Publications of "Professor Ali Meghdari "

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Scientific Publications in International Journals (i.e. ISI)

[1] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri, "Molecular Dynamics Simulation of Manipulation of Metallic Nanoclusters on Stepped Surfaces", Central European Journal of Physics, pp. 1-12, Accepted July 26, 2010.

[2] S. H. Mahboobi, **A. Meghdari,** N. Jalili, F. Amiri, "Molecular Dynamics Simulation of Manipulation of Metallic Nanoclusters on Double-layer Substrates", **Physica E Journal**, Vol. 42, No. 9, pp. 2364-2374, 2010.

[3] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri, "Planar Molecular Dynamics simulation of Au Clusters in Pushing Process", Int. Journal of Nanomanufacturing, Vol. 5, pp. 288-296, Nos. ³/₄, 2010.

[4] S. H. Tamaddoni, F. Jafari, A. Meghdari, S. Sohrabpour, "Biped Hopping Control Based on Spring Loaded Inverted Pendulum Model", Int. Journal of Humanoid Robotics, Vol. 7, No. 2, pp. 263-280, 2010.

[5] H. Nejat Pishkenari, N. Jalili, S. H. Mahboobi, A. Alasty, A. Meghdari, "Robust Adaptive Backstepping Control of Uncertain Lorenz System", Chaos; Journal of American Institute of Physics, Vol2, pp. 1-5, 2010.

[6] A. Selk Ghafari, A. Meghdari, and G. R. Vossoughi, "Feedback Control of the Neuromusculoskeletal System in a Forward Dynamics Simulation of Stair Locomotion", **Proc. of IMechE** Part H: Journal of Engineering in Medicine, Vol. 223, No. 2, pp. 663-675, 2009.

[7] A. Selk Ghafari, **A. Meghdari**, and G. R. Vossoughi, "Muscle-Driven Forward Dynamics Simulation for the Study of Differences in Muscle Function during Stair Ascent and Descent", Proc. of IMechE, Part H: Journal of Engineering in Medicine, Vol. 223, pp. 863-874, 2009.

[8] A. Selk Ghafari, **A. Meghdari**, and G. R. Vossoughi, "Biomechanical Analysis for the study of Muscle Contributions to Support Load Carrying", **Proc. of IMechE, Part C: Journal of** Mechanical Engineering in Science, Vol. 224, pp. 1-12, 2009.

[9] S. H. Mahboobi, **A. Meghdari**, N. Jalili, F. Amiri, "Precise Positioning and Assembly of Metallic Nanoclusters as Building Blocks of Nanostructures: A Molecular Dynamics Study", **Physica E Journal**, Vol. 42, pp. 182-195, **2009**.

[10] M. R. Azghani, F. Farahmand, **A. Meghdari**, G. Vossoughi, M. Parnianpour, "Design and Evaluation of a Novel Triaxial Isometric Trunk Muscle Strength Measurement System", Proc. of IMechE, Part H, Journal of Enineering in Medicine, Vol. 223, pp. 755-766, **2009**.

[11] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri, "Two-Dimensional Atomistic Simulation Metallic Nanoparticles Pushing", Modern Physics Letters B Journal, Vol. 23. No. 22, pp. 1-8, 2009.

[12] H. Nejat Pishkenari, **A. Meghdari**, "Surface Defects Characterization with Frequency and Force Modulation Atomic Force Microscopy Using Molecular Dynamics Simulations", **Current** Applied Physics Journal, Vol. 10, **August 2009**.

[13] A. Selk Ghafari, **A. Meghdari**, and G. R. Vossoughi, "Estimation of the Human Lower Extremity Musculoskeletal Conditions during Backpack Load Carrying", **Scientia Iranica: Int. Journal of Science & Engineering, Transaction on Mechanical Engineering**, Accepted for Publication, **April 2009**.

[14] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri, "Qualitative Study of Nanocluster Positioning Process: Planar Molecular Dynamics Simulations", Current Applied Physics Journal, Vol. 9, pp. 997-1004, 2009.

[15] A. Selk Ghafari, **A. Meghdari**, and G. R. Vossoughi, "Forward dynamics simulation of human walking employing an iterative feedback tuning approach", **Proc. of IMechE, Part I, Journal of Systems and Control Engineering**, Vol. 223, No. 2, pp. 289-297, **2009**.

[16] A. Ghaffari, A. Meghdari, D. Naderi, S. Eslami, "Enhancement of the tipover stability of mobile manipulators with non-holonomic constraints using an adaptive neuro-fuzzy-based controller", **Proc. of I.Mech.E, Part I: Journal of Systems and Control Engineering**, Vol. 223, No. 2, pp. 201-213, **2009**.

[17] A. Meghdari, S. Sohrabpour, D. Naderi, S. H. Tamaddoni, F. Jafari, H. Salarieh, "A Novel Method of Gait Synthesis for Bipedal Fast Locomotion", Journal of Intelligent and Robotics Systems, Vol. 53, pp. 101-118, April 2008.

[18] K. G. Oskouei, A. Meghdari, S. Sohrabpour, "Optimal Configuration of Dual Arm Cam-lock Robot Based on Task-Space Manipulability", **ROBOTICA Int. Journal**, pp. 13-18, Vol.27, April 2008.

[19] H. N. Pishkenari, M. Behzad, A. Meghdari, "Nonlinear Dynamic Analysis of Atomic Force Microscopy under Deterministic and Random Excitation", Int. Journal of Chaos, Solitons and Fractals, Vol. 37, pp. 748-762, 2008.

[20] M. Behzad, A. Meghdari, A. Ebrahimi, "A Linear Theory for Bending Stress-Strain Analysis of a Beam with an Edge Crack", Journal of Engineering Fracture Mechanics, Vol. 75, pp. 4695-4705, 2008.

[21] B. Beigzadeh, M. Nili Ahmadabadi, A. Meghdari, A. Akbarimajd, "A Dynamic Object Manipulation Approach to Dynamic Biped Locomotion", Journal of Robotics and Autonomous Systems, Vol. 56, March 2008.

[22] A. Selk Ghafari, **A. Meghdari**, Gh. R. Vossoughi, "Dynamic and Uncertainty Analysis of an Exoskeletal Robot to Assist Paraplegics Motion", **Iranian Journal of Mechanical Engineering**; Transaction of the ISME, Vol. 8, No. 2, pp. 5-25, **March 2008**.

[23] M. Saghafi, A. Meghdari, "Electrical Equivalent Circuit of Multi-Mode Flexible Beams with Piezoelectric Elements", Journal of Intelligent Materials Systems and Structures, Vol. 10,

July 2007.

[24] M. R. Azghani, F. Farahmand, A. Meghdari, G. R. Vossoughi, J. Khamseh, F. Hakkak, M. Parnianpour, "A New Apparatus for Triaxial Measurement of Lumbar Moments in Isometric Mode", Journal of Biomechanics, Vol. 40, No. 2, 2007.

[25] Ali Jafari, Farzam Farahmand, Ali Meghdari, "The Effects of Trochlear Groove Geometry on Patellofemoral Joint Stability – A Computer Study Model", Proc. of I.Mech.E., Part H: Journal of Engineering in Medicine, Vol. 222, pp. 75-88, 2007.

[26] A. Afshari, A. Meghdari, "New Jacobian Matrix and Equations of Motion for a 6 D.O.F. Cable-Driven Robot", Int. Journal of Advanced Robotic Systems, Vol. 4, No. 1, pp. 63-68, March 2007.

[27] A. Ghaffari, A. Meghdari, D. Naderi, S. Eslami, "Design of an Adaptive Neuro-Fuzzy Controller for Increasing Stability of Mobile Manipulators ", Accepted for publication in the Int. Journal of Automation, Robotics, and Autonomous Systems, 2007.

[28] H. Tavakoli Nia, S. H. Alemohammad, S. Bagheri, R. H. Khiabani, A. Meghdari, "Design, Dynamic Analysis and Optimization of a Rover for Rescue Operations", Lecture Notes in Computer Science: RoboCup 2005, Springer Berlin/Heidelberg, Vol. 4020, pp. 290-300, 2006.

[29] A. Meghdari, S. H. Mahboobi, A.L. Gaskarimahalle, "Dynamics Modeling of CEDRA Rescue Robot on Uneven Terrains", Scientia Iranica Int. Journal, Vol. 13, No. 3, pp. 272-283, 2006.

