



Publications (updated August 2009)

No.	Authors	Title	Publication	Year
2006				
1	Mattos L, Grant E, Thresher R,	Speeding Up Video Processing for Blastocyst Microinjection	Proceed IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China,	2006
2	Mattos L, Grant E, Thresher R	Semi-Automated Blastocyst Microinjection,	Proceed IEEE International Conference on Robotics and Automation, Orlando, FL, USA,	2006
3	Cannella F, Dai J S	Crease Stiffness and Panel Compliance of Carton Folds and Their Integration in Modelling	Journal of Mechanical Engineering Science, Proc IMechE, 220(6): 847-855,	2006
4	Dai J S, Ding X	Compliance Analysis of a Three-Legged Rigidly-Connected Platform Device,	Transactions of the ASME Journal of Mechanical Design, Vol. 128(4): 755-764	2006
5	Dai J S	An Historical Review of the Theoretical Development of Rigid Body Displacements from Rodrigues Parameters to the Finite Twist	Mechanism and Machine Theory, 41(1):41-52	2006
6	Dai S J, Huang Z, Lipkin H	Mobility of Overconstrained Parallel Mechanisms,	Transactions of the ASME Journal of Mechanical Design, 128(1): 220-229	2006
7	Dai J S, Wang D	Differential Geometry Based Analysis and Synthesis of a Multifingered Robotic Hand with a Metamorphic Palm	30th ASME Mechanisms and Robotics Conference, September, 2006, Philadelphia	2006
8	Dubey V N, Dai J S	Packaging Robot for Complex Cartons, Industrial Robot	The International Journal of Industrial and Service Robotics, 33(2):82-87	2006
9	Dubey V N, Dai J S	Complex Carton Packaging with dexterous Robot Hands, Chapter 29, Industrial Robotics: Programming, Simulation and Applications, ed. Low Kin Huat, publ	Pro Literatur Verlag, Germany/ ARS, Austria, ISBN 3-86611-286-6, Dec. 2006	2006
10	Khan M R, Dai J S	Mathematical Analysis of Finger Positions of a Spherical Linkage Metamorphic Robot Palm	Journal of Mechanical Engineering, Transaction of the Mech Eng Div., the Institution of Engineers, Bangladesh, vol. ME36, pp. 18-26	2006
11	Luo z, Dai J S	Geometric Analysis and Characteristics of a Three-Fixed-Pivoted Multi-Phalanx Robotic Finger, Special Issue of Kinematics	Journal of Mechanical Engineering Science, Proc IMechE, 220(7): 1075-1082	2006

No.	Authors	Title	Publication	Year
12	Luo z, Dai J S	Searching for Undiscovered Planar Straight-Line Linkages, in Advances in Robotic Kinematics (ARK)	Mechanisms and Motion, Lenar_i_, J and Roth, B (Eds), Springer, the Netherlands, pp.113-122, ISBN 1-4020-4940-4	2006
13	Niazi A, Dai J S, Balbalani S, Seneviratne L	Product Cost Estimation: Technique Classification and Methodology Review	Transactions of the ASME: Journal of Manufacturing Science and Engineering, 128(2): 563-574,	2006
14	Yao L, Dai J S, Wei G	Error Analysis and Compensation for Meshing Contact of Toroidal Drives	Transactions of the ASME: Journal of Mechanical Design, 128(3): 610-617	2006
15	Yao L, Dai J S, Wei G, Cai Y	Comparative Analysis of Meshing Characteristics with Respect to Different Meshing Rollers of the Toroidal Drive	Mechanism and Machine Theory, 41(7):863-881	2006
16	Yu J, Dai J S, Liu X -J, Bi S, Zong Z	Type Synthesis of 3-DOF Translational Parallel Manipulators Based on Atlas of DOF Characteristic Matrix	30th ASME Mechanisms and Robotics Conference, Philadelphia, USA, DETC2006-99321, September 2006	2006
2007				
