

## GRADUATE STUDENTS SUPERVISED By: Professor Ali Meghdari

### ◆ Post-Doctoral Research Fellows (Associates) ◆

Sharif University of Technology, Center of Excellence in Design, Robotics, and Automation,  
**Research Chair professorship: “Robotics Systems”**, Sponsored by INSF-BMN, Tehran, Iran.

- [1] **Dr. Atefeh Khoshnood**, "DNA Sequencing and Automated Analysis", Sponsored By: National Elites Foundation of Iran", March 2013-March 2014.
- [2] **Dr. Minoo Alemi**, "Robotic Assisted Language Learning (RALL)" and “Clinical Application of Humanoid Robots as Thrapy Assistant for Autism and Cancer Treatments”, Sponsored By: National Elites Foundation of Iran", March 2013-March 2015.
- [3] **Dr. Ehsan Ma’ani Miandoab**, “Dynamic Analysis of Nano-Resonators”, October 2014-October 2015.

### ◆ Doctor of Philosophy (*Ph.D.*) Dissertation Students ◆

Sharif University of Technology, School of Mechanical Engineering, Tehran, Iran.

- [1] **Dr. Farbod Fahimi**, "Investigation & Development of Dynamic Decoupling Techniques for Flexible Multi- Body Systems", (Ph.D. Dissertation; 2/1999), Applied & Solid Mechanics Division.
- [2] **Dr. Davood Naderi**, (Co-Advised with Prof. Mohammad Durali), "Kinematics & Dynamics Modeling and Control of a Mobile Manipulator", (Ph.D. Dissertation; 5/2000), Applied & Solid Mechanics Division.
- [3] **Dr. Reza Ravani**, (Co-Advised with Prof. Bahram Ravani), "On the Path Planning of a Robot Manipulator Using the Rational Frenet-Sceret Motion", (Ph.D. Dissertation; 3/2005), Tehran Sceince and Research Campus-Islamic Azad University.
- [4] **Dr. Ali Jafari**, (Co-Advised with Prof. Farzam Farahmand), "Dynamics Modeling of Knee Joint after Total Knee Arthroplasty (TKA)", (Ph.D. Dissertation; 01/08), Applied & Solid Mechanics Division.
- [5] **Dr. Kambiz Ghaemi Oskouei**, (Co-Advised with Prof. Saeed Sohrabpour), "Design and Kinematics Optimization of the Dual-Arm Cam-Lock Manipulator", (Ph.D. Dissertation; 3/2009), Applied & Solid Mechanics Division.
- [6] **Dr. Alireza Ebrahimi**, (Co-Advised with Dr. Mehdi Behzad), “A New Approach for Vibration Analysis of a Cracked Beam", (Ph.D. Dissertation; ^/2009), Applied & Solid Mechanics Division.
- [7] **Dr. Seyed Hanif Mahboobi**, (Co-Advised with Dr. Nader Jalili), "Molecular Dynamics Simulation of Nanoscale Effects in Nanomanipulation", (Ph.D. Dissertation; 10/2009), Applied & Solid Mechanics Division.
- [8] **Dr. Mahmoud Reza Azghani**, (Co-Advised with Prof. Farzam Farahmand), “Measurement, Modeling and Analysis of Trunk Performance in Isometric Mode”, (Ph.D. Dissertation; 10/2009), Biomechanics Division.
- [9] **Dr. Ali Selk Ghaffari**, (Co-Advised with Dr. Gholamreza Vossoughi), "Dynamics Analysis of an Exoskeletal System to Assist a Paraplegic Patient", (Ph.D. Dissertation; 1/2010), Applied & Solid Mechanics Division.
- [10] **Dr. Hossein Nejat Pishkenari**, "Molecular Dynamics Based Modeling and Simulation of Nanoscal Processes in Atomic Force Microscopy", (Ph.D. Dissertation; 12/2010), Applied & Solid Mechanics Division.
- [11] **Dr. Borhan Beigzadeh**, (Co-Advised with Prof. S. Sohrabpour) "On the Correlation of Dynamic Biped Locomotion and Dynamic Object Manipulation", (Ph.D. Dissertation; 6/2011), Applied & Solid Mechanics Division.