[30] H. Tavakoli Nia, H. N. Pishkenari, **A. Meghdari**, "A Recursive Approach for Analysis of Snake Robots Using Kane's Equations", **ROBOTICA Int. Journal**, Vol. 24, No. 2, pp. 251-256, **2006**.

[31] A. Meghdari, D. Naderi, S. Eslami, "Optimal Stability of a Redundant Mobile Manipulator via Genetic Algorithm", **ROBOTICA Int. Journal**, Vol. 24, pp. 739-743, **2006**.

[32] R. Ravani, A. Meghdari, "Velocity Distribution Profile for Robot Arm Motion using Rational Frenet-Serret Curves", Journal of INFORMATICA, Institute of Mathematics & Informatics, Vol. 17, No. 1, pp. 69-84, 2006.

[33] H. N. Pishkenari, N. Jalili, **A. Meghdari,** "Acquisition of High-precision Images for Noncontact Atomic Force Microscopy", **Journal of MECHATRAONICS**, Vol. 16, pp. 655-664, **2006**.

[34] A. Ghaffari, A. Meghdari, D. Naderi, S. Eslami"Stability Enhancement of Mobile Manipulators via Soft Computing", Int. Journal of Advanced Robotic Systems, Vol. 3, No. 3, pp. 191-198, 2006.

[35] M. Khalaj Amir Hosseini, O. Omidi, A. Meghdari, Gh. R. Vossoughi, "A Composite Rigid Body Algorithm for Modeling and Simulation of an Underwater Vehicle Equipped with Manipulator Arms", ASME Journal of Offshore Mechanics and Arctic Engineering, Vol. 128, pp. 119-132, 2006.

[36] A. Meghdari, H. N. Pishkenari, A. L. Gaskarimahalle, S. H. Mahboobi, R. Karimi, "A Novel

Approach for Optimal Design of a Rover Mechanism", **Journal of Intelligent & Robotics Systems**, Vol. 44, pp. 291-312, **2006**.

[37] A. Jafari, F. Farahmand, A. Meghdari, A. S. Golestanha, "A New Approach to C Continuous Piecewise Bicubic Representation of Articular Surfaces of Diarthrodial Joints", **Proc. of** I.Mech.E.; Part H, Journal of ENGINEERING IN MEDICINE, Vol. 220, pp. 1-11, 2006.

[38] A. Meghdari, R. Karimi, H. N. Pishkenari, A. L. Gaskarimahalle, S. H. Mahboobi, "An Effective Approach for Dynamic Analysis of Rovers", **ROBOTICA Int. Journal**, Vol. 23, pp. 771-780, **2005**.

[39] M. Behzad, A. Meghdari, A. Ebrahimi, "A New Approach for Vibration Analysis of a Cracked Beam", Int. Journal of Engineering, Vol. 18, No. 4, pp. 319-329, 2005.

[40] **A. Meghdari**, D. Naderi, M. R. Alam, "Neural-Network Based Observer for Real-Time Tipover Estimation", **Journal of MECHATRONICS**, Vol. 15, pp.989-1004, **2005**.

[41] A. Meghdari, A. H. Bahrami, "A Biomechanical Model to Analyze Normal, Degenerated, and Fused Cervical Spines Using IAR's Concept", **IRANIAN Journal of Science & Technology**, Transaction B, Vol. 28, No. B4, pp.423-433, **2004**.

[42] A. Meghdari, D. Naderi, M. R. Alam, "Real-Time Compensatory Manipulator Motion Planning for Stabilizing a Mobile Manipulator", Accepted for publication in the Journal of Intelligent & Robotics Systems, October, 2004.

[43] A. Meghdari, M. Aryanpour, "Dynamics Modeling and Analysis of the Human Jumping Process", Journal of INTELLIGENT and ROBOTICS SYSTEMS, Vol. 37, pp. 97-115, 2003.

[44] **A. Meghdari**, M. Afrough, "A Robust Formulation for Calibration of Articulated Robots", ISME Transactions; Journal of Mechanical Engineering, Vol. 3, No. 1, pp. 5-16, **March 2002**.

[45] A. Meghdari, and F. Fahimi,"On the First Order Decoupling of Dynamical Equations of Motion for Elastic Multibody Systems as Applied to a Two-Link Flexible Manipulator", Journal of MULTIBODY SYSTEM DYNAMICS, Vol. 5, No. 1, pp. 1-20, February 2001.

[46] D. Naderi, A. Meghdari, M. Durali, , "Dynamics Modeling and Analysis of a Two D.O.F. Mobile Manipulator", ROBOTICA Int. Journal, March 2001.

[47] A. Meghdari, and F. Fahimi, "First Order Decoupling of Equations of Motion for Multibody Systems Consisting of Rigid and Elastic Bodies", **IRANIAN Journal of Science & Technology**, Vol. 24, No. 3, Transaction B, pp. 333-343, **Summer 2000**.

[48] A. Meghdari, M. Durali, and D. Naderi, "Investigating Dynamic Interactions Between the Manipulator and Vehicle of a Mobile Manipulator", Journal of INTELLIGENT and ROBOTICS SYSTEMS, Vol. 28, pp. 277-290, 2000.

[49] A. Meghdari, and F. Barazandeh, "Design and Fabrication of a Novel Quick-Change System", Int. Journal of MECHATRONICS, Vol. 10, pp. 809-818, 2000.

[50] A. Meghdari, and F. Fahimi, "Dynamics Modeling of Multi-Elastic Body Systems Using Kane's Method and Congruency Transformations", Int. Journal of TECHNISCHE MECHANIK, Band 19, Heft 2, pp. 127-140, June 1999.

[51] A. Meghdari, "Conceptual Design and Dynamics Modeling of a Dual-Arm Cam-Manipulator", **ROBOTICA Int. Journal**, Vol. 14, No. 4, pp.301-309, **May 1996**.

[52] F. Aghili, and **A. Meghdari**, "Mechanical Design of a Modular Arm Prosthesis", **Int.** Journal of ROBOTICS & AUTOMATION, Vol. 10, No. 1, pp. 22-28, February 1995.

[53] A. Meghdari, and M. Ghasempouri, "Dynamics of Flexible Manipulators", Int. Journal of ENGINEERING, Vol. 7, No.1, pp. 19-32, February 1994.

[54] A. Meghdari, R. Davoodi, and F. Mesbah, "Engineering Analysis of Shoulder Dystocia in Human Birth Process By Finite Element Methods", Proc. of I.Mech.E.; Part H, Journal of ENGINEERING IN MEDICINE, Vol.206, pp. 243-250, 1992.

[55] A. Meghdari, H. Sayyaadi, "Optimizing Motion Trajectories in Dexterous Fingers By Dynamic Programming Technique", **ROBOTICA Int. Journal**, Vol.10, pp.419-426, **1992**.

[56] A. Meghdari, M. Mahmoudian, and M. Arefi, "Geometric Adaptability: A Novel Mechanical Design in the Sharif Artificial Hand", Int. Journal of ROBOTICS & AUTOMATION, Vol. 7, No. 2, pp. 80-85, 1992.

[57] A. Meghdari, "A Variational Approach for Modeling Flexibility Effects in Manipulator Arms", ROBOTICA Int. Journal, Vol. 9, pp. 213-217, 1991.

[58] A. Meghdari, "Computer Animation of the PUMA-560 Industrial Robot Kinematics", Int. Journal of MECHANICAL ENGINEERING, IUST Press, Vol. 1, No.2a, pp.111-119, 1990.

[59] **A. Meghdari**, and M. Shahinpoor, "Modeling Flexibility Effects in Robotics Arms Via the Modified 4 x 4 D-H Homogeneous Transformations", **Int. Journal of ENGINEERING**; Vol. 3, No. 3 & 4, pp. 124-133, **1990**.

[60] A. Meghdari, and M. Shahinpoor, "Three-Dimensional Flexural-Joint Stiffness Analysis of Flexible Manipulator Arms", **ROBOTICA Int. Journal**, Vol. 6, pp. 203-212, **1988**.

[61] A. Meghdari, M. Shahinpoor, "Elastic Deformation Characteristics of a PUMA-560 Robot Manipulator", Int. Journal of ROBOTICS & AUTOMATION, Vol. 2, No.1, pp. 26-31,1987.

[62] M. Shahinpoor, and A. Meghdari, "Combined Flexural-Joint Stiffness Matrix and the Elastic Deformation of a Servo-Controlled Two-Link Robot Manipulator", **ROBOTICA Int.** Journal, Vol. 4, pp. 237-242, **1986**.

