>, Cergy-Pontoise, Paris, France. October 25-27, (2011)

**Session Chair:** 6th World Congress on Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio 2011), <http://biomimetics2011.u-cergy.fr/>, Cergy-Pontoise, Paris, France. October 25-27, (2011)

**Plenary Speaker:** 4th Joint European Society of Artificial Organs (ESAO) and International federation for Artificial Organs (IPAO) Congress 2011, <http://www.esao-ifao-2011.3bs.uminho.pt/> October 9-12, Porto Congress Center, Portugal, (2011)

**General Chair:** 5th World Congress on Biomimetics, Artificial Muscles and Nano-Bio [http:// 4th\_Conference\_on\_Artificial\_Muscles\_5th.html?id=hoJ9mwEACAAJ](http://books.google.com/books/about/4th_Conference_on_Artificial_Muscles_5th.html?id=hoJ9mwEACAAJ) (Nano-Bio 2009), BAMN 2009, November 25-27, Osaka, Japan, (2009)

**Keynote Speaker:** 5th World Congress on Biomimetics, Artificial Muscles and Nano-Bio, [http:// 4th\_Conference\_on\_Artificial\_Muscles\_5th.html?id=hoJ9mwEACAAJ](http://books.google.com/books/about/4th_Conference_on_Artificial_Muscles_5th.html?id=hoJ9mwEACAAJ), (Nano-Bio BAMN 2009), November 25-27, Osaka, Japan, (2009)

**General Chair:** 5th World Congress on Biomimetics, Artificial Muscles and Nano-Bio, [http:// 4th\_Conference\_on\_Artificial\_Muscles\_5th.html?id=hoJ9mwEACAAJ](http://books.google.com/books/about/4th_Conference_on_Artificial_Muscles_5th.html?id=hoJ9mwEACAAJ), (Nano-Bio BAMN 2009), November 25-27, Osaka, Japan, (2009)

**Session Chair**: International Materials Research Congress XX, 2011, Cancun Mexico, August 14-19, 2011, <https://www.mrs.org/imrc2011/>, Symposium 16: Smart Materials, Devices and Related Technologies, (2011)

**Member: Program Committee**, 16th US National Congress of Theoretical and Applied Mechanics (<http://www.conferencetoolbox.org/USNCTAM2010/Organizers.cfm>)

State College, PA, June 27-July 2, 2010

**Symposium Chair**, **Electromechanics of Ionic Polymer Metal Composites (IPMCs)**, 16th US National Congress of Theoretical and Applied Mechanics (<http://www.conferencetoolbox.org/USNCTAM2010/Organizers.cfm>)

State College, PA, June 27-July 2, 2010

**Invited Speaker:** Mohsen Shahinpoor, “Artificial Muscles”, (invited), American Society for Artificial Internal Organs (ASAIO), 56th. Annual Conference, <http://www.asaio.com/>, May 27-29, Baltimore, Md., CD ROM Proceedings, 2010

**Session Chair:** 4th International Conference on Artificial Muscles, and the 5th. International Congress on Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio 2009), <http://unit.aist.go.jp/rice/events/cam4/english/index_e.html>, Seri Life Science Center, Osaka, Japan, November 25-28, (2009)

**General Chair** with **Professor Toribio Fernández Otero:** 4th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio (Biomimetics and Nano-Bio BAMN 2007), [www.world-congress.net](http://www.world-congress.net), [www.upct.es/~nano-bio/pagina\_nueva\_1.htm](http://www.upct.es/~nano-bio/pagina_nueva_1.htm), Universidad Politécnica de Cartagena, Cartagena, Spain , Europe, Nov 6-7-8, (2007)

**Keynote Speaker:** 4th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio (Biomimetics and Nano-Bio 2007, [www.world-congress.net](http://www.world-congress.net), [www.upct.es/~nano-bio/pagina\_nueva\_1.htm](http://www.upct.es/~nano-bio/pagina_nueva_1.htm), Universidad Politécnica de Cartagena, Cartagena, Spain , Europe, Nov 6-7-8, (2007)

**Session Chair:** 4th. World Congress on Biomimetics, Artificial Muscles and Nano-Bio (Biomimetics and Nano-Bio 2007, [www.world-congress.net](http://www.world-congress.net), [www.upct.es/~nano-bio/pagina\_nueva\_1.htm](http://www.upct.es/~nano-bio/pagina_nueva_1.htm), Universidad Politécnica de Cartagena, Cartagena, Spain , Europe, Nov 6-7-8, (2007)

**Chair:** Membership and Marketing Committee, New Mexico Biotechnology and Biomedical Association (NMBBA), <http://nmbio.org/>, Albuquerque and Santa Fe, NM (2004-2006)

**Member of the Board of Directors:** New Mexico Biotechnology and Biomedical Association (NMBBA), <http://nmbio.org/>, Albuquerque and Santa Fe, NM (2004-2006)

**General Co-Chair with**  **Noble Laureate** **Professor Pierre Gilles** **De Gennes,** <http://newsletter.epfl.ch/alliance/index.php?module=epflfiles&func=getFile&fid=17&inline=1>, the 3rd. World Congress on Biomimetics, Artificial Muscles and Nano-Bio, with **Dr. Piergeorgio Tozzi, MD, as Congress Chair** (Biomimetics and Nano-Bio BAMN 2006), May 25-27, Lausanne, Switzerland, (2006)

**Keynote Speaker:** 3rd. World Congress on Biomimetics, Artificial Muscles & Nano-Bio, <http://newsletter.epfl.ch/alliance/index.php?module=epflfiles&func=getFile&fid=17&inline=1>, (Biomimetics and Nano-Bio 2006, [www.world-congress.net](http://www.world-congress.net)), May 25-27 , Lausanne, Switzerland, (2006)

**General Chair** with Noble Laureate **Professor Pierre Gilles De Gennes:** 2nd. World Congress on Biomimetics and Artificial Muscles (Biomimetics and Nano-Bio 2004, [www.world-congress.net](http://www.world-congress.net)), December 5-8, (2004), Albuquerque, NM, USA

**Session Chair:** 2nd. World Congress on Biomimetics and Artificial Muscles (Biomimetics and Nano-Bio 2004, [www.world-congress.net](http://www.world-congress.net)), December 5-8, (2004), Albuquerque, NM, USA

**General Co-Chair** with Noble Laureate **Professor Pierre Gilles De Gennes**: First World Congress on Biomimetics and Artificial Muscles (Biomimetice 2002, [www.world-congress.net](http://www.world-congress.net)), December 9-11, (2002), Albuquerque Convention center, Albuquerque, New Mexico, USA

**Member of the Electroactive Polymer Actuators and Devices Program Committee**, SPIE 1997-2007 North American Congress on Smart Structures and Materials, San Diego, California, March (1997-Present)

**Member of the International Program Committee**, 1997 IEEE Robotics & Automation Conference, (1997)

**Member**: New York Academy of Sciences (1997-Present)

**Member of the Smart Materials Program Committee**, SPIE 1997 North American Congress on Smart Structures and Materials, San Diego, California, February (1997-2002)

**Session Chair**, Smart Materials, SPIE (1997) North American Congress on Smart Structures and Materials, San Diego, California, February (1997)

**Member of the International Advisory Board: 4th. International Conference on Intelligent Materials**, ICIM’97 June (1997), Tokyo, Japan

