

PUBLICATIONS PUBLISHED:

Popular Journals:

1. **Carlos G. Agudelo**, Muthukumaran Packirisamy, Guchuan Zhu, and Lahcen Saydy, "Electrostatic Micromirror Control Beyond Pull-in", PHOTONS, Tech Review of CIPI, Vol 7, No 2, Fall 2009, pp. 26-29.
2. **Davoud Mohammadalizadeh**, Narayanswamy Sivakumar, Muthukumaran Packirisamy, "A new method of temporal phase shifting using acoustic-optic modulated stroboscopic interferometer (AOMSI) for identifying the shape of microstructures due to residual stress", PHOTONS, Tech Review of CIPI, Fall 2008, 6(2), pp 30-33.
3. **Arvind Chandrasekaran** and Muthukumaran Packirisamy, "Microfluidic Lab-on-a-Chip system hybrid integrated with Spectrometer-on-Chip for fluorescence based biodetection" PHOTONS 2008, Tech Review of CIPI, Vol.6, Spring issue 1, pp 31-34.
4. **S. Sokhanvar**, J Dargahi and M. Packirisamy, "Tactile sensor acts as a human finger in minimally invasive surgery", An article appeared in PHYSORG.COM in July 2007.
5. **Ashwin Acharya**, Muthukumaran Packirisamy and Ricardo Izquierdo "Organic excitation based Microfluidic biosensing", PHOTONS Fall 2007, Tech Review of CIPI, pp. 34-37.
6. **Amritsar Jeetender**, Stiharu I. and Packirisamy M., 'MOEMS for Bio-Enzymatic Detection', PHOTONS, Tech Review of CIPI, Vol. 1, No. 1, Spring 2005, pp. 25-27.
7. **Arvind Chandrasekaran** and Muthukumaran Packirisamy, "Absorption Detection of Enzymatic Reaction using a Hybrid Integrated Biophotonic Microfluidics System" PHOTONS 2006, Tech Review of CIPI, Vol.4, Fall issue, pp 27-31.
8. **Arvind Chandrasekaran** and Muthukumaran Packirisamy, "Geometrical tuning of microdiffuser/nozzle for valveless micropumps" Under Review with Journal of Micromechanics and Microengineering

LISTING OF REFERRED JOURNAL PUBLICATIONS:

2011

1. **A. Chandrasekharan** and M. packirisamy, "Geometrical tuning of microdiffuser/nozzle for valveless micropumps", Journal of Micromechanics and Microengineering. Accepted Feb 07, 2011.
2. **O Jayan**, A Morrison, M Packirisamy and R Wüthrich, "Low resistive silicon substrate as an etch-stop layer for drilling thick SiO₂ by Spark Assisted Chemical Engraving (SACE)", Journal of Microsystem Technology, Accepted on Feb 02, 2011.
3. **Roozbeh Ahmadi**, Muthukumaran Packirisamy, Javad Dargahi and Renzo Cecere, "Discretely-Loaded Beam-Type Optical Fiber Tactile Sensor for Tissue Manipulation and Palpation in Minimally Invasive Robotic Surgery", IEEE Sensors, Accepted on Jan 30, 2011.
4. **M. Kamal**, S. Narayanswamy, and M. Packirisamy, "Optical design of a line-focused forward-viewing scanner for optical coherence tomography," Appl. Opt. **49**, 6170-6178 (2010). It is published in the virtual Journal of BioMedical Optics on Jan 06, 2011.

2010

5. **Arvind Chandrasekaran**, Muthukumaran Packirisamy, “Integrated Microfluidic Biophotonic Chip for laser induced fluorescence detection”, *Journal of Biomedical Microdevices*, 2010, vol. 12 n 5, pp 923-933.
6. **Anas Al Azzam, Arvind Chandrasekaran**, Muthukumaran Packirisamy, Ion Stiharu, Rama Bhat, “Bioaffinity limitations for anisotropically etched silicon microfluidics” *International Journal of Abrasive Technologies: Special issue*, 2010, 3(2) pp. 122-132.
7. **Pooja Devi[†]**, Simona Badilescu, Muthukumaran Packirisamy and Pethaiyan Jeevanandam, Synthesis of Gold-Poly (dimethylsiloxane) Nanocomposite through a Polymer-Mediated Silver/Gold Galvanic Replacement Reaction, *Gold Bulletin* 43(4), 2010, pp307-315.
8. **Davoud Mohammadalizadeh**, Muthukumaran Packirisamy and Sivakumar Narayanswamy “Stitched Acousto-Optic Modulator Stroboscopic Interferometry for characterizing larger microstructures Measurement paper”, Measurement Volume 43, Issue 6, July 2010, Pages 810-821
9. **G Rinaldi**, I Stiharu, M Packirisamy, V Nerguizman, R Jr Landry and J-P Raskin, “Dynamic pressure as a measure of gas turbine engine (GTE) performance” , Meas. Sci. Technol., 21, Art no. 045201. Apr. 2010.
10. **Mohammad alizadeh, D., Manohohar Pai, M.,** Sivakumar, N., Packirisamy, M. “New temporal phase-shifting technique utilizing stroboscopy for static characterization of microstructures”, Measurement, 43 (1), Jan 2010, p.135-143.
11. **Mohammad Kamal**, Narayanswamy Sivakumar, Muthukumaran Packirisamy,”Optical design of a line focused forward-viewing scanner for optical coherence tomography” *Applied Optics*, 2010, pp.6170-6178
12. **G Rinaldi**, I Stiharu, M Packirisamy, V Nerguizman and R Jr Landry, “Dynamic pressure for gas turbine engine condition monitoring”, *Intl Review of Aerospace Engineering*, 3(5), Oct. 2010, pp.274-283