Scientific Publications in Domestic/National Journals (in Farsi)

[1] A. Meghdari, S. Salahi Moghaddam, " Isn't Friendship Possible between Engineering and Humanities at Iranian Technological Universities?", (in Persian), Iranian Journal of Engineering Education; Iranian Academy of Sciences, Vol. 11, No. 43, Autumn 2009.

[2] A. Meghdari, S. Salahi Moghaddam, "Humanities and Arts: Effective and Essential Agents in Engineering Education", (in Persian) Iranian Journal of Engineering Education; Iranian Academy of Sciences, Vol. 8, No. 33, Spring 2007.

[3] A. Meghdari, F. Amiri, S. H. Mahboobi, A. Lotfi Gaskarimahalle, A. Baghani, H. Nejat Pishkenari, R. Karimi, Y. Khalighi, "Design and Fabrication of "CEDRA" Rescue Robot with Special Capabilities" (in Persian), Sharif Journal of Science & Research, No. 31, pp. 29- 37, Fall 2005.

[4] M.R. Eshraghi, B. Mehri, A. Meghdari, "Analytical Solution of Mass Equation, Nonlinear Spring with Effective Wind Force Under Dynamical Load", (in Persian), Sharif Journal of Science & Research, No. 29, pp. 3-6, Spring 2005.

[5] B. Mehri, A. Meghdari, M.R. Eshraghi, "Analytical Solution of Mass Equation, Nonlinear Spring and Damping with Effective Wind Force Under Dynamical Load", (in Persian), Journal of Faculty of Engineering, University of Tehran, Vol. 39, No. 1, pp. 9-13, May 2005.

[6] D. Naderi, A. Meghdari, M. Durali, "Motion Analysis of a Manipulator Mounted on a Vehicle with Suspension System", Sharif Journal of Science & Research, pp. 3-9, Spring 2004.

[7] M. Nakhaee Nejad, A. Meghdari, D. Naderi, "Dynamic Motion Analysis of a Snake-Like Robot on a Slopped Surface using Nueral Network", Accepted for publication in the Sharif Journal of Science & Research, March 2004.

[8] F. Farahmand, A. Meghdari, R. Narimani, "Modeling of Muscle and Joint Forces at the Knee Joint during Stand up from the Sitting State", (in Persian), Sharif Journal of Science & Research, Vol. 22, pp. 66-72, September 2002.

[9] **A. Meghdari**, and F. Fahimi, "Modeling a Robot with Flexible Joints and Decoupling its Equations of Motion" (in Persian), ESTEGHLAL: Journal of Research in Engineering & **Technology**, Vol. 16, No. 2, pp. 17-28, **March 1998**.

[10] A. Meghdari, and M. Khazraie, "Solving Non-Linear Dynamics Model of Joints in Human Body", (in Persian), AMIRKABIR Journal of Science & Engineering, Vol. 9, No. 36, pp. 471-485, Winter 1998.

[11] **A. Meghdari**, "A Comparative Survey of Higher Education Expenses in Engineering Fields in Developed Countries with Iran", (in Persian), **Sharif Journal of Science & Research**, Vol. 13, No. 4, pp. 24-28, **December 1997**.

[12] A. Meghdari, Gh. R. Vosoughi, A. Sekhavat, "Minimizing the Amplitude of Oscillation of an Object Suspended from the End-Effector of a Robot Manipulator", (in Persian), ESTEGHLAL: Journal of Research in Engineering & Technology, Vol. 14, No.1, pp.57-67, September 1995.

[13] S. A. Fazelzadeh, and **A. Meghdari**, "A Closed-Form Formulation of the Dynamical Equations of N-Axis Planar Manipulators", (in Persian), AMIRKABIR Journal of Science and Engineering, Vol. 8, No. 29, pp. 11-20, **Fall 1995**.

[14] **A. Meghdari**, A. Asghar Asadi, and A. Akbar Asadi, "On the Design of a Robotics Knotting Mechanism to Automate the Traditional Persian Carpet Weaving", (in Persian), **AMIRKABIR** Journal of Science & Engineering, Vol. 8, No. 30, pp. 102-112, Winter 1995.

[15] A. Meghdari, "Design Characteristics of The Dual-Arm Cam-Lock Robot Manipulator", (in Persian), ESTEGHLAL: Journal of Research in Engineering & Technology, Vol. 13, No.1, pp. 1-25, September 1994.

[16] A. Meghdari, M. Jafarian, M. Shahinpoor, and M. Mojarrad, "Polymer Gels and Artificial Muscles; Current Research & Developments", (in Persian), Sharif Journal of SCIENCE & RESEARCH, Vol. 9, No. 4, pp. 49-54, 1993.

[17] A. Meghdari, "Biomedical Engineering: A Multi-disciplinary Challenge", (in Persian), ISME Transactions; Journal of Mechanical Engineering, Vol.1, No. 1, pp. 66-73, 1992.

[18] A. Meghdari, "Dynamics Simulation Algorithms of Industrial Robots", AMIRKABIR Journal of Science and Engineering, Vol. 4, No. 15, pp. 79-90, **1990**.

[19] **A. Meghdari**, M. Arefi, M. Mahmoudian, "Biomechanical Aspects of the Sharif Artificial Hand",(in Persian), PAZHOOHESH: The Journal of Research in Science & Technology, Vol. 9, No. 18, pp. 59-67, **1990**.

Scientific Presentations & Publications in International Conferences

[1] M. Shahinpoor, and A. Meghdari, "Combined Flexural-Joint Stiffness Matrix and the Elastic Deformation of a Servo-Controlled Two-Link Robot Manipulator", 10th U.S. National Congress of Applied Mech., Proc. of Abstracts, F6, June 16-20, 1986, Austin, TX, USA.

[2] A. Meghdari, and B.C. Chiou, "A Comparative Survey of Robot Manipulator Dynamics", Proc. of the 9th IEEE-ISE Conf. & Symp.,pp.50-58, May 5-7, 1987, Albuquerque, NM,USA.

[3] A. Meghdari, C.P. Keddy, T.J. Beugelsdijk, R.F. Ford, "A Systematic Approach to Robotics Testing and Evaluation", Proc. of the ISMM Int. Conference on Computer Applications in Design, Simulation, and Analysis, pp. 161-167, February 1-3, 1988, Honolulu, HI, USA.

[4] A. Meghdari, and M. Shahinpoor, "Generalized Kinematical Analysis of N-Axis Flexible Manipulator Arms Via (4 x 4) Homogeneous Transformations", Proc. of the ANS (American Nuclear Society) 3rd Topical Meeting on Robotics and Remote Systems, Sect.11-5, pp.1-8, March 13-16, 1989, Charleston, SC, USA.

[5] **A. Meghdari**, M. Mahmoudian, M. Arefi, "Kinematics and Dynamics Modeling of the Sharif Artificial Hand", Advances in Bioengineering: Proc. of the 1989 ASME Winter Annual Meeting, pp. 57-58, December 10-15, **1989**, San Francisco, CA, **USA**.

[6] A. Meghdari, "Computer Graphics Simulation of an Industrial Robot", Proc. of the 10th Symp. on Engr. Applications of Mechanics, pp. 371-376, May 27-30, 1990, Kingston, Canada.

[7] A. Meghdari, M. Arefi, and M. Mahmoudian, "Biomechanical Aspects of the Sharif Artificial Hand", Proc. of the IASTED Int. Conf. on Computers and Advanced Tech. in Medicine, Healthcare & Bioengineering, pp. 32-36, August 15-17, 1990, Honolulu, HI, USA.

[8] A. Meghdari, "A Variational Approach for Modeling Flexibility Effects in Manipulator Arms", Proc. of the 16th ASME Design Automation Conference; Advances in Design Automation, DE-Vol. 23-2, pp. 443-448, September 16-19, **1990**, Chicago, IL, **USA**.

[9] A. Meghdari,"On the Performance of a Solar Cooking System Utilizing Compound Parabolic Concentrators", Proc. of the 1st Int. Conference on Energy Conversion and Energy Sources Engineering, pp. 514-521, October 5-8, 1990, Wuhan, China.

[10] A. Meghdari, M. Mahmoudian, M. Arefi, "Geometric Adaptability: A Novel Mechanical Design in the Sharif Artificial Hand", Proc. of the 1991 ASME Applied Mechanics and Biomechanics Symposium, pp. 219-223, June 16-19, **1991**, Columbus, OH, USA.