**Program Chair**: National Science Foundation’s 1996 Design and Manufacturing Grantees Conference, January (1996)

**Member**: US National Committee on Vibrations and Noise, (1994-1996)

**Member**: Smart Materials Program Committee, SPIE 1996 North American Congress on Smart Structures and Materials, San Diego, California, February (1996)

**Session Chair**, Smart Materials, SPIE 1996 North American Congress on Smart Structures and Materials, San Diego, California, February (1996)

**Member**: International Advisory Board of the 3rd. International Conference on Intelligent Materials, ICIM’96 and 3rd. European Conference on Smart Structures and Materials, June 3-5, (1996), Lyon, France

**Chair**: Technical Program Committee, Fourth International Congress on Environmentally Conscious Design and Manufacturing, July 23-25, Cleveland, Ohio, (1996)

**Plenary Speaker**: Fourth International Congress on Environmentally Conscious Design and Manufacturing, July 23-25, Cleveland, Ohio, (1996)

**Member of the National Science Foundation Panel:** Design & Manufacturing (1995)

**Co-Chair: T**he Technical Program Committee of the Second Sandia-UNM-ASME Agile Manufacturing Conference on Virtual Manufacturing, March 1995, Albuquerque, New Mexico

**Member:** The Smart Materials Program Committee, SPIE 1995 North American Congress on Smart Structures and Materials, San Diego, California, February-March (1995)

**Member**: American Institute of Aeronautics and Astronautics, AIAA (1994)

**Symposium Chair**: Smart Materials, SPIE 1995 North American Congress on Smart Structures and Materials, San Diego, California, February-March (1995)

**Co-Chair**: Second International Congress on Environmentally Conscious Manufacturing, August 29-September 3, Arlington, Virginia, (1993)

**Co-Chair:** The Technical Program Committee of the First Sandia-UNM-ASME Agile Manufacturing Conference on Rapid Prototyping, October 1993, Albuquerque, New Mexico.

**Member**: The Smart Materials Program Committee, SPIE 1993 North American Congress on Smart Structures and Materials, Albuquerque, New Mexico, February (1993)

**Symposium Chair**: Smart Materials, SPIE 1993 North American Congress on Smart Structures and Materials, Albuquerque, New Mexico, February (1993)

**Member**: US National Stirring Committee, 14th. Biennial ASME Vibrations Conference, Albuquerque, NM, September (1993)

**Cluster Chair**: Vibrations and Dynamics of Flexible Robot Manipulators, the 14th. Biennial ASME Vibrations Conference, Albuquerque, NM, September (1993)

**Cluster Chair**: Smart Materials and Structures, the 14th. Biennial ASME Vibrations Conference, Albuquerque, NM, September (1993)

**Co-Chair**: Local Program Committee and Member of the International Program Committee of International Symposium of Robotics and Manufacturing : Recent Trends in Research, Education and Applications, October, (1992), Santa Fe, New Mexico

**Member:** The Smart Materials Program Committee of the First International Congress on Smart Materials and Structures, Alexandria, Virginia, November, (1992)

**Co-Chair**: First International Congress on Environmentally Conscious Manufacturing, September 17-20, Santa Fe New Mexico, (1991)

**Co-Chair**: 27th. Annual Conference of Society of Engineering Science, October 21-26, (1990), Santa Fe, New Mexico

**Chair & Session Organizer**: Reactive Particle Systems, 20th. FPS Powder Science & Technology International Symposium, Boston, MA, August (1989)

**Co-Chair**: 27th. ASME National Symposium on "Hazardous Waste-Impact Mitigation through Innovative Technology, Albuquerque, New Mexico, May (1989)

**Member**: International Program Committee, Second International Symposium on "Robotics and Manufacturing," Albuquerque, NM, November (1988)

**Chair and Session Organizer**: Reactive Particles, 19th. FPS Powder Science and Technology Symposium, Santa Clara, Cal., July (1988)

**Program Chair**: 26th ASME Symposium on "New Trends In Automated Manufacturing," Albuquerque, NM, May (1987)

**Session Organizer** **and Chair**: IEEE-ISE International Symposium, Albuquerque, NM, May (1987)

**Session Chair**: IASTED International Symposium on Robotics and Automation, Santa Barbara, CA, May (1987)

**Co-Chair:** The National Program Committee and member of the International Program Committee of International Symposium of Robotics: Modeling, Control, and Education, Nov. (1986), Albuquerque, N.M.

**Program Chair**: ASME National Symposium on "Intelligent Machines and Robotics", Albuquerque, NM, May (1986).

**Session Chair**: Robot Engineering Education, ASME National Symposium on "Intelligent Machines and Robotics", Albuquerque, NM, May (1986).

**Session Co-Chair**: Pore Characterization of Powders and Granular Materials, Fine Powder Society's Annual Conference, San Francisco, Calif., July (1986).

**Fellow**: National Academy of Inventors, (2015), USA

**Member**: International Pyrotechnics Society, (1986), USA

**Fellow**: American Society of Mechanical Engineers, (1986), ASME

**Fellow**: Institute of Physics, United Kingdom, (2001)

**Fellow:** Royal Society of Chemistry, (2015)

**Member**: Tau Beta Pi, Engineering Honor Society, (1986), (USA)

**Member**: Sigma Xi, the Scientific Research Society, (1986), (USA)

**Director**: ASME, New Mexico Section, (1985-1992)

**Site Proctor**: IEEE National Video Conference, "Robot Dynamics and Control", Albuquerque, NM, February (1985).

**Senior Member**: Society of Manufacturing Engineers, (1985), USA

**Member**: Industrial Mathematics Society, (1985), USA

**Member**: New Mexico Academy of Sciences, Santa Fe, NM, (1984)

**Member**: American Society for the Advancement of Science, (1984), USA

**Member**: U.S. Institute of Colloid & Surface Sciences, (1982), USA

**Member**: The American Academy of Mechanics, (1982), USA

**Member**: U.S. National Society of Professional Engineers (NSPE) New Mexico Section and New York Section, (1982), USA

**Member**: International Fine Particle Society, (1981), USA

**Member**: The Society of Engineering Science, (1981), USA

**Member**: Society for Natural Philosophy, (1974), USA

***7. Journal Editorial Experience:***

**Member of Editorial Board: Int. Journal of Bionics and Biomimetics** and a review Editor of specialty section of **Frontiers in Bioengineering and Biotechnology and Frontiers in Robotics and AI**, since 2014

**Member of the Editorial Board: Int. Journal of Advanced Robotic Systems,** InTech Publishers, Europe, Rijeka, Croatia, since 2012

**Topic Editor-in-Chief, Bioinspired Robotics, Int. Journal of Advanced Robotic Systems,** InTech Publishers, Europe, Rijeka, Croatia, since 2012

**Member of the Editorial Board: Journal of Soft Robotics,** Mary Ann Liebert, Inc., publishers**,** 140 Huguenot Street – 3rd Floor**,** New Rochelle, NY 10801-5215, since 2011

**Member of the Editorial Board: Actuators Journal,** Published by the Multi-Disciplinary Publishing Institute, Basel, Switzerland, since (2012)