2009

13. **Arvind Chandrasekaran**, Muthukumaran Packirisamy, “Experimental Investigation of Evanescence based Infrared biodetection technique for Micro-Total Analysis Systems (μ TAS)” *Journal of Biomedical Optics*, 14,(5), Sep.-Oct. 2009, pp. 054050-1 to 11.
14. **Khodabakhsh Saeedi**, Rama B. Bhat and Muthukumaran Packirisamy, “Vibration of a Tapered Composite Aircraft Wing Using the Rayleigh Ritz Method with Boundary Characteristic Orthogonal Polynomials”, *Canadian Aeronautics and Space Journal*, Vol 55, No.1, pp.15-23, 2009.
15. **S. Sokhanvar**, M. Packirisamy and J. Dargahi, “ MEMS Endoscopic Tactile Sensor: Toward in-situ and in-vivo Tissue Softness Characterization”, *IEEE sensors*, Dec. 2009, 9, 12, pp 1679 – 1687.
16. **Carlos G. Agudelo**, Muthukumaran Packirisamy, Guchuan Zhu, and Lahcen Saydy, “Nonlinear Control of an Electrostatic Micromirror beyond Pull-in with an Experimental Validation”, *IEEE/ASME Journal of Microelectromechanical Systems*, 2009, 18(4), pp 914-923.

17. **G. Florea**, M.Packirisamy, I.Stiharu, "Modeling and verification of XeF2 silicon micromachining", Int. J. Nanomanufacturing, Vol. 3, Nos. ½, 2009, pp 55-72.
18. **Gino Rinaldi**, Muthukumaran Packirisamy, Ion Stiharu and Nezih Mrad "Simple and Versatile Micro-Cantilever Sensors", Sensors Review, Vol 29, Nov 1, 2009, pp. 44-53.
19. **M. Pai, G. Rinaldi**, N. Sivakumar, M. Packirisamy," Low-frequency static characterization of microstructures using acousto-optic modulated stroboscopic interferometer", Optics and Lasers in Eng., Volume 47, Issue 2, February 2009, pp 230-236
20. **M. Pai, G. Rinaldi**, N. Sivakumar, M. Packirisamy," Metrology, Static and Dynamic Characterization of Microstructures using Acousto-Optic-Modulated-Stroboscopic-Interferometry", Measurement, Volume 42, Issue 3, April 2009, Pages 337-345