1	Davis S, King M G, Casson J W, Gray J O, Caldwell D G	Automated Handling, Assembly and Packaging of Highly Variable Compliant Food Products – Making a Sandwich	Pp 1213-18, ICRA 2007, Rome, Italy, April 2007. Best Paper in Automation (Runner – up)	2007
2	Moreno Masey R J, Caldwell D G	Design of an Automated Handling System for Limp, Flexible Sheet Lasagna Pasta	Pp 1226-31, IEEE ICRA 2007, Rome, Italy, April 2007	2007
3	Kousidou S, Tsagarakis N T, Smith C, Caldwell D G	Task-Orientated Biofeedback System for the Tehabilitation of the Upper limb	10th IEEE International Conference on Rahabilitation Robotics (ICORR '07), June 2007, Noordwijk, The Netherlands	2007
4	Davis S, King M G, Casson J W, Gray J O, Caldwell D G	End Effector Development for Automated Sandwich Assembly	Measurement and Control, Vol. 40, No. 7, pp 202-06	2007
5	Davis S, Gray J O, Caldwell D G	A Non-Contact End Effector based on the Bernoulli Principle for handling of Sliced Tomatoes	Journal of Robotics and Computer Integrated Manufacturing, No. 24 (2), pp. 249-257, Apr 2007	2007
6	Brogni A, Vinayagamoorthy V, Steed A, Slater M.	Responses of Participants During an Immersive Virtual Environment Experience	International Journal of Virtual Reality, 2007, 6, 1-10	2007
7	Caldwell DG, Tsagarakis NG, Kousidou S, Costa N, Sarakoglou Y.	Soft Exoskeletons for Upper and Lower Body Rehabilitation – Design, Control and Testing	International Journal of Humanoids Robotics, vol. 4, no.3, 549-573	2007
8	Davis S, Gray JO, Caldwell DG	An End Effector based on the Bernoulli Princiiple for Handling of sliced Fruit and Vegetables	Industrial Robotics- And International Journal	2007
9	Davis S, King MG, Casson JW, Gray JO, Caldwell DG.	End Effector Development for Automated Sandwich Assembly	Journal of Measurement and Control, vol 40, no.7, pp202-06	2007

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10	Mattos L, Grant E, Thresher R, Kluckman K,	New Developments Towards Automated Blastocyst Microinjections,	Proceedings of the 2007 IEEE International Conference on Robotics and Automation, Rome, Italy	2007
11	Saglia JA, Dai J S.	Geometry and Kinematics Analysis of a Redundantly Actuated Parallel	Proceedings of DETC'07, ASME 2006 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, September 4-7, 2007, Las Vegas, Nevada	2007
12	Srakouglou I, Kousidou S., Tsarakakis N, Caldwell DG	Exoskeleton –Based Exercisers for the Disabilities of the Upper Arm and Hand	Rehabilitation Robotics, pp 499-522, isbn 978-3-902613-01-1	2007
13	Tsagarakis NG, Kousidou S, Caldwell DG.	Case Study: Soft-Exoskeleton for use in Physiotherapy and Training, Wearable Robots	Biomechatronic Exoskeletons	2007
14	Tsagarakis NG, Metta G, Sandini G, Vernon D, Beira R, Becchi F, Righetti ,Victor JS, Ijspeert AJ, Carrozza MC, Caldwell DG	iCub – The Design and Realization of an Open Humanoid Platform for Cognitive and Neuroscience Research	Adv Robotics special issue. Vol 21, No. 10	2007
15	VANDERBORGHT B, VAN HAM R, VERRELST B, VAN DAMME M, LEFEBER D.	Overview of the Lucy-project: Dynamic stabilisation of a biped powered by pneumatic artificial muscles	Advanced Robotics Volume 22, Issue 6-7, Number 10, 2008 , pp. 1027-1051(25)	2007
16	Mattos L	Towards the Automation of Embryonic Stem Cell Microinjections into Blastocysts,	Ph.D. Dissertation, Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, May 2007	2007