[11] A. Meghdari, H. Sayyaadi, "Optimization in Trajectory Planning of Multi-Jointed Fingers in Dexterous Hand Designs", Proc. of the **1991 ASME Computers in Engineering Conference**, pp. 496-502, August 18-22, **1991**, Santa Clara, CA, **USA**.

[12] A. Meghdari, "On the Design of Muscle Actuated Elastic Fingers for Artificial Hands", Proc. of the AL-Azhar Engineering 2nd International Conference, Vol. VIII, pp.395-400, December 21-24, 1991, Cairo, Egypt.

[13] A. Meghdari, and R. Davoodi, "Engineering Analysis of Shoulder Dystocia in Human Birth Process by Finite Element Method", Proc. of the 1st Int. Conference on Engineering Applications of Mechanics, pp. 68-76, June 9-12, 1992, Tehran, Iran. Also presented at the 1992 Biomechanics Seminar, Chalmers University of Technology, Gotenburg, Sweden.

[14] A. Meghdari, and S. Raghibi-Zadeh, "Simulation and a Comparative Analysis of Position & Force Control Techniques in Robotics", Proc. of the 4th Int. Symposium on Robotics & Manufacturing, ASME Press, pp.229-237, November 11-13, 1992, Santa-Fe, NM., USA.

[15] A. Meghdari, M. Mojarrad, and M. Shahinpoor, "Exploring Artificial Muscles as Actuators for Artificial Hands", Proc. of the 1993 ASME Design Conf., DE-Vol. 58, pp. 21-26, September 19-22, 1993, Albuquerque, NM.. Also presented at the 1st Joint ASCE/ASME/SES Conf., Proc. of the Abstrtca, pp. 57, June 6-9, 1993, Charlottesville, VA., USA.

[16] A. Meghdari, "Conceptual Design and Characteristics of a Dual-Arm Cam-Lock Manipulator", Proc. of the ASCE SPACE-94; Robotics for Challenging Environment Conference, pp. 140-148, Feb. 26-March 3, 1994, Albuquerque, N.M., USA.

[17] A. Meghdari, "The Cooperative Dual-Arm Cam-Lock Manipulators", Proc. of the IEEE Int. Conf. on Robotics & Automation, Vol. 2, pp.1279-1285, May 8-13,1994, San-Diego, CA, USA.

[18] A. Meghdari, and F. Aghili, "Mechanical Design of a Modular Arm Prosthesis", Proc. of the 1994

IEEE-EMBS Engineering in Medicine & Biology Conference, Vol. 1, pp. 484-485, November 3-6, **1994**, Baltimore, MD., **USA**.

[19] M.H. Kargarnovin, S. Sarjami, A. Meghdari, and E. Akhavan Niaki, "Computer Simulation of Installing an Orthodontic Appliance on Teeth", Proc. of the **1995 CANCAM Conference**, Vol. 2, pp. 750-751, May 28-June 2, **1995**, Victoria, BC., **Canada**.

[20] A. Meghdari, and F. Mirfakhraei, "Smart Materials and Structures", (in Persian), Research Proc. of the Sharif University of Technology, pp. 578-600, January 1995, Iran.

[21] A. Meghdari, and A. Sekhavat, "Oscillation-Free Transport of a Suspended Object from the End Effector of a Robot Manipulator", Proc. of the the **1995 IASTED Int. Conf. on Robotics and Manufacturing**, June 14-17, **1995**, Cancun, **Mexico**.

[22] A. Meghdari, and R. Davoodi, "Applying Engineering Tools to Analyze the Human Birth Process", Proc. of the 1995 ASME/AICHE/ASCE Summer Bioengineering Conference, pp. 107-108, June 28-July 2, **1995**, Beaver Creek, CO., **USA**.

[23] S. A. Fazelzadeh, and A. Meghdari, "A Closed-Form Formulation of the Dynamical Equations of N-Axis Planar Manipulators", Proc. of the 4th Int. Conf. on Control, Automation, Robotics and Vision, December 4-6, **1996**, pp. 1830-1835, **Singapore**.

[24] **A. Meghdari**, and F. Fahimi, "Modeling a Robot with Flexible Joints and Decoupling its Equations of Motion", CD-ROM Proc. of the 1997 ASME Design Engineering Technical Conferences, VIB-4209, September 14-17, **1997**, Sacramento, CA., **USA**.

[25] A. Meghdari, and F. Fahimi, "Dynamics Modeling of Elastic Multibody Systems Using Kane's Method as Applied to a Flexible Robot", CD-ROM Proc. of the **1997 ASME Design Engr. Tech.** Conferences, DAC-4004, September 14-17, **1997**, Sacramento, CA., USA.

[26] A. Meghdari, and F. Barazandeh, "Design and Fabrication of a Novel Quick-Change System", Proc. 2nd World Manufacturing Congress (WMC'99), pp. 147-153, Sept. 27-30, 1999, U.K..

[27] A. Meghdari, and F. Fahimi, "A Novel Approach for Decoupling of Dynamical Equations of Flexible Manipulators", CD-ROM Proc. of the **1999 ASME Design Engineering Technical** Conferences, DAC-8556, September 12-15, **1999**, Las Vegas, NV, USA.

[28] A. Meghdari, M. Durali, and D. Naderi, "Investigating Dynamic Interactions Between the Manipulator and Vehicle of a Mobile Manipulator", Proc. of the **1999 ASME Int. Mechanical Engineering Conference**, DE-Vol. 101, pp. 61-67, Nov. 14-19, **1999**, Nashville, TN, **USA**.

[29] A. Meghdari, M. Durali, D. Naderi, "Kinematics & Dynamics Analysis of a Planar Mobile Manipulator", Accepted for presentation at the 4th World Automation Congress, WAC-2000, June 11-15, 2000, Maui, HI, USA.

[30] D. Naderi, A. Meghdari, M. Durali, , "Dynamics Modeling and Analysis of a Two D.O.F. Mobile Manipulator", CD-ROM Proc. of the ASME 2000 Design Engineering Technical Conferences, MECH-14164, September 10-13, 2000, Baltimore, Maryland, USA.

[31] A. Meghdari, M. S. Sadeghipour, A. Khanicheh, and A. Tehranian, "Dynamic Modeling and Analysis of an Underwater Manipulator", CD-Rom Proc. of the ASME IMECE Congress, FED, November 20-26, 2001, New York, USA. (Received: ASME's Best Student Paper Award).

[32] A. Meghdari, G. R. Vossoughi, M. Amir-Hosseini, "Modeling and Simulation of an Underwater Vehicle Equipped with a Manipulator Arm", Proc. of the IASTED Int. Conf. On Applied Simulation and Modeling, pp. 162-167, June 25-28, 2002, Crete, Greece. Also presented at the 6th ISME Int. Mechanical Engineering Conference, May 24-28, 2002, Tehran, Iran.

[33] N. Sadati, A. Meghdari, N. Dadkhah Tehrani, "Optimal Tracking Neuro-Controller in Satellite Attitude Control", Proc. IEEE Int. Conference on Industrial Technology, December 11-14, 2002, Bangkok, Thailand.

[34] A. Meghdari, M. Aryanpour, "Dynamics Modeling and Analysis of the Human Jumping Process", CD-Rom Proc. Of the ASME-IMECE Congress, DSC, November 17-22, 2002, New Orleans, Louisiana, USA.

[35] A. Meghdari, G. R. Vossoughi, M. Amir Hosseini, "An Articulated Body Algorithm for Modelling and Simulation of an Underwater Vehicle Equipped with Manipulator Arm", CD-Rom Proc. of the ASME 2003 International Design Engineering Technical Conferences and the Computers and Information in Engineering Conference (DETC'03), September, 2003, Chicago, IL., USA.

[36] A. Meghdari, D. Naderi, M.R. Alam, "Tipover Stability Estimation for Autonomous Mobile Manipulators Using Neural Network", CD-Rom Proc. Japan-USA Symposium on Flexible Automation (JUSFA), July 19-21, 2004, Denver, Colorado, USA.

[37] G. R. Vossoughi, A. Meghdari, H. Borhan, "Dynamics Modeling and Robust Control of an Underwater ROV Equipped with a Robotic Manipulator Arm", CD-Rom Proc. Japan-USA Symposium on Flexible Automation (JUSFA), July 19-21, 2004, Denver, Colorado, USA.

