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Education:

Ph.D., University of Auckland, New Zealand, 1980
DCP, University of Auckland, 1976 .
MSc 1st class honors, University of Auckland, 1975
BSc, University of Auckland, 1974

MIT Service:

1996-Present Hatsopoulos Professor, Department of Mechanical Engineering
1998-2005 Professor of BioEngineering, Division of BioEngineering and Envir. Health
1995-Present Co-director, Information Systems and Technology Laboratory.
1994-1996 Associate Professor, Department of Mechanical Engineering,

Other Related Experience:

1990-1994 Associate Professor, Department of Biomedical Engineering, McGill University.
1990-1995 Fellow, Canadian Institute for Advanced Research (CIAR).
1989-1994 Project Director, Institute for Robotics and Intelligent Systems (IRIS)
1988-1994 Associate Member, Department of Electrical Engineering, McGill University
1986-1994 Member, McGill Research Centre for Intelligent Machines (McRCIM).
1985-1989 Assistant Professor, Department Biomedical Engineering, McGill University
1985-1994 Associate Member, Department of Physiology, McGill University.
1984-1985 Research Fellow, Biomedical Engineering Unit, McGill University.
1980-1981 Faculty of Medicine Post-doctoral Fellow, Biomedical Engineering, McGill Univ.

Partial List of Patents Issued, most recent:

1. Garcia-Webb, M., Hunter, I.W., Taberner, A.J., " Microscopic Dynamic Mechanical Analyzer," US Patent 7,485,100 B2, February 3, 2009.
2. Hunter, I.W., "Measuring Properties of an Anatomical Body," US Patent 7,530,975 B2, May 12, 2009.
3. Brenan, C.J., Hunter, I.W., and Kanigan, T.S., " Methods for Filling a Sample Array by Droplet Dragging," U.S. Patent 7,547,556, June 16, 2009.
4. Hunter, I. Angel, A.B., Hunter, I.W., Proctor, L.L., Tangorra, J., " Impedance Sensor," U.S. Patent No. 7,645,263 B2, January 12, 2010.
5. Angel, A.B., Hunter, I.W., Proctor, L.L., Tangorra, J., " Impedance Sensor," U.S. Patent No. 7,645,263 B2, January 12, 2010.
6. Angel, A.B., Hunter, I.W., " Microneedle Transport Device," U.S. Patent No. 7,651,475, January 26, 2010.
7. Llinas, R. R., Hunter, I.W., Ruddy, B.P. " Conducting Polymer Nanowire Brain-machine Interface Systems and Methods," U.S. Patent 7,818,065 B2, October 19, 2010.
8. Hunter, I.W., Taberner, A.J., Hemond, B.D., Wendell, D.M., Ball, N.B., Hogan, N.C., " Controlled Needle-Free Transport," U.S. Patent 7,833,189 B2, November 16, 2010.
9. Angel, A.B., and Hunter, I.W., Needleless Injector," Canada Patent No. 2,464,954, December 21, 2010.
10. Anderson, R.R., Brenan, C.J., Hunter, I.W., Lim, K.H, and Sebern, E.L., " Microsurgical Laser Scalpel Based on Spectroscopic Feedback: The " Smart Scalpel, " U.S. Patent 7967016, July, 2011.
11. Hunter, I.W. Brenan, C.J., Kanigan, T.S., " Systems for Filling a Sample Array by Droplet Dragging," U.S. Patent 8,029,745 B2, issued October 4, 2011.

Professional Registration:

None

Principal Publications (last five years):

1. David. R., Hunter, I.W., " A Liquid Expansion Microcalorimeter," Journal of Thermal Analysis and Calorimetry, 90, 597-599, 2007.
2. Tangorra, J.L., Anquetil, P.A., Fofonoff, T., Chen, A.Y., Del Zio, M., and Hunter, I.W., " The Application of Conducting Polymers to a Biorobotic Fin Propulsor," Bioinspiration and Biomimetics, 2, S6-S17, 2007.
3. Garcia-Webb, M., Taberner, A., Hogan, N.C., Hunter, I.W., " A Modular Instrument for Exploring the Mechanics of Cardiac Myocytes," American Journal of Physiology: Heart and Circulatory Physiology, Jul:293(1): H866-74 2007. Epub. Feb. 16, 2007.
4. Tangorra, J.L., Davidson, S.N., Hunter, I.W., Lauder, G.V., Madden, P.G., Mittal, R., Dong, H., Bozkurttas, M., " The Development of a Biologically Inspired Propulsor for Autonomous Undersea Vehicles," IEEE Journal of Oceanic Engineering, 32 (3), 533-550, 2007.
5. Forest, C.R., Saez, M.A., Hunter, I.W., " Microforging Technique for Rapid, Low-cost Fabrication of Lens Array Molds," Applied Optics, 46, 8668-8673, 2007.
6. Pytel, R.Z., Thomas, E.L., Hunter, I.W., Chen, Yi, " Anisotropic Actuation of Mechanically Textured Polypyrrole Films," Polymer, 49 (5), 1338-1349, 2008.
7. Ekstrm, P.O., Khrapko. K., Li-Sucholeiki, X.-C., Hunter I.W, Thilly, W.G., " Analysis of Mutational Spectra by Denaturing Capillary Electrophoresis," Nature Protocols, 3 (7) 1153-1166, 2008.