**Associate Editor: Smart Nanosystems in Engineering and Medicine International Journal** (ISSN: 2167‐5813). GINTEM Publishing, a division of Global Institute of Nanotechnology, Fayetteville, AR, USA, since 2010

**Guest Editor: Journal of Smart Materials and Structures**, Special Issue on Artificial Muscles, Volume 20, Number 12, December 2011

**Member of the Editorial Board: Advances in Materials Research, *An International*** Journal, Techno Press (Inaugural issue to come out in 2012)

**Series Editor with Professor Dr. Hans-Jörg Schneider** **, “Smart Materials Book Series”,** Royal Society of Chemistry Publishers, Dr. Leanne Marle MRSC, Commissioning Editor, RSC Publishing, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2011)

**Associate Editor**: **Recent Patents In Biomedical Engineering International Journal**, Bentham Science Publishers Ltd., Oak Park, IL 60301-0446, USA, 2009-continuing

**Associate Editor**: Editorial Advisory Board, **International Journal of Smart Materials and Structures**, IOP press, England, since 1992

**Series Editor**: Springer-Verlag Series on **High Pressure Shock Compression of Solids**", Springer Publishing Company, Since 1992

**Founding Editor and Editor-in-Chief**: **International Journal of Environmentally Conscious Design & Manufacturing**, ECM Press, Albuquerque, New Mexico, 1990, **NOW CHANGED TO** International Journal of Environmentally Intelligent Design and Manufacturing.

**Member**: Editorial Advisory Board, **Int. J. Bulk Solids Handling**, l98l-1994

**Member**: Editorial Advisory Board, **Int. J. Storing, Handling and Transportation of Bulk**, 1994-present

**Member**: Editorial Advisory Board, ”**International Journal of Modeling & Scientific Computing**”, 1992-2001

**Member**: Editorial Advisory Board, **Journal of Intelligent & Fuzzy Systems**, John Wiley, 1992-1998

**Member**: Editorial Advisory Board, **Scientia Iranica**, 1993

**Editor-in-Chief**: **Iranian. J. Sci. Tech**., vol.4-vol.7, Pergamon Press, Oxford, England; period: 9/l/74 - 9/l/80

**Member**: Editorial Advisory Board, **International J. Sci. Tech**., 1985

**Member**: Editorial Advisory Board, Int. **J. Powder Handling & Processing**, 1988

***8. Teaching Experience and Interests:***

***Recently Taught Courses:***

Mechanical Vibrations (MEE471), Robot Dynamics and Control (MEE 444), Capstone Design IV (MEE 488), Directed Studies in Biomedical Engineering (MEE697-1), Advanced Vibrations (MEE 573), First Capstone Design course MEE487 as well as a Directed Study Graduate Course (MEE697-2) on Advanced Medical Implants, Smart Materials (MEE555) as well as Design of Smart Systems (MEE 697-03), Design I-Kinematic Design of Mechanisms and Machines (MEE380). He also team teaches GEE298 Nanoscience and Nanoengineering course with Professor Rosemary Smith of Electrical and Computer Engineering department in connection with Nanomechanics and Molecular Motors. He also team teaches Introduction to Biomedical Engineering (INT 121) with Professor Rosemary Smith to Junior and Senior students and INT 421 (Selected Topics in Biomedical Engineering) to Senior Students. He has also taught Mechanics of Composite Materials (MEE450) as well a Systems Dynamics and Control (MEE370) to Junior and Senior students as well as optional Design II (MEE498) to senior students.

At the University of New Mexico (UNM), he taught Robot Engineering I & II, ME 482/582 (4 credits) or Smart Materials & Structures, ME 562 (3 credits) to graduate students, Machine Component Design, ME358 (3 credits) to seniors, or the capstone machine design course ME359 (4 credits) to graduating seniors and Computer-Aided Design and Manufacturing, CAD/CAM, ME484/584 (3 credits) to seniors and graduate students, as well as number of directed study courses such as Biotechnology, Biomechatronics, Design Intelligence or Smart Materials & Structures (ME 459, 559, 462), to selected undergrad or graduate students. He normally taught either Machine Component Design, ME358 (3 credits) to seniors, or the capstone design course, ME359 (4 credits) to graduating seniors and Computer-Aided Design and Manufacturing, CAD/CAM, ME484/584 (3 credits) to seniors and Graduate students, as well as number of directed study courses such as Biotechnology, Biomechatronics, Design Intelligence or Smart Materials & Structures (ME 459, 559, 462, respectively, to selected undergrad or graduate students.

# ***9. Research Experience and Interests:***

Smart/Intelligent Materials, Structures and Systems, Smart Aerospace and Marine Structures, Biomimetics and Artificial Muscles, Mechatronics, Electroactive Polymers and Ionic Polymer Metal Composites (IPMCs), Shape Memory Alloys (SMAs) and Shape Memory Polymers (SMPs), Advanced Nanocomposites, Environmentally Intelligent Design and Manufacturing, Biologically-Inspired Engineering Systems (BIES), Biologically-Inspired Robotic Devices and Systems (BIRDS), Nano-Bio Engineering, Intelligent Robotic Systems, Robotic Surgery, Health Engineering, Biomedical Engineering, Heart Assist Systems, Left Ventricular Assist Systems (LVAS), Heart Failure Prevention, Bionic Vision and Ophthalmological Engineering as well as Neuro and Endovascular Surgical Tools and Medical Implants.

***10. Masters Students and Theses (75):***

*(Listing the most recent ones first)*

75 **Arezoo Ebrahimi**, “Control of Robotic Microsurgery”, Chair of Committee of Study with Professors Vince Caccese and Xudong Zheng, Department of Mechanical Engineering, the University of Maine, Orono, ME 04469, **M. Sci., May, 2016**

74 **Yousif Mohamed**, “Applications of IPMC Artificial Muscles To Correct Right Atrial Fibrillation”, Chair of Committee of Study with Professors Vince Caccese and Xudong Zheng, Department of Mechanical Engineering, The University of Maine, Orono, ME 04469, **M. Sci., May, 2015**

73 **Seyed Navid Mahpeykar**, “Design, Development and Fabrication of Advanced High-Precision Robotic Systems for Microsurgery”, Chair of Committee of Study with Professors Vince Caccese and Xudong Zheng, Department of Mechanical Engineering, and Professor Rick Eason, Department of Electrical and Computer Engineering, the University of Maine, Orono, ME 04469, **M. Sc., May, 2014.**

72 **Mohammad Khalili**, “Design and Development of A Magneto-Rheological Fluid (MRF)-based Automatic Transmission for Cars”, Chair of Committee of Study with Professors Vince Caccese and Xudong Zheng, Department of Mechanical Engineering, and Professor Rick Eason, Department of Electrical and Computer Engineering, The University of Maine, Orono, ME 04469, **M. Sci., December, 2013.**

71 **Siavash Gheshmi**, “Design and Development of Advanced Surgical Robotic Systems”, Chair of Committee of Study with Professors Vince Caccese and Alireza Sarvestani, Department of Mechanical Engineering, The University of Maine, Orono, ME 04469, **M. Sc., December 2012.**

70 **Michael Alan Edgecomb II**, “Finite Element and Experimental Analysis of Head Protection Gear to Mitigate Head Injuries Due to Falls”, member of Thesis Committee with Professors Vince Caccese (Chair), and Zhihe Jin, Department of Mechanical Engineering, The University of Maine, Orono, ME 04469, **M. Sci., December, 2012**