[38] A. Meghdari, H. Hosseinkhannazer, A. Selkghafari, "An Optimum Design and Simulation of an Innovative Mobile Robotic Nurse Unit to Assist Paraplegic Patients" CD-Rom Proc. IEEE-ICM Int. Conference on Mechatronics, June 3-5, 2004, Istanbul, Turkey.

[39] R. Ravani, A. Meghdari, B. Ravani, "Robot Trajectory Planning using Rotational Frenet-Serret Curves", CD-Rom Proc. of the 7th Biennial ASME Conference on Engineering Systems Design and Analysis (ESDA), July, 2004, Manchester, UK.

[40] **A. Meghdari**, S. H. Mahboobi, A.L. Gaskarimahalle, "Modeling of CEDRA Rescue Robot on Uneven Terrains", Proc. of the 2004 ASME International Mechanical Engineering Congress, Anaheim, CA, **USA**.

[41] A. Meghdari, R. Karimi, H.N. Pishkenari, A.L. Gaskarimahalle, S. H. Mahboobi, "An Effective Approach for Dynamic Analysis of Rovers", Proc. of the 7th Biennial ASME Conference on Engineering Systems, Design and Analysis (ESDA), July 2004, Manchester, UK.

[42] M. Khalaj Amir Hosseini, M. Banae, **A. Meghdari**, "A Composite Rigid Body Algorithm for Modeling and Simulation of an Underwater Vehicle Equipped with Manipulator Arms", **Proc. of** OMAE04 23rd Int. Conf. on Offshore Mechanics and Arctic Engineering, June 2004, Vancouver,

B.C., Canada.

[43] A. Selk Ghafari, M. Behzad, A. Meghdari, "Experimental Investigation on the Effects of Random Signals on Micro-Step Control Positioning Accuracy", **Proc. of MECHATRONICS2004: The 9th** Mechatronics Forum Int. Conference, pp. 477-485, August 2004, Ankara, Turkey.

[44] **A. Meghdari**, D. Naderi, S. Eslami, "Stability Analysis of Mobile Manipulator Using Genetic Algorithm Approach", Proc. of the 1st International Conference on Modeling, Simulation, and Applied Optimization, Sharjah, , February 1-3, **2005**, **U.A.E.**.

[45] A. Meghdari, M. Nakhaei Nejad, D. Naderi, S. Eslami, "Motion Planning of a 10 DOF Snake Robot by Neural Network", Proc. of the 1st International Conference on Modeling, Simulation, and Applied Optimization, Sharjah, February 1-3, **2005**, U.A.E.

[46] A. Meghdari, H. Hosseinkhannazer, A. Selkghafari, "Optimization and Dynamic Simulation of a Nurse Robot in Hospital Environments using Genetic Algorithm" CD-Rom Proc. 2nd Int. Conf. on Autonomous Robots and Agents, December 13-15, **2004**, Palmerston North, New Zealand.

[47] A. Meghdari, S. Sohrabpour, S.A. Nezamoddini, E.F. Izadi, S.H. Tamaddoni, "Dynamics Modeling of a Humanoid Robot", CD-Rom Proc. of the ASME 2005 International Design Engineering Technical Conferences and the Computers and Information in Engineering Conference (DETC'05), September 24-28, 2005, Long Beach, CA., USA.

[48] H. N. Pishkenari, N. Jalili, A. Alasty, and A. Meghdari "Non-Linear Dynamics Analysis and Chaotic Behavior in Atomic Force Microscopy", CD-Rom Proc. of the ASME 2005 Int. Design Engineering Technical Conferences and the Computers and Information in Engineering Conference (DETC'05), September 24-28, 2005, Long Beach, CA., USA.

[49] M. Behzad, A. Meghdari, A. Ebrahimi, "A Continuous Model for Forced Vibration Analysis of a Cracked Beam", CD-Rom Proc. of the 2005 ASME International Mechanical Engineering Congress, Orlando, FL, November 5-11, 2005, USA.

[50] A. Selk-Ghafari, A. Meghdari, "Robust Backstepping Control of Robotic Nurse Unit to Assist Paraplegic Patients", CD-Rom Proc. of the 2005 ASME Int. Mechanical Engineering Congress, Orlando, FL, November 5-11, 2005, USA.

[51] H. N. Pishkenari, N. Jalili, A. Meghdari, "Acquisition of High Precision Images for Noncontact Atomic Force Microscopy via Direct Identification of Sample Height", CD-Rom Proc. of the 2005 ASME Int. Mechanical Engineering Congress, Orlando, FL, Nov. 5-11, 2005, USA.

[52] A. Jafari, F. Farahmand, A. Meghdari, "Surface Modeling of Complicated Geometries with Incomplete Erroneous Data Point-An Extension to B-Spline Approach", **Proc. of the 2005 IEEE Int.** Engineering in Medicine and Biology 27th Annual Conference, September 1-4, 2005, Shanghai, China.

[53] A. Meghdari, H. N. Pishkenari, A. L. Gaskarimahalle, S. B. Ghaemi Oskouei, "An Applied form of Kane's Equations of Motions", CD-Rom Proc. of the ASME 2005 Int. Design Engineering Technical Conferences and the Computers and Information in Engineering Conference (DETC'05), September 24-28, 2005, Long Beach, CA., USA.

[54] A. Ghaffari, A. Meghdari, D. Naderi, S. Eslami, "Planning of Dynamic Compensation Manipulator Motions for Stability Enhancement of Mobile Manipulators by Soft Computing", CD-Rom Proc. of the 2006 ASME Int. Mech. Engr. Congress, Chicago, IL., November 5-10, 2006, USA.

[55] A. Meghdari, S. Sohrabpour, K. G. Osgouie, "Optimal Configuration of a Planar Dual Arm System Based on Task-Space Manipulability", **CD-Rom Proc. of the 2006 ASME International Mechanical Engineering Congress**, Chicago, IL., November 5-10, **2006**, **USA**.

[56] F. Amiri, S. H. Mahbbobi, H. N. Pishkenari, **A. Meghdari**, "Modal Analysis of Metallic Nanocantilever with FCC Lattice using Atomic Approximation Method", **CD-Rom Proc. of the 2006 ASME International Mechanical Engineering Congress**, Chicago, IL., November 5- 10, **2006**, **USA**.

[57] S. H. Mahbbobi, A. Abedian, A. Shahidi, A. Meghdari, "Closed-Loop Finite Element Modeling for Analysis of Smart Structures in ANSYS Environment", CD-Rom Proc. of the 2006 ASME Int. Mechanical Engineering Congress, Chicago, IL., Nov. 5-10, 2006, USA.

[58] H. N. Pishkenari, M. Behzad, A. Meghdari, "Nonlinear Dynamic Analysis of Atomic Force Microscopy under Deterministic and Random Excitation", CD-Rom Proc. of the 2006 ASME International Mechanical Engineering Congress, Chicago, IL., November 5-10, 2006, USA.

[59] A. Meghdari, S. H. Tamaddoni, F. Jafari, "Synthesis of a Compensated Kick Pattern for Humanoid Robots using Conservation Laws", **CD-Rom Proc. of the 2006 ASME International Mechanical Engineering Congress,** Chicago, IL., November 5-10, **2006**, **USA**.

[60] A. Afshari, A. Meghdari, "New Form of Jacobian Matrix and Equations of Motion for a 6 D.O.F. Cable-Driven Parallel Robot using Constrained Variables", **Proc. of the 2006 17**th International DAAAM Symposium, November 8-11, 2006, Vienna, Austria.

[61] B. Beigzadeh, M. N. Ahmadabadi, A. Meghdari, "Kinematical and Dynamic Analysis of Biped Robots' Locomotion using Dynamic Object Manipulation Approach", Proc. of the ESDA 2006, 8th Biennial ASME Conference on Engineering Systems Design and Analysis, July 4-7, 2006, Torino, Italy.

[62] B. Beigzadeh, M. Nili AhmadAbadi, A. Meghdari, "Dynamic Object Manipulation (DOM) of a Sphere Using Two Manipulators", Proc. of ICMA 2006, IEEE International Conference on Mechatronics and Automation, June 25-28, 2006, Luoyang, Henan, China.