- [12] **Dr. Hoda Sadeghian**, (Co-Advising with Prof. A. Alasti and Dr. H. Salarieh), "Control of Random Systems by Fractional Calculus (Ph.D. Dissertation; 01/2014), Applied & Solid Mechanics Division.
- [13] **Dr. Kaveh Meraat**, (Co-Advising with Prof. A. Alasti Dr. H. Salarieh), "Control of Hybrid Random Systems by Limited Access to State-Space Data", (Ph.D. Dissertation; 02/2015), Applied & Solid Mechanics Division.
- [14] **Dr. Mohammad Abedini**, (Co-Advising with Dr. Hassan Salarieh), "Model Reference Adaptive Control in Fractional Order Systems", (Ph.D. Dissertation; 03/2015), Applied & Solid Mechanics Division.
- [15] **Dr. Mansour Abtahi**, (Co-Advising with Prof. Gh. Vossoughi), "Dynamic Analysis of Electrostatical Scratch Drive Micromotors", (Ph.D. Dissertation; 02/2015), Applied & Solid Mechanics Division.
- [16] **Alireza Nemati-Estahbanati**, (Co-Advising with Prof. Saeed Sohrabpour and Dr. Hossein Nejat) "Modeling and Motion Analysis of a Nano Mobile Robot Using Molecular Dynamics", (Ph.D. Thesis in Progress), Applied & Solid Mechanics Division.
- [17] **Seyyed Mohammad Hosseini Lavasani**, "Modeling and Motion Analysis of a Light-driven Nano Mobile Robot", (Ph.D. Thesis in Progress), Applied & Solid Mechanics Division.
- [18] **Alireza Taheri**, (Co-Advising with Dr. H.R. Pouretamad and Dr. M. Alemi), "On the Design and Application of Humanoid Robots as Co-Therapist in Autism Diagnosis and Treatment", (Ph.D. Thesis in Progress), Applied & Solid Mechanics Division.

◆ **Master of Science (M.Sc.) Thesis Students** ◆

Sharif University of Technology, School of Mechanical Engineering, Tehran, Iran.

- [1-2] M. Arefi and M. Mahmoudian, "Modeling, Design, and Fabrication of the Sharif Artificial Hand: Biomechanical Issues", 8/1990, Biomechanical Engineering Division.
- [3-4] B. Vosoughi-Vahdat and R. Shahghadami, (Co-Advised with Dr. Edmond Zahedi), "Modeling, Design, and Fabrication of the Sharif Artificial Hand: Bioelectronics Issues", 12/1990, Bioelectronics Engineering Division.
- [5] H. Haashem Alhoseyni, "Computer Graphics Simulation of the PUMA-560 Robot Kinematics and Dynamics", 9/1990, Applied & Solid Mechanics Division.
- [6] I. Hashemlou, "Kinematics & Dynamics Analysis of a Four-Legged Locomotion System", 9/1990, Applied & Solid Mechanics Division.
- [7] H. Sayyaadi, "Theory of Contact and Optimization in Trajectory Planning for Finger-Like Dexterous Manipulators", 9/1990, Applied & Solid Mechanics Division.
- [8] M. Ghasempouri, "Modeling, Dynamics and Control of Elastic Manipulators", 5/1991, Applied & Solid Mechanics Division.
- [9] S. Raghibi-Zadeh, "Trajectory Generation, Position and Force Control Theories of Robots with an Emphasis on Adaptive Control", 6/1991, Applied & Solid Mechanics Division.
- [10] F. Aghili, (Co-Advised with Dr. Mohammad Haghpanahi), "Design & Control of an Above-Elbow Prosthesis Based on Combination of E.P.P. Method and Extraction of Motion Classes by Pattern Recognition", 3/1992, Biomechanical Engineering Division.
- [11] R. Davoodi, "Applying Engineering Techniques in the Analysis of Human Birth Process", 6/1992, Biomechanical Engineering Division.
- [12] M. Jafarian, "Modeling, Design, Fabrication and Analysis of Pneumatically Actuated Artificial Muscles", 1/1993, Applied & Solid Mechanics Division.
- [13] A. Sekhavat, "Swing-Free Motion of a Suspended Object from the End-Effector of an Industrial Robot", 2/1994, Applied & Solid Mechanics Division.