69 **Thomas Rolfson**, M.E. Engineering Physics, Non-Thesis, 36 credit hours of Graduate Courses, Chair of Committee with Professors James McClymer and C.T. Hess, Department of Mechanical Engineering, and Department of Physics, The University of Maine, Orono, ME 04469, **M. Sci., December 2011**

68 **Scott Prince**, “Application of Particle Swarm Optimization to Robotic Inverse Kinematics”, Chair of Committee with Professors Senthil Vel, Department of Mechanical Engineering, and Professor and Rick Eason, Department of Electrical and Computer Engineering, The University of Maine, Orono, ME 04469, **M. Sci., May, 2010.**

67 **Ronnie Oliver**, “Design & Development of A Stair Climbing Companion Robotic System”, Chair of Committee with Professors Senthil Vel, Michael Boyle, Department of Mechanical Engineering, and Professor and Rick Eason, Department of Electrical and Computer Engineering, The University of Maine, Orono, ME 04469, **M. Sci., pending.**

66 **Mehmet Ali Sen**, “Proper Orthogonal Development Methodology to Understand Underlying Physics of Rough-Wall Turbulent Boundary Layer”, Co-Chair of Committee with Professor Kiran Bhaganagar, Department of Mechanical Engineering, The University of Maine, Orono, ME, 04469, **M. Sci., December, 2007.**

65 **Ujwal Deole**, “Artificial Muscle Microgrippers”, Co-Chair of Committee with Professor Ron Lumia, Department of Mechanical Engineering, The University of New Mexico, Albuquerque, New Mexico, **M. Sci., December, 2005.**

64 **Bryan Romero**, “Design of a Mini-Testing Machine for Characterization of Artificial Muscles”, Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., May 2001**

63 **German Chamorro**, "Swimming Robotic Structures Equipped with IPMC Artificial Muscles", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., May 2000**

62. **Tariq Rashid**, “Optimization of Artificial Muscles Manufacturing Process using Orthogonal Arrays and the Taguchi Method” Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1998)**

61. **Casildo Romero**, "Mechanics of Crenulation in Nonlinear Materials", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (August 1998)**

60. **Mark Anderson**, "Simultaneous PVDF/VISAR Measurement Technique For Isentropic Loading With Graded Density Impactors", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1998)**

59. **David Hickerson**, “Modeling and Control of A Hybrid Manipulator”, Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1998)**

58. **Clint Hall**, "Shock Hugoniot and Release States in Concrete Mixtures with Different Aggregate Sizes from 3 to 23 GPa", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1998)**

57. **Jeffrey Lantz**, "Design of An Environmentally Conscious Fluorescent and Mercury Lamps", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1996)**

56. **Jim Arellanes**, "Smart Structures with Embedded SMA's", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 96)**

55. **Guoping Wang**, "Large Deflection Analysis of An Elastic Beam Structure Embedding A Shape Memory Alloy Wire Actuator", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1996)**

54. **Eric Steinmaus**, “Fuzzy Control of A Drill Press", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1995)**

53. **Shijion Zhou**, “Design of A Sip-and-Puff Switch For Environmental Control for Quadriplegics”, Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1995)**

52. **Anthony Tafoya**, "Dynamic Flow System for High Flow Insufflation in Laproscopic Surgery", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1994)**

51. **Martin Bachicha**, “Magnetically-Actuated, Direct-Drive Snake-Like Flexible Robotic Structures Design and Fabrication", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1994)**

50. **Alan Nehring**, "Engineering Benchmarking", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (Co-chairman of M.Sc. Committee), **M.Sc., (May 1994)**

49. **Daniel Archuleta**, "Design of a Digital Controller for Electromagnetic Ball Levitator Systems", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (co-chair of M.Sc. committee), **M.Sc., (May 1994)**

48. **Supriti Mukherjee**, “Three-Dimensional Electroplating and Free-Form Fabrication", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (co-chair of M.Sc. committee) **M.Sc., (May 1994)**

47. **Ali Daemi**, "CAD/CAM Data Interfacing For Robotically-Assisted 3-D Rapid Prototyping", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1994)**

46. **Thomas Wilson**, "Dynamic Modeling and Computer Simulation of A Two-Link Flexible Robot Manipulator", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (co-chair of M.Sc. committee), **M.Sc., (May 1994)**

45. **Joseph Jablonski**, "Strategic Planning and Implementing Total Quality Management In A DOD Environment", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (co-chair of M.Sc. Committee), **M.Sc., (May 1993)**

44. **Timothy Chavez**, “Robotically-Assisted Environmental Restoration and Waste Management", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1993)**

43. **Mehran Mojarrad**, "Assembly Work Space Analysis For An IBM 7565 Robot Manipulator For Applications To Chemical Treatments of Silicon Wafers", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1992)**

42. **Sainan Feng**, “Kinematic Modeling of Elastic Robots", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1991)**

41. **Bill M. Miera**, (AFWL),"Numerical Simulation of Rail Launcher Performance" Department of Mechanical Engineering University of New Mexico, Albuquerque, New Mexico, **M.Sc., (August 1990)**

40. **Graham Bartlett**, "A CIM Planning Methodology For Analysis of Factory Automation”, University of New Mexico, Mechanical Engineering Department, Albuquerque, New Mexico (co-chair of M.Sc. Committee), **M. Sc., (May 1990)**

39. **John McSheehy**, "Static, Kinematic, and Dynamic Analyses of A Four-Bar Linkage Chain With Application For Design", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1989)**

38. **Lawrence T. James**, "Combined Natural Convection and Radiant Heat Transfer, " Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (co-chair of M.Sc. committee), **M.Sc., (December 1989)**

37. **Adam Slavin**, "Modeling of Robotic Elastic Deformation", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1989)**

36. **Ted Sahd**, "Manufacturing Light Aircrafts in New Mexico: Possible Alternatives", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (co-chair of M.Sc. Committee), **M.Sc., (December 1989)**

35. **Donald J. Christison**, "Development of A Bar Code Scanner Vision System For Robotic Manipulation of Randomly Oriented Objects", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1989)**

34. **Carmine Izzi**, "CAD-Based Two-Dimensional Feature Recognition For CNC Machining", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1989)**

33. **John Halbleib**, "CAD-Based Automatic Tool Selection and CNC Machining Based on Features", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1989)**

32. **Donald R. Striker**, "Automated Storage Retrieval System Operation and Performance Optimization", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1989)**

31. **Jeffrey D. Hanan**, "A Rule-Based Advisor For Configuring and Sizing CIM Systems Based on Performance Criteria", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1989)**

30. **Bijan Pejman**, "Heat Transfer in Robotic Gloves", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (Co-chairman of M.Sc. committee), **M.Sc., (May 1989)**

29. **Glen A. Smith**, (AFWL), " Investigation on the Effects of Mechanical Coupling of the Programmed Motion of A Robot Arm and Independent Periodic Base Disturbances," Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1988)**

28. **John David Novat**, "PC Control of A DC Motor", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1988)**

27. **Hadie Fotouhie**, "Code Development for Convective Burning of Pyrotechnic Materials", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (Co-chairman of M.Sc. committee), **M.Sc., (May 1988)**