[63] B. Beigzadeh, M. Nili AhmadAbadi, A. Meghdari, "Duality of Dynamic Locomotion and Dynamic Object Manipulation", Proc. of Dynamic Walking 2006 (mechanics and control of human and robot locomotion), May 6-8, 2006, Ann Arbor, MI, USA.

[64] A. Selk Ghafari, A. Meghdari, G.R. Vossoughi, "Intelligent Control of Powered Exoskeleton to Assist Paraplegic Patients Mobility using Hybrid Neuro-Fuzzy ANFIS Approach", Proc. of IEEE International Conference on Robotics and Biomimetics, Dec. 17-20, 2006, Kunming, China.

[65] S. H. Tamaddoni, A. Alasti, A. Meghdari, S. Sohrabpour, H. Salarieh, "Spring-Mass Jumping of Underactuated Biped Robots", CD-Rom Proc. of the ASME 2007 Int. Design Engineering Technical Conferences (IDETC'2007), September 4-7, 2007, Las Vegas, NV, USA.

[66] M. Saghafi, N. Jalili, A. Meghdari, "Nonlinear Modeling of Piezoelectric Layered Beams", Proc. of SPIE: *The International Society for Optical Engineering*, Vol. 6525, April 2007, USA.

[67] B. Beigzadeh, A. Meghdari, Y. Beigzadeh, "Dealing with Biped Locomotion as a Dynamic Object Manipulation Problem: Manipulating of Body using Legs", **Proc. of IMECE 2007, ASME International Mechanical Engineering Congress and Exposition**, November 11-15, 2007, Seattle, Washington, USA.

[68] B. Beigzadeh, A. Meghdari, Y. Beigzadeh, "Dynamic Manipulation of Objects Using Multiple Manipulators", Proc. of IMECE 2007, ASME International Mechanical Engineering Congress and Exposition, November 11-15, 2007, Seattle, Washington, USA.

[69] P. Zandiyeh, C. Lucas, M. T. Ahmadian, A. Meghdari, "Comparison of Different Artificially Intelligent Systems for Visual Crack Recognition/Classification". Proc. of the ASME International Mechanical Engineering Congress and Exposition, IMECE 2007, November 11- 15, 2007, Seattle, Washington,. USA.

[70] A. Selk Ghafari, A. Meghdari, G.R. Vossoughi, "Modeling of Human Lower Extremity Musculoskeletal Structure using Bond-Graph Approach", **Proc. of ASME International** Mechanical Engineering Congress and Exposition, November 11-15, 2007 Seattle, Washington, USA.

[71] A. Selk Ghafari, A. Meghdari, Gh. R. Vossoughi, "The Effect of Load Carrying on the Human Lower Extremity Muscle Activation During Walking", CD-Rom Proc. of the 5th Int. Symp. On Mechatronics and its Applications (ISMA08) Engineering Congress, May 27-29, 2008, Amman, Jordan.

[72] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri, "Two-Dimensional Atomistic Simulation of Metallic Nanoparticles Pushing", CD-Rom Proc. of the 5th Int. Symp. On Mechatronics and its Applications (ISMA08) Engineering Congress, May 27-29, 2008, Amman, Jordan.

[73] H. Nejat Pishkenari, A. Meghdari, "Adaptive Backstepping Control of Uncertain Lorenz System", CD-Rom Proc. of the 5th Int. Symp. On Mechatronics and its Applications (ISMA08) Engineering Congress, May 27-29, 2008, Amman, Jordan.

[74] K. G. Osgouie, A. Meghdari, S. Sohrabpour, "Optimal Task-Space Manipulability of Hybrid 4-DOF Dual-Arm Cam-Lock Manipulators", CD-Rom Proc. of the 5th Int. Symp. On Mechatronics and its Applications (ISMA08) Engineering Congress, May 27-29, 2008, Amman, Jordan.

[75] A. Selk Ghafari, A. Meghdari, Gh. R. Vossoughi, "The Effect of Load Carrying on the Human Lower Extremity Muscle Activation During Walking", CD-Rom Proc. of the 5th Int. Symp. On Mechatronics and its Applications (ISMA08) Engineering Congress, May 27-29, 2008, Amman, Jordan.

[76] H. Nejat Pishkenari, A. Meghdari, A. E. Hosseini, "Determination of Mechanical Properties of FCC Nano-Beams Based on Molecular Dynamics Simulations", CD-Rom Proc. of the 5th Int. Symp. On Mechatronics and its Applications (ISMA08) Engineering Congress, May 27-29, 2008, Amman, Jordan.

[77] A. Selk Ghafari, A. Meghdari, Gh. R. Vossoughi, "Prediction of the Lower Extremity Muscle Forces During Stair Ascent and Descent", CD-Rom Proc. of the ASME 2008 Int. Design Engineering Technical Conferences (IDETC'2008), August 3-6, 2008, Brooklyn, NY, USA.

[78] A. Shariati, A. Meghdari, and P. Shariati, "Intelligent Control of an IPMC Actuated Manipulator using Emotional Learning-Based Controller", **Proc. of the SPIE Conferences, Vol. 70291J (2008)**, August 10, **2008**, San Diego, CA, **USA**.

[79] M. Shahi, A. Meghdari, "On the Design of Robotic Fish Based on Lighthill's Small-Amplitude Elongated Body Theory", CD-Rom Proc. of the ASME 2008 Int. Mechanical Engineering Congress and Exposition (IMECE'2008), October 31-November 6, 2008, Boston, MA, USA.

[80] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri, "Qualitative Study of Nanocluster Positioning Process: 2D Molecular Dynamics Simulations", CD-Rom Proc. of the 2008 ASME Int. Mechanical Engineering Congress and Exposition (IMECE2008), November 1-6, 2008, Boston, M.A., USA.

[81] M. Shahi, A. Meghdari, "On the Design of Robotic Fish Based on Lighthill's Small-Amplitude Elongated Body Theory", CD-Rom Proc. of the 2008 ASME Int. Mechanical Engineering Congress and Exposition (IMECE2008), November 1-6, 2008, Boston, M.A., USA.

[82] S. Radmard, M. Honarvar, A. Alasty, A. Meghdari, H. Zohoor, "Position Control of Ionic Polymer-Metal Composites using Fuzzy Logic", CD-Rom Proc. of the 2008 ASME Int.
Mechanical Engineering Congress and Exposition (IMECE2008), November 1-6, 2008, Boston, M.A., USA.

[83] M. Mansouri Boroujeni, A. Meghdari, "Haptic Device Application in Persian Calligraphy", Proc. of the IEEE Int. Conf. on Computer and Automation Engr.", pp. 160-164, Spring 2009. Taiwan.

[84] S. H. Mahboobi, **A. Meghdari,** N. Jalili, "Molecular Dynamics Study of Success Evaluation for Metallic Nanoparticles Manipulation on Gold Substrate", **CD-Rom Proc. of the ASME 2009 Int.** Design Engineering Technical Conferences (IDETC'2009), August 30-September 2, 2009, San Diego, CA, **USA.**

[85] H. Nejat Pishkenari, A. Meghdari, "Simulations of Surface Defects Characterization using Force Modulation Atomic Force Microscopy", CD-Rom Proc. of the ASME 2009 Int. Design Engineering Technical Conferences (IDETC'2009), August 30-September 2, 2009, San Diego, CA, USA.

[86] H. Nejat Pishkenari, A. Meghdari, "Molecular Dynamics Simulation of NC-AFM Surface Vacancy Characterization: Influence of Temperature", **Proc. 22nd International Microprocesses and** Nonotechnology Conference (MNC-2009), November 2009, Sapporo, Japan.

[87] H. Babahosseini, M. Khorsand, A. Meghdari, A. Alasty, "Optimal Sliding Mode Control of AFM Tip Vibration and Position During Manipulation of a Nanoparticle", **Proc. of the ASME 2009** Int. Mechanical Engineering Congress & Exposition (IMECE-2009), November 13-19, 2009, Lake Buena Vista, Florida, **USA**.

[88] H. Babahosseini, S. H. Mahboobi, A. Meghdari, "Dynamics Modeling of Nanoparticle in AFM-

Based Manipulation using Two Nanoscale Friction Models", **Proc. of the ASME 2009 Int.** Mechanical Engineering Congress & Exposition (IMECE-2009), November 13-19, 2009, Lake Buena Vista, Florida, USA.