- [14] S. Sarjami, (Co-Advised with Prof. Mohammad H. Kargarnovin), "Application of Analytical Methods and Numerical Simulation in Orthodontics: Study of Arch-Wire System of Forces and Teeth Movements", 9/1994, Biomechanical Engineering Division.
- [15] J. Mobarezpour, (Co-Chairman of the Thesis Committee), "Human Body's Control Strategy in Standing Mode", 12/1996, Biomechanical Engineering Division.
- [16] A. A. Mahdavi-Jalal, "Minimizing Amplitude of Oscillation of a Flexible Beam During Transport by a Robot", 1/1997, Open University, Dept. of Mechanical Engineering, Tehran.
- [17] M. Naderian, (Co-Advised with Dr. Gholamreza Vossoughi and Dr. Khatiboleslam Sadrnejad), "Application of NiTi Shape Memory Alloys for Actuation of an Artificial Hand", 3/1997, Applied & Solid Mechanics Division.
- [18] F. Barazandeh, "Design and Fabrication of a Series of Modular Robotics Grippers Equipped with a Quick Change System", 10/1997, Applied & Solid Mechanics Division.
- [19] M. Shahparian, "Kinematics and Dynamics Modeling of Parallel Manipulators", 9/1997, Applied & Solid Mechanics Division.
- [20] M. Khazraie, "Solving Non-Linear Dynamics Model of Joints in Human Body", 6/1997, Biomechanical Engineering Division.
- [21] H. Shah Ali, "Three Segment Dynamic Model of Knee Joint in Two-Dimensional Space", 6/1997, Biomechanical Engineering Division.
- [22] M. Saaedi, "Design and Fabrication of a Feeding Mechanism to Automate the Automobile Tire Assembly Process", 9/1997, Manufacturing Engineering Division.
- [23] J. Vatankhah, "Design and Fabrication of a 3-D.O.F. Wrist Force Sensor", 10/1997, Applied & Solid Mechanics Division.
- [24] H. Javadi, (Co-Advised with Dr. Hamid R. Katouzian and Dr. Mohammad T. Ahmadian), "F.E.M. Analysis of Stress Wave Propagation at Heel Strike on the Mechanical Connection of Bone and Artificial Joint", 12/1997, Biomechanical Engineering Division.
- [25] R. J. Samarghandi, (Co-Advised with Dr. Farzam Farahmand), "On the Design and Fabrication of Orthopaedic Implants", 3/1998, Biomechanical Engineering Division.
- [26] M. Afrough, "Investigation of Robot Kinematics Calibration Methods as Applied to MA-3000 Manipulator", 5/1999, Applied & Solid Mechanics Division.
- [27] H. Fakur Alagheband, (Co-Advised with Dr. Farzam Farahmand), "Force Analysis of the Knee Joint During Rise from Deep Squat", 6/1999, Biomechanical Engineering Division.
- [28] A. R. Samadi, "Design and Animation of Bicycles for Women of Islamic Culture", 6/1999, Biomechanical Engineering Division.
- [29] A. A. Forough-Nasiraei, "Design and Fabrication of a Hospital Nursing Robot", 9/2000, Biomechanical Engineering Division.
- [30] A. H. Bahrami, "Mathematical Modeling and Analysis of the Normal, Degenerated, and Fused Cervical Spine", 11/2001, Applied & Solid Mechanics Division.
- [31] A. Nezafat, "Investigation of Robot Kinematics in Braced Manipulators", 03/2002, Applied & Solid Mechanics Division.
- [32] M. Amir Hosseini, "Kinematics and Dynamics of an Underwater Remotely Operated Vehicles (UROV)", 03/2002, Applied & Solid Mechanics Division.
- [33] M. Arianpour, "Kinematics Investigation and Analysis of the Jumping Process", 03/2002, Applied & Solid Mechanics Division.
- [34] N. Dadkhah Tehrani, (Co-Advised with Prof. Nasser Sadati), "Intelligent Approach in Satellite Attitude Control", 09/2002, Applied & Solid Mechanics Division.
- [35] Azam A. Toosi, (Co-Advised with Dr. Mohammad H. Saeidi), "Energy Flow Optimization Model in a Housing Unit", 02/2003, Energy Conversion Division.
- [36] M. R. Alam, "Real-Time Compensatory Manipulator Motion Planning for Stabilizing a Mobile Manipulator", 07/2003, Applied & Solid Mechanics Division.