26. **Chung C. Huang**, "Automated Mesh Generation," Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (Co-chairman of M.Sc. committee), **M.Sc., (May 1988)**

25. **Massoud Ahghar**, "Development of a Coordinate Measuring System for CNC Machining of Complex Surfaces", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1988)**

24. **Sheryl H. Norenberg**, (SNL) "Burn Rate Studies of Titanium Subhydride Potassium Perchlorate Pyrotechnic Materials", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1988)**

23. **Hamid Ashouri**, "Design, Construction, and Modeling of An Articulate, Five-Fingered Computer-Controlled Robot Hand", Mechanical Engineering Department, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (May 1987)**

22. **Boojoong Yong**, "Modeling of Robotic Workspaces for Multiple-Robot Systems", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (June 1987)**

21. **Yian Chang**, "Temperature Distribution In a Rod Moving In a Nonhomogeneous Temperature Field", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, (Co-chairman of M.Sc. committee), **M.Sc., (May 1987)**

20. **Robert Gobel**, (AFWL) "Robotic Locational Identification by Means of a Scanning Laser Beam", University of New Mexico, Mechanical Engineering Department, Albuquerque, New Mexico, **M.Sc., (December 1986)**

19. **Timothy Rude**, (AFWL) "Operation of a Bridgeport Boss 5 CNC Mill From a Zenith 158 PC", Department of Mechanical Engineering University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1986)**

18. **Eming Chen**, "Design and Analysis of a Tricycle Robotic Carriage System with a Mounted Manipulator," Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (December 1986)**

17. **A. Akbarzadeh**, "Design and Construction of a 6-Axis Robot Manipulator; LOBOT-l with voice and vision", Mechanical Engineering Department, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (September 1986)**

16. **J. Devaprasad**, "Development of Semi-Conductor Thin Film Temperature Using a Laser", Mechanical Engineering Department, University of New Mexico, Albuquerque, New Mexico, **M.Sc., (August 1986)**

15. **Thomas Grant McDonald**, "Measuring Friction Coefficient and Contact Resistance Inside A Scanning Auger Microscope", University of New Mexico, Mechanical Engineering Department, Albuquerque, New Mexico, (co-chair of M.Sc. Committee), **M.Sc., (May 1986)**

14. **Robert A. Hart**, "Dynamic Modeling of A Legged Locomotion Vehicle", University of New Mexico, Mechanical Engineering Department, Albuquerque, New Mexico (co-chair of M.Sc. Committee), **M.Sc., (May 1986)**

13. **Robert T. Cook**, "Design and Modeling of a Robotic Arm with an Ultrasonic Distance Sensor", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (May l984)**

12. **David Campbell**, "Inverse Kinematic Solutions for Slightly Flexible Robotic Manipulators", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (December l984)**

11. **Robert Olsen**, "Frequency Distribution of Coordination Number and Contact Force in a Randomly Packed Bed of Spheres by a Titration Technique", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (December l984)**

10. **Allan Tabesh**, "Design and Modeling of a Special Gripper for GE-P50-Robot", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (December l984)**

9. **Ioannis Minis**, "Computerized and Automated Techniques in Determining the Frequency Distribution of Voids in Granular Materials", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (August l983)**

8. **Mike Caporali**, "Design and Bond Graph Modeling of a Multi-Fingered Robot Hand", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (August l982)**

7. **Gary Sweed**, "Computerized and Automated Determination of Frequency Distribution of Voids in Granular Materials", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (May 1982)**

6. **Ahmad Shahrpass**, "Frequency Distribution of Voids in 2-D Granular Materials", Mechanical and Industrial Engineering, Department, Clarkson University, Potsdam, New York, **M.Sc., (May l98l)**

5. **Hooshang Jozavi**, "Acoustic Response Modifications in Elastic Media Due to Presence of Cracks", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (December l980)**

4. **David J. Wells**, "Fuzzy Set Theory and Fault Diagnosis of Mechanical Systems", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **M.Sc., (May l980)**

3. **M. Balakrishnan**, "Large Amplitude Oscillations of Hyperelastic Shells", Mechanical Engineering Department, Shiraz University, Shiraz, **M.Sc., (May l976)**

2. **Michael Gascoigne**, "A Method for Optimization of Stochastic Processes", Mechanical Engineering Department, Shiraz University, Shiraz, Iran, **M.Sc., (May l975)**

1. **Ahmad Ajal Looian**, "Fluid Dynamics of Magnetic Suspensions", Mechanical Engineering Department, Shiraz University, Shiraz, Iran, **M.Sc., (May l974)**

***11. Ph.D. (Doctoral) Students and Dissertations (30)***

*(Listing the most recent ones first)*

30 **Seyed Ehsan Tabatabaie**, “Design, Development, Modeling and Simulation of Linear, Looped, cylindrically slit and Torsional IPMC Actuators and Sensors”, Chair of Doctoral Committee, Department of Mechanical Engineering, The University of Maine, **Ph. D., expected May, (2019)**

29 **Hamed Saberi**, “Traction Force Measurements Of Live Bovine Aortic Endothelial Cells With Micro Pillars And Multiphysics Modeling With Novel Ionic Polymer Metal Composite Assays For Real Time Measurements”, Chair of Doctoral Committee, Department of Mechanical Engineering, The University of Maine, **Ph. D., August (2017)**

28 **Radek Glaser**, “Comparative Experimental, Finite Element and Dimensional Exploration of the Inflation, Deflation and Leakage of a Thin Membrane Space Structure” , co-Chair of the Dissertation Committee with Professor Vince Caccese as Chair, and Professors Abedi, EECE and Professors Jin and Thompson of MEE, University of Maine, **Ph.D, August 2016**

27 **Hind Derar**, “Applications of Smart Materials to Orthopaedic Total Hip Replacement: Design of Stemless Hip Replacement Prosthesis”, Chair of Doctoral Committee with Professors Vince Caccese and Xudong Zheng, Department of Mechanical Engineering, and Professor Steve Elmer, Dept. Kinesiology and Integrative Physiology Michigan Technological University and Dr. Andy Hodge, MD, Director: Institute of Mobility and Longevity, Glendale Az., **Ph. D., May (2016)**

26 **William (Kyle) Spratt**, “Development of an Ultrasonic Torsion Sensor”, Co-Chair of Doctoral Committee with Professors John Vetelino of Electrical and Computer Engineering Department as Chair and Ashish Deshpande, Department of Mechanical Engineering, UT Austin and Professor Rick Eason, Department of Electrical and Computer Engineering, The University of Maine, **Ph. D., withdrew**

25 **Seyed Mahdi Mohammadi**, “Biomedical Engineering research and Development on Addressing Urethral Incontinece and Bladder Irrigation”, Chair of Doctoral Committee with Professors Vince Caccese and Xudong Zheng, Department of Mechanical Engineering, UMaine, Professor Ashish Deshpande, Department of Mechanical Engineering, UT Austin and Drs. Iradj Khavari, MD and Krishna Bhata, MD, Eastern Maine Medical Center (EMMC), Bangor, ME, **Ph. D., May (2015)**

24 **Marzieh H. Memar**, “Biomechanics and Injury Assessment of Head Impact Due to Falls”, co-Chair of Doctoral Committee with Professors Vince Caccese as Chair, Mechanical Engineering, UMaine and Ashish Deshpande, Department of Mechanical Engineering, UT Austin and Professor Xudong Zheng, Department of Mechanical Engineering, The University of Maine, **Ph. D., May (2015)**