[89] S. H. Mahboobi, A. Meghdari, N. Jalili, F. Amiri "Precise Assembly of Metallic Nanoclusters as Building Blocks of Nanostructures: A Molecular Dynamics Study", **CD-Rom Proc. of the ASME 2010** Int. Design Engineering Technical Conferences (IDETC'2009), August 15-18, 2010, Montreal, Canada.

[90] B. R. Sahraei, A. Nemati, M. Farshchi, A. Meghdari, "Adaptive Fuzzy Sliding Mode Control Approach for Swarm Formation Control of Multi-Agent Systems", CD-Rom Proc. of the ASME 2010 10th Biennial Int. Conf. on Engr. Syst. Design & Analysis (ESDA 2010), July 12-14, 2010, Istanbul, Turkey.

Scientific Publications in Domestic/National Confercences

[1] **A. Meghdari**, "On the Establishment of the First Robotics and CAD/CAM Research Labs in Iran", (in Persian), Sharif University of Technology Research Proc., pp.104-106, 1989, Iran.

[2] M. Arefi, M. Mahmoudian, and **A. Meghdari**, "Biological Studies of the Human Hand", (in Persian), Proc. of the 1st National Conference on Research and Developments in Biomedical Engineering, January 3-4, **1990**, Tehran, **Iran**.

[3] A. Meghdari, "Elastic Manipulators Actuated by Pneumatic Muscles", Proc. of IASTED Int. Conference in Control and Modeling, pp.484-487, July 17-20, 1990, Tehran, Iran.

[4] **A. Meghdari**, and M. Salehi, "General Impact of Robotics and Automation in Radiation Environment", Proc. of the **Int. Conference on High Levels of Natural Radiation**, MS-110-P1/3, pp. 1-10, November 3-7, **1990**, Ramsar, **Iran**.

[5] A. Meghdari, and R. Davoodi, "Computer Application in the Analysis of Shoulder Dystocia", Proc. of Abstracts; 1st Int. Conference on Computer Applications in Science, Technology and Medicine, pp. 22-23, December 26-28, 1991, Isfahan, Iran.

[6] A. Meghdari, and M. Ghasempouri, "Dynamics Simulation of Flexible Manipulators by Lagrangian & Finite Element Methods", Proc. of the 1st Int. Conference on Engineering Applications of Mechanics, pp. 282-297, June 9-12, 1992, Tehran, Iran.

[7] M. J. Asadi, A. Meghdari, "Role of Engineers in Hospitals Operation", Proc. of the 1st Int. Conf. on Engr. Appl. of Mechanics, pp. 106-112, June 9-12, **1992**, Tehran, Iran.

[8] S. Raghibi-Zadeh, and A. Meghdari, "Design and Fabrication of an I/O Interface Board for Control Applications Utilizing IBM-PC'S", (in Persian), Proceedings of the 2nd Annual AZARAB Engineering Conference, pp. 285-296, August 21-23, 1992, Arak, Iran.

[9] A. Meghdari, M. Jafarian, M. Shahinpoor, and M. Mojarrad, "Polymer Gels and Artificial Muscles; A Bioengineering Overview", (in Persian), Proc. of the 5th Biomedical Engineering Seminar, pp.78-88, January 5-7, 1993, Tehran, Iran. [10] **A. Meghdari**, A. Akbar Asadi, and A. Asghar Asadi, "Conceptual Design of a Robotics Knotting Mechanism to Automate the Traditional Persian Carpet Weaving", (in Persian), **Research Proc.** of the Sharif University of Technology, pp. 601-619, **1995**, **Iran**.

[11] F. Fahimi, A. Meghdari, B. Ravani, "A Method for Decoupling of the Equations of Motion of Multi-Rigid-Body Systems", (in Persian), Proc. of the 4th Annual ISME Mechanical Engineering Conference, May 14-17, **1996**, pp. 707-715, Shiraz, Iran.

[12] A. Meghdari, and A. A. Mahdavi-Jalal, "Minimizing Amplitude of Oscillation of a Flexible Beam During Transport by a Robot", Proc. of the 5th Annual ISME Mechanical Engineering Conf., 1997, Tabriz, Iran.

[13] A. Meghdari, F. Barazandeh, "Design and Fabrication of a Series of Modular Robotics Grippers Equipped with a Quick Change System", (in Persian), Proc. of the 1st Annual Seminar on Robotics, Automation & Control, May 20-21, **1998**, pp.207-222, Tabriz, **Iran**.

[14] A. Meghdari, M. Durali, D. Naderi, "Kinematics & Dynamics Modeling and Analysis of a 1-DOF Mobile Manipulator Attached on a Moving Base", (in Persian), Proc. of the 7th Annual ISME Conf., April 14-16, 1999, Vol. 3, pp. 1327-1337, Zahedan, Iran.

[15] A. Meghdari, M. Afrough, "Calibration of a 5-DOF Manipulator Using an Adapted Kalman Filter", Proc. of the 5th Int. & 9th ISME Annual Mechanical Engineering Conf., May 27-29, 2001, Iran.

[16] A. Meghdari, A. A. Forough-Nasiraei, R. Narimani, "On the Design, Simulation, and Fabricaton of a Hospital Robot-Nurse", Proc. of the 5th Int. & 9th ISME Annual Mechanical Engineering Conf., May 27-29, **2001**, Guilan, **Iran**.

[17] A. Jafari, A. Meghdari, F. Farahmand, "A Novel Approach to Curve-Fit Measured Data for the Surface Geometry of a Joint", Proc. of the 11th ISME Annual Mechanical Engineering Conf., May, 2003, Iran.

[18] M. Nakhaee Nejad, A. Meghdari, D. Naderi, "Modeling and Dynamics Analysis of Snake-Like Robot Manipulators", Proc. of the 11th ISME Annual (International) Mechanical Engineering Conf., Vol. 4, pp. 2026-2033, May, **2003**, **Iran**.

[19] G. R. Vossoughi, **A. Meghdari**, H. Borhan, "Dynamics Modeling and Controller Design of an UROV Equipped with a Two-Link Arm", Proc. of the 11th ISME Annual (International) Mechanical **Engineering Conf.**, Vol. 4, pp. 1998-2006, May, **2003**, **Iran**.

[20] R. Ravani, A. Meghdari, B. Ravani, "Robot Trajectory Planning by Spherical and Spatial Rational Motions", Proc. of the 11th ISME Annual (International) Mechanical Engineering Conf., Vol. 6, pp. 533-539, May, **2003**, Iran.

[21] R. Ravani, A. Meghdari, B. Ravani, "Architecture of Distributed Robotics Framework for Univesal Access", Proc. of the 11th ISME Annual (International) Mechanical Engineering Conf., Vol. 6, pp. 541-547, May, **2003**, Iran.

[22] M. R. Alam, A. Meghdari, D. Naderi, "Optimally Stable Mobile Manipulator Path Planning Using Genetic Algorithm", Proc. of the 11th ISME Annual (International) Mechanical Engineering Conf.,

Vol. 6, pp. 548-555, May, 2003, Iran.

[23] R. Ravani, A. Meghdari, B. Ravani, "Rotation Minimizing Frames and Frenet Serret Frames of Spatial Curves", CD-Rom Proc. of the 8th ISME International Mechanical Engineering Conf., April, 2004, Iran.

[24] M.R. Eshraghi, F. Samiee, A. Meghdari, "Wear Analysis of a Gearbox using Oil Analysis", CD-Rom Proc. of the 12th ISME Annual Mechanical Engineering Conf., April, 2004, Iran.

[25] A. Meghdari, F. Amiri, S.H. Mahboobi, A. Lotfi, A. Baghani, H.N. Pishkenari, R. Karimi, Y. Khalighi, "Design and Fabrication of a Mobile Robot for Rescue Applications", CD-Rom Proc. of the 12th ISME Annual Mechanical Engineering Conf., April, 2004, Iran.

[26] R. Ravani, A. Meghdari, B. Ravani, "Variational Smooth Motion Design using Machine Vision Registration", CD-Rom Proc. of the 8th ISME International Mechanical Engineering Conf., April, 2004, Iran.

[27] M. Nakhaee Nejad, A. Meghdari, D. Naderi, "Dynamic Motion Analysis of a Snake-Like Robot on a Slopped Surface using Nueral Network", CD-Rom Proc. of the 12th ISME Annual Mechanical Engineering Conf., April, 2004, Iran.

[29] A. Kiapour, **A. Meghdari**, M. Parnianpour, "Modeling and Analysis of Spine Muscles in Back when Creating Stability at the Presence of External Forces", Proc. of the **11th Iranian Biomedical** Engineering Conf., pp. 1-7, February, 2004, Iran.