- [37] M. Nakhaee-Nejad, (Co-Advised with Dr. Davood Naderi) "On the Design and Motion Analysis of a Snake-Like Manipulator", 07/2003, Applied & Solid Mechanics Division.
- [38] H. R. Chabok, "On the Design and Fabrication of a Master/Slave Manipulator for Glove Box Environment", 3/2003, Manufacturing Engineering Division.
- [39] H. Borhan, (Co-Advised with Dr. Gholamreza Vossoughi), "Modeling and Control of an Underwater Remotely Operated Vehicles (UROV)", 03/2003, Applied & Solid Mechanics Division.
- [40-41] A. Lotfi, and S. H. Mahboobi, "Design Characteristics, Kinematics and Dynamics Modeling of a Shrimp Rover for Unstructured Environments", 06/2004, Applied & Solid Mechanics Division.
- [42] A. Kiapour, (Co-Advised with Dr. Farzam Farahmand), "Modeling and Analysis of Spine Muscles in Back when Creating Stability at the Presence of External Forces", 2/2004, Biomechanical Engineering Division.
- [43] M.R. Deylami, (Co-Advised with Prof. K.N. Sadrnejad), "Design and Fabrication of an Artificial Esfancter using NiTi Shape Memory Alloy", 8/2004, Biomechanical Engineering Division.
- [44] R. Karimi, "Dynamic Analysis and Control of Human Double Leg Jumps", 12/2004, Applied & Solid Mechanics Division.
- [45] H. Nejat Pishkenari, (Co-Advised with Dr. Nader Jalili), "Acquisition of High Precision Images for Non-contact Atomic Force Microscopy via Direct Identification of Sample Height", 03/2005, Applied & Solid Mechanics Division.
- [46] B. Beigzadeh, (Co-Advised with Dr. Majid Nili Ahmadabadi), "Kinematical and Dynamic Analysis of Biped Robots' Locomotion using Dynamic Object Manipulation Approach", 03/2005, Applied & Solid Mechanics Division.
- [47] A. Afshari, "New Form of Jacobian Matrix & Equations of Motion for a 6 D.O.F. Cable-Driven Parallel Robot using Constrained Variables", 12/2006, Applied & Solid Mechanics Division.
- [48] M. Rajaei, (Co-Advised with Prof. Saeed Sohrabpour), "Dynamic Analysis and Control of an Spherical Robot Mechanism", 08/2006, Applied & Solid Mechanics Division.
- [49] M. Saghafi, (Co-Advised with Dr. Nader Jalili), "Electrical Equivalent Circuit of Multi Mode Flexible Beams with Piezoelectric Elements", 10/2006, Applied & Solid Mechanics Division.
- [50] S. Eslami, (Co-Advised with Dr. Davood Naderi), "Increasing Stability of Mobile Manipulators using Dynamic Compensation", 12/2006, Applied & Solid Mechanics Division.
- [51] A.R. Mirbagheri, (Co-Advised with Dr. Farzam Farahmand), "Modeling and Optimum Design of a Robot Mechanism to Assist Laproscopic Surgery", 03/2007, Biomechanics Division.
- [52] S. H. Tamaddoni, (Co-Advised with Prof. Saeed Sohrabpour), "Dynamic Modeling and Analysis of Running in Humanoid Robots", 06/2007, Biomechanics Division.
- [53] P. Zandyeh, (Co-Advised with Dr. Mohammad T. Ahmadian), "Visual Quality Control of Slabs in Hot Rolling Mill using Neuro-Fuzzy Network", 12/2007, Applied & Solid Mechanics Division.
- [54] A. R. Mohammadi, "Design and Fabrication of Brachiation Robot", 12/2007, Applied & Solid Mechanics Division.
- [55] S. Radmard, (Co-Advised with Prof. Hassan Zohoor), "Design, Modeling and Control of Robotic Fish using IPMC's", 11/2008, Applied & Solid Mechanics Division.
- [56] H. Zomorodi Moghaddam, (Co-Advised with Dr. Farzam Farahmand), "Measurement and Analysis of Human Body Balance Strategy on a Stabulo-Meter", 11/2008, Biomechanics Division.
- [57] M. Shahi, "Design, Simulation and Control of the Robotic Fish", 01/2009, Applied &

Solid Mechanics Division.