17	Dai J S, Wang D	Geometric Analysis and Synthesis of the Metamorphic Robotic Hand	Transactions of the ASME: Journal of Mechanical Design, 129(11): 1191-1197	2007
18	Luo Z, Dai J S	Patterned Bootstrap: A New Method That Gives Efficiency for Some Precision Position Synthesis Problems	Transactions of the ASME: Journal of Mechanical Engineering, 129(2), pp. 173-183	2007
19	Niazi A, Dai J S, Balabani S, Seneviratne L D	A New Overhead Estimation Methodology: A Case Study in an Electrical Engineering Company	Journal of Engineering Manufacture, Proc. IMechE, 221(4): 699-710	2007
20	Rodriguez-Leal E, Dai J S	From Origami to a New Class of Centralized 3-DOF Parallel Mechanisms, DETC2007-35516	31st ASME Mechanisms and Robotics Conference, Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 4-7 September, 2007, Las Vegas, Nevada, USA	2007

No.	Authors	Title	Publication	Year
21	Saglia J, Dai J S	Geometry and Kinematic Analysis of A Redundantly Actuated Parallel Mechanism for Rehabilitation, DETC2007-34938, 31st ASME Mechanisms and Robotics Conference	Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 4-7 September, 2007, Las Vegas, Nevada, USA	2007
22	Wang D, Dai J S	Theoretical Foundation of Metamorphic Mechanisms and Their Synthesis	Chinese Journal of Mechanical Engineering, 43(8): 32-42	2007
23	Yao W, Dai J S	Path Planning for Origami Carton Folding with a Multi-Fingered Robotic System, DETC2007-35542	31st ASME Mechanisms and Robotics Conference, Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 4-7 September, 2007, Las Vegas, Nevada, USA	2007
24	Zhang L, Wang D, Dai J S	Evolution Based Synthesis of Metamorphic Mechanisms, DETC2007-35544, 31st ASME Mechanisms and Robotics Conference	Proceedings of the ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 4-7 September, 2007, Las Vegas, Nevada, USA.	2007
2008				
1	Tsagarakis N G, davis S, Sarakoglu Y, Caldwell D G	Wearable Upper-Limb Exoskeletons and Actuator Technologies	Wearable Robotics: Biomechanics Exoskeletons, J.L. Pons (Ed.), John Wiley & Sons (Feb. 2008), ISBN 978-0470512944	2008
2	Jamshed Iqbal, Seppo Heikkila, Arne Halme	Tether tracking and control of ROSA robotic rover	10th IEEE International Conference on Control, Automation, Robotics and Vision, (ICARCV)	2008
3	Mattos L, Grant E, Thresher R, Kluckman K	From Teleoperated to Automatic Blastocyst Microinjections: Designing a New System from Expert-Controlled Operations,	Proceedings of the 2008 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS2008, September 2008	2008
4	Saglia J, Dai JS, Caldwell D.G.	Geometry and Kinematic Analysis of a Redundantly Actuated Parallel Mechanism that Eliminates Singularity and Improves Dexterity	Journal of Mechanical Design, vol. 130, no. 12, page 124501_1-5, 2008.	2008
5	Saglia J A, Tsagarakis N, Dai J. S, Caldwell D. G.	A High Performance Redundantly Actuated Parallel Mechanism for Ankle Rehabilitation	International Journal of Robotic Research, Special Issue on Medical Robots – in press	2008
6	Semini C, Tsagarakis N.G, Vanderborght B., Yang Y, Caldwell D.G	HyQ - Hydraulically Actuated Quadruped Robot: Hopping Leg Prototype,	IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanics (BioRob), p.593-599, 2008.	2008

No.	Authors	Title	Publication	Year
7	Yang Y.S., Semini C, Tsagarakis N. G, Caldwell D.G, Zhu Y.	Water hydraulics - A novel design of spool-type valves for enhanced dynamic performance	IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), p.1308-1314,	2008