[30] A. Meghdari, R. Karimi, H. N. Pishkenari, S. H. Mahboobi, A. L. Gaskarimahalle, "Dynamic Analysis of Rovers using Kane's Approach", Proc. of the 13th Annual (International) ISME Mechanical Engineering Conference, May 2005, Isfahan, Iran.

[31] A. Meghdari, R. Karimi, H. N. Pishkenari, A. L. Gaskarimahalle, S. H. Mahboobi, "An Effective Approach for Dynamic Analysis of Rovers", **Proc. of the 13th Int. Conference of Mechanical Engineering (ISME)**, May 17-19, 2005, Isfahan, Iran.

[32] A. Mirbagheri, F. Farahmand, A. Meghdari, H. Sayyadi, "Optimum Ergonomic Design of Robot Mechanism to Assist Laproscopic Surgery" (in Persian), Proc. of the 2006 ISME Mechanical Engineering Conference, April 2006, Isfahan, Iran.

[33] S. K. Sadrnejad, A. Meghdari, M.R. Deylami, "Design and Fabrication of an Artificial Esfancter using NiTi Shape Memory Alloy" (in Persian), Proc. of the 2006 ISME Mechanical Engineering Conference, April 2006, Isfahan, Iran.

[34] B. Beigzadeh, M. Nili AhmadAbadi, A. Meghdari, "Path Planning and Control of a Dynamic Object Manipulation System" (in Persian), Proc. of the 2006 ISME Mechanical Engineering Conference, April 2006, Isfahan, Iran.

[35] A. Shariati, A. Meghdari, "Applying Neural Networks to Identify IPMC Polymer Composites Artificial Muscle", Proc. of the ISME 2008 Annual Mechanical Engineering Conference, February1-4, 2008, Kerman, Iran.

[36] A. Shariati, A. Meghdari, "Dynamics of a Novel Parallel Mechanism Equipped with IPMC Polymer Composites Artificial Muscles", Proc. of the ISME 2008 Annual Mechanical Engineering Conference, February1-4, 2008, Kerman, Iran.

[37] A. Meghdari, S. Salahi Moghaddam, "Exploring Possibilities of a New Alliance between Humanities and Engineering Education in Iran's Technological Universities", (in Persian), CD-Rom Proc. of the 1st National Conference on Engineering Education in 1404 (2025), University of Tehran, May 12-13, 2009, Iran.

[38] H. Nejat Pishkenari, A. Meghdari, "Investigation of the Temperature Effect on NC-AFM Images using Molecular Dynamics Simulations", Proc. 2nd International Conference on Ultrafine Grained and Nanostructured Materials, University of Tehran, Nov. 14-15, 2009, Tehran, Iran.

[39] A. Selk Ghafari, A. Meghdari, and G. R. Vossoughi, "Contribution of the Muscles at the Ankle Joint during Daily Activities", Proc. of the 17th. Annual (International) Conference on Mechanical Engineering (ISME-2009), May, 2009, University of Tehran, Iran.

[40] A. Selk Ghafari, H. Hosseinkhannazer, A. Meghdari, "Design Optimization of a Robotic Nurse Unit Based on Tipover Avoidance using Differential Evolution Algorithm", **Proc. of 17th. Int.** Conference on Mechanical Engineering (ISME-2009), May, 2009, University of Tehran, Iran.

[41] A. Meghdari, S. Bagheri, V. Yaghoubi, and H. Mohammadi, "Design of a Prototype 3D Flexible Endoscopy System Based on Digital Holography" (in Persian), **Proc. of 18th. Int. Conference on Mechanical Engineering (ISME-2010)**, May, 2010, Sharif University of Technology, **Iran.**

Books and Proceedings

- "Introduction to Robotics: Mechanics and Control", New York: Prentice Hall Pub. Co., By: J. J. Craig, 3rd Edition, 2005.
 Authorized Translation into Persian, By: A. Meghdari, F. Mirfakhraee, M. Akrami, E. Shojaei, S.U.T. Press, Tehran, 1st Print; 2009.
- [2] "Introduction to Robotics: Mechanics and Control", New York: Addison-Wesley Pub. Co., By: J. J. Craig, 2nd Edition, 1989.
 Authorized Translation into Persian, By: A. Meghdari, F. Mirfakhraee, S.U.T. Press, Tehran, 1st Print; 1996, 2nd Print; 1998, 3rd Print 2005.

Proceedings of the "7th Annual ISME Conference", April 14-16, 1999, Zahedan, Iran.

[3] • Volume Three: "Dynamical Systems and Vibration, Biomechanics, and Manufacturing", Edited By: A. Farzad, A. Meghdari, M. Haghpanahi

Proceedings of the "International Conference on Engineering Applications of Mechanics", June 9-12, **1992**, Tehran, **Iran**.

- [4] Volume One: "Biomechanics/Robotics and Manufacturing/Artificial Intelligence/Control", Edited By: A. Meghdari
- [5] Volume Two: "Finite Elements/Vehicle Dynamics/Vibrations/Elasticity/Materials", Edited By: A. Meghdari, E. Esmailzadeh

- [6] Volume Three: "Heat and Mass Transfer/Fluid Mechanics/Energy Conversion", Edited By: M. S. Sadeghipour, M. N. Bahadori, A. Meghdari
- [7] "Elastic Deformation Characteristics and Constitutive Equations of Light-Weight Flexible Manipulators", **By: A. Meghdari**, Publisher: **University Microfilms International**, **1990**, **USA**.

Technical Reports

- "Sharif Artificial Hand: Design and Fabrication", By: A. Meghdari, Technical Report (in Persian), December **1990**, Sharif University of Technology, Tehran, **Iran**.
- "Studies on Dynamics & Control of Flexible Manipulator Arms", By: A. Meghdari, Technical Report (in Persian), June **1992**, Sharif University of Technology, Tehran, **Iran**.
- "Preliminary Studies, Designs, and Fabrication of Artificial Muscles", By: A. Meghdari, Technical Report (in Persian), February **1993**, Sharif University of Technology, Tehran, **Iran**.
- "Smart Materials: Structures and Applications", By: A. Meghdari, Technical Report, AHMCT-TR-9306-01, June **1993**, University of California, Davis, CA., 95616, **USA**.
- "The Dual-Arm Cam-Lock Manipulator", By: A. Meghdari, Technical Report, UCD-ARR-94-01-31-02, January **1994**, University of California, Davis, CA. 95616, **USA**.
- "Telerobotics for Highway Maintenance & Construction", By: A. Meghdari, and B. Ravani, Techical Report, UCD-ARR-94-02-10-01, February **1994**, University of California-Davis, CA.**USA**.
- "Design and Fabrication of a Series of Robotics Grippers Equipped with a Quick-Change **System**", By: A. Meghdari, Technical Report, AMRC-97-10-01-03, October **1997**, Advanced Manufacturing Engineering Research Center, Tehran, **Iran**.
- "On the Economic Dispatch of Loads between Generators in an Electric Power System", By: R. Shoureshi, and A. Meghdari, ACEPS Technical Report, December 17, 1999, Advanced Control of Energy and Power Systems, Division of Engineering, Colorado School off Mines, Golden, CO. 80401, USA.
- "On the Design and Fabrication of an Industrial Rescue Robotics System", By: A. Meghdari, S. Bagheri, F. Amiri, S. H. Mahboobi, Y. Khalighi, H. N. Pishkenari, A. Lotfi, M. Moeini, H.R. Aalemohamad, et. al., Industrial Development and Renovation Organization of Iran (IDRO) & Center of Excellence in Design, Robotics & Automation, Technical Report, November 2004, Iran.
- "On the Design and Fabrication of a 23-DOF Humanoid Robot", By: A. Meghdari, S.A. Nezamaddini, E. Basafa, Z. Heydari, et. al., IranKhodro/TAM Co. & Center of Excellence in Design, Robotics and Automation, Technical Report, August 2004, Iran.
- "Dynamic Modeling and Analysis of Running in Humanoid Robots", By: A. Meghdari, and S. Sohrabpour, Iranian National Science Foundation (INSF), Technical Report, March 2008.

Book Reviews

- Dynamics; By: N. Tabandeh, Tehran University Press, November 1995.
- Vector Dynamics; By: N. Tabandeh, Tehran University Press, June 1996.