- [58] M. Mansouri Boroujeni, "Haptic Device Application in Virtual Training and Persian Calligraphy", 01/2009, Mechatronics Division, SUT International Campus, Kish Island.
- [59] M. Paziresh, (Co-Advised with Dr. Saeed Bagheri), "Design and Fabrication of a Three-Dimensional Incoherent Hologram of the Sharif University of Technology, International Campus-Kish Island's Logo", 06/2009, Mechatronics Division, SUT International Campus, Kish Island.
- [60] H. Babahosseini, "Modeling and Control of Manipulation Process of Nanoparticles by AFM", 02/2010, Applied & Solid Mechanics Division.
- [61-62] V. Yaghoubi Nasrabadi and H. Mohammadi, (Co-Advised with Dr. Saeed Bagheri) "Design of a Prototype 3D Flexible Endoscopy System Based on Digital Holography", 07/2010, Applied & Solid Mechanics Division.
- [63] A. R. Nemati-Estahbanati, "Experimental Investigation of Swarm Robots", 09/2010, Applied & Solid Mechanics Division.
- [64] S. M. Hosseini Lavasani, "Design, Fabrication and Model-based Control of a Brachiation Robot", 1/2011, Applied & Solid Mechanics Division.
- [65] M. Farshchi, "Modeling and Control of Swarm Robots", 03/2011, Mechatronics Division.
- [66] E. Nasiri, (Co-Advised with Dr. K. G. Osgouie), "*The PaakShooy*: A robotics cell for washing and preparation of a corpse for burial compatible with Islamic shari'at laws", 05/2011, Mechatronics Division, SUT International Campus, Kish Island.
- [67] S. Safavi, (Co-Advised with Dr. A. Selk Ghaffari), "Design of an Anthropometric Lower-Extremity Exoskeletal System", 08/2011, Mechatronics Division, SUT International Campus, Kish Island.
- [68] A.R. Taheri, (Co-Advised with Dr. S. H. Mahboobi), "Design and Implimentation of a Molecular Dynamics Simulation Software to Model Contact Processes at Nano Scale", 08/2011, Applied & Solid Mechanics Division.
- [69] N. Beheshtkaar, "Dynamics Simulation System of a Mechanical Flapping Bird", 10/2011, Applied & Solid Mechanics Division.
- [70] M.A. Mahjour, (Co-Advised with Dr. H. Nejat), "Simulation of Biomanipulation using Molecular Dynamics", 10/2011, Mechatronics Division, SUT International Campus, Kish Island.
- [71] M.H. Naseri, "Design and Fabrication of a Real Controller for a 6-DOF Robot Manipulator", 11/2011, Mechatronics Division.
- [72] B. Rezaeian, (Co-Advised with Dr. K. G. Osgouie), "Optimization of Kinematic Redundancy and Workspace Analysis of a Dual Arm Cam-Lock Robot", 11/2011, Mechatronics Division, SUT International Campus, Kish Island.
- [73] M. Heydari Kamroudi, "Analysis and Study of a Haptic System", 08/2012, Applied & Solid Mechanics Division.
- [74] N. Sadati, "Dynamic Simulation and Analyis of a Cat Robot", 08/2012, Applied & Solid Mechanics Division.
- [75] A. Khoshnevisan, (Co-Advised with Dr. K. G. Osgouie), "Design and Fabrication of a Wormlike Robot", 09/2012, Mechatronics Division, SUT International Campus, Kish Island.
- [76] Z. Jahanbin, (Co-Advised with Dr. Ebrahimi), "Dynamics Analysis of Flapping Bird Robot", 04/2013, Mechatronics Division, SUT International Campus, Kish Island.
- [77] H. Kamali, (Co-Advised with Dr. H. Nejat), "Design and Fabrication of a Quadrator Robot", 11/2013, Applied & Solid Mechanics Division.
- [78] M. Ghazisaedy, (Co-Advised with Dr. M. Alemi), "Effect of Employing Humanoid Robots for Teaching English Language in Iranian Junior High-Schools", 06/2014, Languages and Linguistics Center.
- [79] Nasim Mahboob Basiri, (Co-Advised with Dr. M. Alemi), "The Effect of Applying Humanoid

Robots as Teacher Assistants on Helping Iranian Autistic Pupils in Learning English as a Foreign Language”, 06/2015, Languages and Linguistics Center.