8	Dai J S, Cannella F	Stiffness Characteristics of Carton Folds for Packaging	Transactions of the ASME: Journal of Mechanical Design, vol. 130, no. 2, page 022305_1-7	2008
9	Ding X, Dai J S	Characteristic Equation-Based Dynamics Analysis of Vibratory Bowl Feeders With Three Spatial Compliant Legs	IEEE Transactions on Automation Science and Engineering, vol. 5, no. 1, page 164-175	2008
10	Liu H, Dai J S, Seneviratne L D	A Model-Based Approach to Cooperative Operation of Multirobot Systems	Industrial Robot, vol. 35, no. 1, page 37-45	2008
11	Malik A, Dai J S, Pennock G R	Constraint Redundancy In Mobility Of Parallel Manipulators	32st ASME Mechanisms and Robotics Conference, Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 3-6 August, 2008, New York, DETC2008-49759, USA.	2008
12	Rodriguez-Leal, Dai J S, Pennock G R	A Centralized 5-RSP Parallel Mechanism, 32st ASME Mechanisms and Robotics Conference	Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 3-6 August, 2008, New York, DETC2008-49890, USA.	2008
13	Rodriguez-Leal, Dai J S, Pennock G R	The Duality of Biomimetics and Artiomimetics in the Creative Process of Design, 32st ASME Mechanisms and Robotics Conference	Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 3-6 August, 2008, New York, DETC2008-50035, USA	2008
14	Rodriguez-Leal, Dai J S, Pennock G R	Kinematic Analysis of a New Family of Centralized Parallel Mechanisms	Proceedings of the Second International Workshop on Fundamental Issues and Future Research Directions for Parallel Mechanisms and Manipulators, September 21 – 22, 2008, Montpellier, pp. 57-66, France	2008
15	Saglia J, Dai J S, Caldwell D G	Geometry and Kinematic Analysis of a Redundantly Actuated Parallel Mechanism that Eliminates Singularity and Improves Dexterity	Transactions of the ASME: Journal of Mechanical Design, vol. 130, no. 12, page 124501_1-5, 2008	2008
16	Wei G, Yao L, Cai Y, Dai J S	Latency Errors in the Mathematical Modelling and Meshing Characteristics of the Toroidal Drive	Mathematical and Computer Modelling, vol 47, no 9-10, page 827-854	2008

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17	Yao L, Cai Y, Dai J S	Dexterous Manipulation of Origami Cartons With Robotic Fingers Based on the Interactive Configuration Space	Transactions of the ASME: Journal of Mechanical Design, vol. 130, no. 2, page 022303_1-8	2008
18	Davis S, Moreno Masey R, Gray J O, Caldwell D G	The design of a low cost robot for the food industry	IET Control '08, Manchester, Sept. 2008	2008
19	Davis S, Gray J O, Caldwell D G	A Non-Contact End Effector based on the Bernoulli Principle for handling of Sliced Tomatoes	Journal of Robotics and Computer Integrated Manufacturing, No. 24 (2), p.249-257	2008
20	Caldwell DG, Chua P Y, Amran Z	Soft Actuation for Dexterous Hands - a 23 DOF Anthropomorphic Hand Powered by pneumatic Muscle Actuators (pMA)	Int. J. Modelling, Identification and Control, Vol. 4, No. 4, pp.383-9	2008
21	Tsagarakis N G, Gube M, Caldwell D G	2D motion coordination enhancement for 'Ataxia' impaired users using a haptic device	Proceedings IROS'08, pp. 729-734, Nice France, Sept. 2008	2008
22	Davis S, Tsagarakis N G, Caldwell D G	The Initial Design and Manufacturing Process of a Low Cost Hand for the Robot iCub	IEEE Humanoids 2008, pp. Daejeon, Korea, Dec. 2008	2008