23 Morteza Seidi, “Design and Evaluation of Protective Head Gear to Mitigate Head Injuries Due to Falls””, co-Chair of Doctoral Committee with Professor Vince Caccese as Chair, Mechanical Engineering, UMaine and professor Ashish Deshpande, Department of Mechanical Engineering, UT Austin and Professor Xudong Zheng, Department of Mechanical Engineering, The University of Maine, Ph. D., May (2015)

22 **Yousef Bahramzadeh**, “Multiphysics Modeling and Simulation of Dynamic Curvature Sensing in Ionic Polymer metal Composites (IPMCs) with Application in Soft Robotics”, Chair of Doctoral Committee with Professors Vince Caccese and Senthil Vel, Department of Mechanical Engineering, Professor Richard Eason, Dept. of Electrical and Computer Engineering, UMaine and Professor Maurizio Porfiri, Department of Mechanical and Aerospace Engineering, Polytechnic Institute of New York University, **Ph. D., May, (2014)**

21 **Matt Leland**, “Development of A Wireless IPMC Sensor Network For Inflatable Space Structures”, Chair of Doctoral Committee with Professors Vince Caccese, Department of Mechanical Engineering, and Professor Ali Abedi, Department of Electrical and Computer Engineering, The University of Maine, Orono, ME 04469, **on leave, Ph. D., pending**

20. **Mehran Mojarrad**," Study of Ionic Polymeric Gels As Smart Materials and Artificial Muscles for Biomimetic Swimming Robotic Applications", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **Ph.D., December, (2001)**

19. **Guoping Wang**, "A General Design of Bias Force Shape Memory Alloy (BFSMA) Actuators and An Electrically-Controlled SMA Knee and Leg Muscle Exerciser for Paraplegics and Quadriplegics", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico,, **Ph.D. (May 1998)**

18. **Robert Alvarez**, "Quantifying Multirate, Parallel and Asynchronous Control Law Implementation Performance Effect", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico,, **Ph.D., May (1997)**

17. **Ali. A. Tootoonchi**, "Modeling, Design and Manufacturing of Multiple End-Effector Flexible Robotic Systems", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **Ph.D. , May (1996)**

16. **Eming Chen**, "Dynamic Analysis and Experimental Investigation on Position and Force Control for Flexible Link Manipulators“, Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **Ph.D., May (1995)**

15. **Hyunsok Pang**, " Kinematics, Dynamics and Control of Hybrid Manipulators", Department of Mechanical Engineering, University of New Mexico, Albuquerque, New Mexico, **Ph.D., May (1995)**

14. **Hossein Sabbagh**, "Modeling of Robot Manipulators Moving in a Viscous Medium", Mechanical Engineering Department, University of New Mexico, Albuquerque, New Mexico, **Ph.D., May (1991)**

13. **Bing Chin Chiou**, "Dynamic Stability of Flexible Robot Manipulators", Mechanical Engineering Department, University of New Mexico, Albuquerque, New Mexico, **Ph.D., (December 1989)**

12. **Vincent B. DeGregorio**, "The Effects of Sample Preparations on the Liquefaction Potential of Sand", Civil and Environmental Engineering Department, Clarkson University, Potsdam, New York, (Co-chairman of Ph.D. Committee), **Ph.D. May (1988)**

11. **Kambiz Salari**, "3-D Numerical Simulation of Turbulent Flow", University of New Mexico, Mechanical Engineering Department, Albuquerque, New Mexico, (Co-chairman of Ph.D. Committee), **Ph.D., December (1988)**

10. **Sherman Wilcox**, "A Motion Analysis of the Phonetic Structure of Finger Spelling", Department of Linguistics, University of New Mexico, Albuquerque, New Mexico, (co-chair of Ph.D. Committee), **Ph.D., May (1988)**

9. **M.A.A. Mohamed**, "Stick-Slip and Friction Noise Theory and Experiments", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, (co-chairman of Ph.D. Committee), **Ph.D., January (1987)**

8. **Ali Meghdari**, "Kinematics, Deformation Characteristics and Constitutive Equations for Flexible Robot Manipulators", Mechanical Engineering Department, University of New Mexico, Albuquerque, New Mexico, **Ph.D., May (1987)**

7. **Samir Zaki Abdel-Rahman**, "On the Stability of the Liquid-Filled Projectiles", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **Ph.D., May (1986)**

6. **Frank Zirilli**, "Free Convection from Parallel Plates", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, (co-chair of Ph.D. committee), **Ph.D., May (l985)**

5. **Y.T. Kim**, "Kinematics, Dynamics and Nonlinear Control of Robot Manipulators", EECE Department, University of New Mexico, Albuquerque, New Mexico, (co-chair of Ph.D. committee), **Ph.D., March (l985)**

4. **David John Wells**, "Failure Diagnosis for Complex Dynamic Engineering Systems Using Fuzzy Sets and Systems Theory", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, **Ph.D., July (l984)**

3. **Shu-Sheng J. Siah**, "Two Dimensional Shear Flow of a Granular Material", Civil and Environmental Engineering Department, Clarkson University, Potsdam, New York, (co-chair of Ph.D. committee), **Ph.D., May (l983)**

2. **Kin-Forie Chiou**, "Modeling of Ice Jams in Nonuniform Channels", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, (co-chair of Ph.D. committee), **Ph.D., (May l982)**

1. **K.W. Chan**, "Dynamic Crack Propagation Using Finite Element Techniques", Mechanical and Industrial Engineering Department, Clarkson University, Potsdam, New York, (co-chair of Ph.D. committee), **Ph.D., (May l982)**

***12. Publications and Patents (651):***

***12A-Refereed Journal Publications (244):***

*(Listing the most recent ones first)*

245 S.E. Tabatabaie and M. Shahinpoor, “Novel Configurations of Slit Tubular Soft Robotic Actuators and Sensors made with Ionic Polymer Metal Composites (IPMCs)“, **Robotics and Automation Engineering Journal**, RAEJ-RW-18-613,  Volume 3 Issue 4, pp: 1-10,- Jul (2018)

244 S.E. Tabatabaie and M. Shahinpoor, “Soft Biomimetic Robotic Looped Haptic Feedback Sensors“, Journal of Robotic Engineering & Automa­tion Technology, Volume 2018; Issue 01**,** pp: 1-10, (2018)

243 R. Glaser, V. Caccese, M. Shahinpoor, “Comparative finite element and experimental analysis of a quasi-static inflation of a thin deployable membrane space structure “, **Journal of Finite Elements in Analysis and Design**, vol. 138, pp. 48-65, (2018)

242 D. Armstrong, B. Najafi and M. Shahinpoor, “Potential Applications of Smart Multi-Functional Wearable Materials to Gerontology”, **Gerontology Journal**, Manuscript No.: 201606007, Published online: January 12, 2017, Published in print, vol.63, pp. 287-298, (2017)

241 M. Alahbakhshi, A. Fallahi, E. Mohajerani, M. R. Fathollahi, F. Afshar Taromi, M. Shahinpoor, “High-performance Bi-stage process in reduction of graphene oxide for transparent conductive electrodes”, **Optical Materials**, vol.64 (2017), pp: 366-375, (2017)