8. Pytel, R.Z., Thomas, E.L., Hunter, I.W., " In-situ Observation of Dynamic Elastic Modulus in Polypyrrole Actuators," *Polymer*, 49 (8), 2008-2013, 2008.
9. Forest, C.R., Woodruff, B., Buckley, D., Thilly, W.G., Hunter, I.W., " Assembly and Constraint Technology for Large Arrays of Capillaries," *Precision Engineering*, 33, 275-283, 2009.
10. Tangorra, J., Lauder, G., Hunter, I., Mittal, R., Madden, P., Bozkurttas, M., " The Effect of Fin Ray Flexural Rigidity on the Propulsive Forces Generated by a Biorobotic Fish Pectoral Fin," *Journal of Experimental Biology* 213, 4034-4054, doi:10.1242/jeb.048017, 2010.
11. Pillai, P.V., Hunter, I.W., and Hernandez, E. "Application of Stochastic System Identification to the Study of the Compliance of Electroactive Polymers," *Review of Scientific Instruments*, 2010, 82 (2) 025103, 6 pp., February 2011.
12. Hemond, B.D., Taberner, A.J., Hogan, N.C., Crane, B., Hunter, I.W., " Development and Performance of a Controllable Autoloading Needle-free Jet Injector," *ASME Journal of Medical Devices*, 5 015001, March 2011, DOI: 10.1115/1.4003330.
13. Chang, J.H. and Hunter, I.W., " A Superhydrophobic to Superhydrophilic In Situ Wettability Switch of Microstructured Polypyrrole Surfaces," *Journal of Macromolecular Rapid Communications*, 32(9-10), 718-723, May 2011.
14. Ruddy, B., and Hunter, I., " Design and Optimization Strategies for Muscle-like Direct Drive Linear Permanent Magnet Motors," *The International Journal of Robotics Research* 30(7): 834-845, 2011.
15. Belden, J., Staats, W., Mazumdar, A., and Hunter, I., "A Portable Air Jet Actuator Device for Mechanical System Identification," *Review of Scientific Instruments*, 82, 035106 pp.1-9, March 2011, DOI: 10.1063/1.3562894.

Scientific & Professional Societies:

American Association for the Advancement of Science Member

Institute of Electronic and Electrical Engineers Member

Biophysical Society Member

American Institute for Medical and Biological Engineering Member

Honors & Awards, Partial List:

1990 Outstanding Young Canadian Biomedical Engineer of the Year Award.

1995 General Motors R& D Academic Research Fellow

1999 Fellow of the American Institute for Medical and Biological Engineering

2003 Honorary Professorship, Bio-Engineering Institute, University of Auckland, New Zealand

2004 Keenan Award for Innovation in Undergraduate Education

2004 Amar Bose Award for Excellence in Teaching

Institutional and Professional Service in the last five years:

1998-Present MIT, Director, BioInstrumentation Laboratory

2007-2008 MIT, Dept. Mechanical Engineering Faculty Search Robotics, Mechatronics, and Controls

2008-Present MIT, Dept. Mechanical Engineering Graduate Program Committee (MEGPC).

2008-Present MIT, Dept. Mechanical Engineering Graduate Policy Committee

2008-Present MIT, Dept. Mechanical Engineering Den Hartog Award Selection Committee

2009-2009 MIT, School of Engineering, Bose Award Selection Committee

2010-2010 MIT, Dept. Mechanical Engineering, Ad Hoc Promotion Committee

2010-2011 MIT, Dept. of Mechanical Engineering, Bioengineering Search Committee

2011-Present MIT, Dept. of Mechanical Engineering, Bioengineering Search
Committee

2011-Present MIT, Dept. Mechanical Engineering, Core Curriculum Study Group

2012-2012 MIT, Dept. Mechanical Engineering Promotion Review Committee

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