23	Saglia J, Tsagarakis N G, Dai J S Caldwell D G	Inverse Kinematic Control of a Redundantly Actuated Platform for Sprained Ankle Rehabilitation: Control Tuning, Dynamic Response and Actuation Conflicts	Journal of Systems and Control Engineering, pp. 2008	2008
24	Zhang L, D Wang, Dai J S	Biological Modeling and Evolution Based Synthesis of Metamorphic Mechanisms	Transactions of the ASME: Journal of Mechanical Design, vol. 130, no. 7, page 072303_1-11	2008
25	Zhang L, Dai J S	Genome Reconfiguration of Metamorphic Manipulators Based on Lie Group Theory	32st ASME Mechanisms and Robotics Conference, Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 3-6 August, 2008, New York, DETC2008-49906, USA.	2008
26	Zhang L, D Wang, Dai J S	Automated Conceptual Design for Hybrid Mechanisms Based on Characteristic State Space Theory	32st ASME Mechanisms and Robotics Conference, Proceedings of the ASME 2008 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 3-6 August, 2008, New York, DETC2008-49910, USA	2008

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2009				
1	N.G.Tsagarakis, Matteo Laffranchi, Bram Vanderborght, Darwin G. Caldwell	A Compact Soft Actuator Unit for Small Scale Human Friendly Robots	IEEE International Conference on Robotics and Automation Conference (Kobe -Japan)	2009
2	Bram Vanderborght, N.G.Tsagarakis, Claudio Semini, Ronald Van Ham, Darwin G. Caldwell	MACCEPA 2.0: Compliant Actuator used for Energy Efficient Hopping Robot CHOBIN	IEEE International Conference on Robotics and Automation Conference (Kobe -Japan)	2009
3	B. Vanderborght, N. G. Tsagarakis, C. Semini, R. Van Ham, D. G. Caldwell	MACCEPA 2.0: Adjustable Compliant Actuator with Stiffening Characteristic for Energy Efficient Hopping	IEEE-ICRA Conference Proceedings	2009
4	L. Mattos, D. Caldwell	Interface Design for MicroBiomaniplulation and Teleoperation	ACHI Conference Proceedings	2009
5	J. A. Saglia, N. G. Tsagarakis, J. S. Dai, D. G. Caldwell	Inverse-kinematics-based control of a redundantly actuated platform for rehabilitation	Proceedings of the IMechE, Part I: J. of Syst. and Control Eng., Vol. 223, No. 1, pp. 53-70	2009
6	J. A. Saglia, N. G. Tsagarakis, J. S. Dai, D. G. Caldwell	A High Performance 2-dof Over-Actuated Parallel Mechanism for Ankle Rehabilitation	IEEE-ICRA Conference Proceedings	2009
7	J. A. Saglia, N. G. Tsagarakis, J. S. Dai, D. G. Caldwell	A High Performance Redundantly Actuated Parallel Mechanism for Ankle Rehabilitation	International Journal of Robotic Research, to be published on Special Issue on Medical Robotics	2009
8	Nadia Garcia-Hernandez and Vicente Parra-Vega	Haptic Teleoperated Robotic System for an Effective Obstacle Avoidance	IEEE-ACHI Conference Proceedings	2009
9	Ferdinando Cannella and Jian Dai	Origami-Carton Tuck-in with a Reconfigurable Linkage	ACCEPTED: Proc. ASME/IFTOMM International Conference on Reconfigurable Mechanisms and Robots (ReMAR 2009) 22th - 24th June 2009, King's College of London, London, UK	2009
10	Nadia Garcia-Hernandez	Effect of the Tactile Array Density on the Discrimination of Edge Patterns: Implications for Tactile Systems Design	International Conference on Advanced Robotics (ICAR 2009)	2009
11	Nadia Garcia-Hernandez	Haptic Teleoperated Robotic System for an Effective Obstacle Avoidance	Second International Conferences on Advances in Computer-Human Interactions (ACHI 2009)	2009