240 A. Fallahi, Y. Bahramzadeh, E. Tabatabaie and M. Shahinpoor, “A Novel Multifunctional Soft Robotic Transducer Made with Poly (Ethylene-co-Methacrylic Acid) Ionomer Metal Nanocomposite”, **Int. Journal of Intelligent Robotics and Applications**, DOI 10.1007/s41315-017-0013-y, Special Issue on Soft Robotics, 22 March (2017)

239 K. Asaka, K. Kim, K. Oguro and M. Shahinpoor, “IPMCs as EAPs: Fundamentals”, Electromechanically Active Polymers, Polymers and Polymeric Composites: A Reference Series, **Springer International Publishing Switzerland**, F. Carpi (ed.), DOI 10.1007/978-3-319-31767-0\_6-1, (2016)

238 M. Shahinpoor, ”Ionic Polymer Metal Composites as Soft Biomimetic Robotic Artificial Muscles”**, RSC Smart Materials Series**, Number 18**,** Royal Society of Chemistry Publishers, pp. 341-363, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2016)

237 M. Shahinpoor, ”Ionic Polymer Metal Composites as Dexterous Manipulators and Haptic Feedback/Tactile Sensors for Minimally Invasive Robotic Surgery”**, RSC Smart Materials Series**, Number 18**,** Royal Society of Chemistry Publishers, pp. 311-340, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2016)

236 J. G. Michopoulos, M. Shahinpoor, A. Iliopoulos,”Multiphysics Modeling of Nonlinear Ionic Polymer Metal Composite Plates”, **RSC Smart Materials Series**, Number 18, Royal Society of Chemistry Publishers, pp: 285-310**,** Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2016)

235 J. G. Michopoulos, M. Shahinpoor, A. Iliopoulos, ”A Continuum Multiphysics Theory for Electroactive Polymers and Ionic Polymer Metal Composites”, **RSC Smart Materials Series**, Number 18, Royal Society of Chemistry Publishers, pp: 257-284**,** Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2016)

234 M. Shahinpoor, ”Ionic Polymer Metal Composites (IPMCs) Optimal Manufacturing”**, RSC Smart Materials Series**, Number 17**,** Royal Society of Chemistry Publishers, pp. 61-147, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2016)

233 P. Bakhtiarpour, A. Parvizi, M. Muller, M. Shahinpoor, O. Marti and M. Amirkhani, *“*An External Disturbance Sensor for Ionic Polymer Metal Composite Actuator”, **Smart Materials and Structures International Journal**, Volume 25, Number 1, January 2016, pp. 15008-15014(7), (2016)

232 H. Asanuma, K. Asaka, J. Su, L. Poubel, and M. Shahinpoor, “Smart Contact Oscillations by IPMCs”, **Smart Materials and Structures International Journal**, Volume 25, Number 2, February 2016, pp. 15015-15-022, (2016)

231 M. Shahinpoor, ”Fundamentals of Ionic Polymer Metal Composites (IPMCs)”**, RSC Smart Materials Series**, Number 17**,** Royal Society of Chemistry Publishers, pp. 1-60, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK (2016)

230 A. Fallahi, M. Alahbakhshi, E. Mohajerani, F. Afshar Taromi, A. Mohebbi and M. Shahinpoor, “Cationic Water-Soluble Conjugated Polyelectrolytes/ Graphene Oxide Nanocomposites as Efficient Green Hole Injection Layers in OLEDs”, J. Phys. Chem. C, Volume 119, Number 23, pp 13144–13152, (2015)

229 H. Derar and M. Shahinpoor, “Recent Patents and Designs on Hip Replacement Prostheses”, **Open Biomed Engineering Journal**, vol 9, pp. 92-102, (2015)

228 A. Amiri Moghadam, A. Kouzani, K. Torabi, A. Kaynakand M. Shahinpoor, “Development of a novel soft parallel robot equipped with polymeric artificial muscles”, **Smart Materials and Structures International Journal**,  [Volume 24,](http://iopscience.iop.org/0964-1726/24)[Number 3](http://iopscience.iop.org/0964-1726/24/3), 5017, (2015)

227 M. Mohammadi and M. Shahinpoor, “Noninvasive Urinary Incontinence Control Device”, **ASME** [**Journal of Medical Devices,** Volume 8, Issue 4,](http://medicaldevices.asmedigitalcollection.asme.org/issue.aspx?journalid=128&issueid=930697) Paper No. MED-13-1191, 5 pages, Design Innovation Paper, (2014)

226 A. Fallahi, F. Afshar Taromi, A. Mohebbi, J. D. Yuen and M. Shahinpoor, “A Novel Ambipolar Polymer: From Organic Thin-Film Transistors to Enhanced Air-Stable Blue Light Emitting Diodes”, accepted for publication, Journal of Material Chemistry C, vol. 2, pp 6491-6501, (2014)

225 Y. Bahramzadeh and M. Shahinpoor, “A Review of Ionic Polymeric Soft Actuators and Sensors**”, Int. Journal of Soft Robotics**, Vol. 1, No. 1, pp. 38-52, (2013), **Mary-Ann Lieber, Inc. Publishing, New York, USA,** (2013)

224 D. Chatterjee, N. Hanumaiah, Y. Bahramzadeh and M. Shahinpoor, “Actuation and Sensing Studies of a Miniaturized Five Fingered Robotic Hand Made with Ion Polymeric Metal Composite (IPMC)”, **Advanced Materials Research,** Vol. 740 (2013) pp.: 492-495, **Trans Tech Publications, Switzerland,** (2013)

223 M. Shahinpoor, “Chitosan/IPMC Artificial Muscles”, **Advances in Science and Technology,** Trans Tech Publications, Switzerland, Vol. 79**,** pp.: 32-40**,** (2013)

222M. Shahinpoor, “Muscular Biopolymers”, Book Chapter in “**Topics in Engineered Biomimecry: Biomimetics, Bioinspiration and Bioreplication**”, edited by Akhlesh Lakhtakia and Raul-Jose Martin-Palma, **Elsevier publishers,** Waltham, MA, USA, (2013)

221 R. Glaser, V. Caccese and M. Shahinpoor, “Development of Novel Smart MRF-Gates for Wireless Dynamic Control of Fluid Flow”, **Smart Materials and Structures Journal**, vol. 22, no.1, (17pp), pp. 1-17, (2013)

220 Y. Bahramzadeh and M. Shahinpoor, “Modeling of IPMC Guide Wire Stirrer In Endovascular Surgery”, Chapter 2**, Electroactivity in Polymeric Materials, Edited by Lenore Rasmussen,**  Springer Publications, New York, Heidelberg, Dortrecht, London, vol. 20, no. 9, 094011 (7pp), March (2012)

219 Atul Tiwari, Ravi B. Srivastava, Rajesh K. Saini, Anil K. Bajpai, Lucia H. Innocentini Mei, Shivani B. Mishra, Ashutosh Tiwari, Ashok Kumar, Mohsen Shahinpoor, Golok B. Nando, Subash C. Kundu, and Avrath Chadha, “Biopolymers: An Indispensable Tool for Biotechnology”, Chapter 1 of “**Biotechnology in Biopolymers**”, Editd by Professors Atul Tiwari and Ravi B. Srivastava, **iSmithers-Rapra publishers,** London, (2012)

218. M. Shahinpoor, “Biopolymer/Ionic Polymer Composite Artificial Muscles”, Chapter 10 of **“Biotechnology in Biopolymers**”, Edited by Professors Atul Tiwari and Ravi B. Srivastava, **iSmithers-Rapra publishers,** London, (2012)

217 M. Shahinpoor, “Artificial Muscles: Selected Papers from the 5th World Congress on Biomimetics, Artificial Muscles and Nano-Bio”, in **Smart Materials and Structures International Journal**, Special Section: **Artificial Muscles**, Volume 20, Number 12, pp. 1-3, December 2011.

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***12B-Refereed Book s and Edited Volumes:***

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***13. Summary of Academic Services & Achievements***

**1-Over 49 years of dedicated teaching of engineering courses to over 5800 students;**

**2-Total of 23 Academic Awards and Honors, including three teaching excellence awards and four research excellence awards;**

**3-Over $15m in research and academic funding;**

**4-Some 244 refereed journal, book chapters and encyclopedia publications,85 books and edited volumes publications, 255 conference proceedings publications and 67 patents, patent pending and published patent applications.**

**5-Responsible for the establishment of 17 academic educational and research laboratories and centers;**

**6- Serving as Academic Department Chair Three Times and As Associate Dean of Engineering Two Times;**

**7-Achieving peer recognition to become Fellow of ASME (American Society of Mechanical Engineers), Fellow of IOP (Institute of Physics) and Fellow of RSC (Royal Society of Chemistry) and Fellow of the National Academy of Inventors (NAI)**

**8-Achieving peer recognition to become a member of NY Academy of Sciences;**

**9-Advising and completing some 75 Masters Students;**

**10-Advising and completing some 30 Ph.D. (Doctoral) students;**

**11-Helping establish a high technology company (Environmental Robots Incorporated) to become the world’s leader in manufacturing products involving nano composites, distributed nanosensors, nanoactuators, nanotransducers and artificial muscles, intelligent biomedical products, smart medical implants, prostheses and orthoses and ionic polymeric science kits;**

**12-Achieving peer recognition to be appointed as endowed chair professor three times; Halliburton Chair Professor of CAD/CAM and Robotics at University of New Mexico, Regents Chair Professor at University of New Mexico and Richard C. Hill Professor at University of Maine. Induction in 2008, as a distinguished member of the prestigious Francis Crowe Society. Distinguished induction as a Fellow of the National Academy of Inventors (Induction in April 2016 in the presence of many dignitaries including Chief of the White House Office of Science and Technology, President of the National Academy of Inventors, President of the National Academy of Medicine and Commissionaire of US patents.**

**13- Having organized the first world congress on biomimetics, artificial muscles and nano-bio (BAMN) and serving as its General Chair which has now grown internationally and will be at its 9th International Congress (BAMN 2017) to held on the campus of University of Wollongong in Australia,** **25-27 September (2017). The 9th International Congress (BAMN 2015) was held on the campus of University of British Columbia, Vancouver, Canada in the summer of 2015. The 7th congress was held in South Korea’s historic island of Jeju in 2013**

**14- Having written the first text book with a solutions manual in “Robotic Surgery” in 2014 (Stanford Publishing) with emphasis on the use of Smart Materials in Robotic Surgery to provide haptic feedback to surgeons.**

**15- Creation of the International Journal of Environmental Conscious Design and Manufacturing (IJECDM) which is now in its 24th year**

**16- Having served as series editor in creation of a recent series of published volumes on “Smart Materials” by the Royal Society of Chemistry in UK. So far this series has published some 20 volumes by world’s experts.**

***14. Professional References:***

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* Professor Howard Yonas, MD, Agnes and Earl Walker Distinguished Professor and Chairman: Department of Neurosurgery, School of Medicine, University of New Mexico, Albuquerque, NM 87131 (email: [hyonas@salud.unm.edu](mailto:hyonas@salud.unm.edu)), Tel: (505)-272-3401
* Professor Mohsen Mosleh, Professor, Department of Mechanical Engineering, Howard University, Washington, DC 20059 (email: [mmosleh@howard.edu](mailto:mmosleh@howard.edu)), Tel: (202) 806 6222
* David Soltanpour, MD., Chief Ophthalmologist and Microsurgeon, New York Eye and Ear, New York, NY (email: [soltanpour@aol.com](mailto:soltanpour@aol.com)), (917) 972 0538
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***15. Media Coverage and Recognition:***

Has been featured in connection with ionic polymeric “Artificial Muscles” and specially the dawn of “Bionic Eyes” in the World, BBC (British Broadcasting Corporation) programs, US NBC, ABC/Peter Jennings World News, CBS (Channel 13), Discovery Channel, KNME, German Public TV, Italian Public TV, Scientific American, Albuquerque Journal, The Albuquerque Tribune, New Mexico Business Weekly (September 2004, March 2005, June 2005), Inc. Magazine (April 2005), KNME TV, CBS (Channel 13), Discovery Channel (Next Step and Beyond 2000) as well as NBC Dateline Discovery and ABC (Channel 7), The Italian National TV, MIT Technology Review, Popular Mechanics, Discovery Magazine, London Sunday Times, Los Angeles Times, Dallas Times, BBC World News (March 2002, Bionic Eyes), New Scientists (April 2002, Bionic Eyes), Popular Science (July 2002, Bionic Eyes), Wired Magazine (March, 2004), many American, European, Canadians and South American (Brazil, Argentina, Columbia, Mexico) Magazines, etc. The September 2005 Issue of Popular Science featured an article on the Future of Human Body and Dr. Shahinpoor’s arm wrestling robots and the ionic polymeric artificial muscles in 2004, 2005 and 2006, please see “[NASA Jet Propulsion Laboratories Robotic Arm Wrestling Competition Website](http://ndeaa.jpl.nasa.gov/nasa-nde/lommas/eap/EAP-armwrestling.htm)”. Recently his publication “Biomimetic Robotic Venus Flytrap” in the Journal of Bioinspiration and Biomimetics (Bioinsp. Biomim. 6 (2011) 046004) has received worldwide attention by:

Wired Magazine, <http://www.wired.co.uk/news/archive/2011-10/28/robotic-venus-flytraps>,

Technology Review, <http://www.heise.de/tr/artikel/Die-robotische-Venusfliegenfalle-1399940.html>, NanoWerk, <http://www.nanowerk.com/spotlight/spotid=24480.php>,

Discovery News, <http://news.discovery.com/tech/robot-venus-flytrap-111020.html>,

QMED,(<http://www.qmed.com/mpmn/medtechpulse/researcher-looks-venus-flytraps-develop-artificial-muscles>)

International Business Times, <http://www.ibtimes.com/articles/240094/20111030/venus-flytrap-prototype-robots-trap-insects-fuel.htm>,

Physics Organization, <http://phys.org/news/2011-10-mechanical-robot-venus-flytrap.html>, and Frog Heart, <http://www.frogheart.ca/?tag=mohsen-shahinpoor>, plus many more and has been downloaded over 500 times in the first few weeks of its publication.

Elected a Fellow of the National Academy of Inventors (NAI) in 2015 (<http://www.prnewswire.com/news-releases/national-academy-of-inventors-announces-2015-nai-fellows-300192962.html>)