2008

21. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Dynamic Synthesis of Microsystems using Segment Rayleigh-Ritz Method," IEEE/ASME Journal of Microelectromechanical Systems, Dec 2008, 17(6), pp 1468-1480.
22. **A. Chandrasekaran, Shanmugasundaram, P., J. You, A. Acharya**, M. Packirisamy, D. Maxwell "Bio-resistive identification of Heat Shock Protein 90", Jrl. Of BioMicrofluidics, Accepted, June 28 2008. *Biomicrofluidics* vol.2(3) 2008, pp 034102:1-10. Also published Virtual Journal of Biological Physics Research, July 15, 2008.
23. **A. Chandrasekaran**, M. Packirisamy, "Enhanced bio-molecular interactions through re-circulating microflows" *Jrl. of Nanobiotechnology*, 2008, 2(2) pp 39-46.
24. **S. Sokhanvar**, J Dargahi, and M. Packirisamy (2008)" Nonlinear Modeling and Experimental Evaluation of Soft Tissue Embedded Lumps for MIS Applications", International Journal of Medical Robotics and Computer Assisted Surgery, Accepted, under publication.
25. **Arvind Chandrasekaran** and Muthukumaran Packirisamy," Enhanced fluorescence detection through selective reflector integration with optical microfluidics based Lab-on-a-chip", *Sensor review*, 2008, vol. 28(1), pp 33-38.
26. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Frequency Tuning AFM Optical Levers Using a Slot", Journal of Microsystem Technologies, 14, 2008, 361-369
27. **S. Sokhanvar**, J Dargahi and M. Packirisamy,"Influence of Friction on Piezoelectric Sensors", J. of Sensors and Actuators, A: Physical, 141 (Jan 2008) 120–128. S.
28. **Sokhanvar**, J. Dargahi, and M. Packirisamy , "Hyperelastic modelling and parametric study of soft tissue embedded lump for MIS applications", Int J Med Robot. 2008 Sep;4(3):232-41.
29. **Yunqiang Li**, Muthukumaran Packirisamy, Rama B. Bhat, "Shape optimizations and static/dynamic characterizations of deformable microplate structures with multiple electrostatic actuators", Journal of Microsystem Technologies, 14, 2008, 255-266
30. **Jianliang You, Avinash K. Bhaskar**, Muthukumaran Packirisamy and Rama Bhat, "Static and dynamic evaluation of SOI based scanning micromirrors", International Journal of Intelligent Systems Technologies and Applications 2008 - Vol. 5, No.1/2 pp. 185 - 200.
31. **Rinaldi, G.**, Packirisamy, M. and Stiharu, I., (2006) Boundary characterization of MEMS structures through electro-mechanical testing. Sensors and Actuators A, Volume 143, Issue 2, 16 May 2008, Pages 415-422

32. **Avinash. K.B.**, M. Packirisamy, Bhat. R. B., 'Bulk micromachining for SOI based microsystems using double side XeF₂ etching', special issue on Microfabrication, International Journal of Manufacturing Technology and Management (IJMTM), Vol. 13, Nos.2/3/4, 2008, pp. 297-307.
33. **Jianliang You**, M. Packirisamy, I. Stiharu, "Study of an electrostatically actuated torsional micromirror with compliant planar springs" Journal of Microsystem Technologies, Issue 14/1, 2008, 7-16.

2007

34. **A.Parashar, A.Shah**, M. Packirisamy and N. Sivakumar, "Three Cavity Tunable MEMS Fabry Perot Interferometer", Sensors, 7(12), Dec 2007, pp. 3071-3083
35. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Quantitative Boundary Support Characterization for Cantilever MEMS", *Sensors 2007*, 7, Special Issue: "Cantilever, Microcantilevers and Nanocantilever Sensors and Biosensors", Sensors 2007, 7, 2062-2079.
36. **Arvind Chandrasekaran, Ashwin Acharya, Jian Liang You, Kim Young Soo**, Muthukumaran Packirisamy, Ion Stiharu, Andre Darveau, "Hybrid integrated Silicon microfluidic platform for fluorescence based biodetection" *Sensors 2007*, 7, 1901-1915
37. **S. Sokhanvar, M. Ramezanifard**, J Dargahi and M. Packirisamy, "Graphical Rendering of Localized Lumps for MIS Applications", Transactions of the ASME, J of Medical Devices, 2007, (1): 217-224.
38. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Computer Aided Design of Geometrically Difficult Micro-Mechanical Structures for Academic Environment", *Intl. Jrl. of Computer Applications in Technology*, Special issue on "informatics in MEMS design and manufacture", Accepted on June 29, 2007.
39. **Saeed Sokhanvar, Mohammad Reza Ramezanifard**, Muthukumaran Packirisamy and Javad Dargahi, "Computer Aided Minimally Invasive Surgery: A reality-based soft tissue modelling approach", International Journal of Computer Application and Technology, Special Issue on *Informatics in MEMS Design and Manufacture*. Accepted on June 29, 2007.
40. **S. Sokhanvar**, M. Packirisamy and J. Dargahi, 'A multifunctional PVDF-based tactile sensor for minimally invasive surgery' Journal of Smart Materials and Structures, Vol. 16, 2007, pp.989-998. Considered for IoP Select, a special collection of superior articles, <http://Select.iop.org>.
41. **M. Arefin Anwar**, M. Packirisamy and A. K. W. Ahmed, 'Thermally Actuated Rotary Type Micro Actuator with Curved Beams', Jrl. of Mechanisms and Machine Theory, Accepted for publication.
42. **Arvind Chandrasekaran, Amit Soni**, Muthukumaran Packirisamy, "Modelling of Evanescence based Silicon-on-Insulator Rib Waveguide System for Chemical Sensing", International Journal of Computer Application and Technology, Special Issue on *Informatics in MEMS Design and Manufacture*. Accepted on June 29, 2007. ISSN (Online): 1741-5047.

43. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Dynamic Testing of Micromechanical Structures under Thermo-Electro-Mechanical Influences", *Measurement*, 40, Jul 2007, pp. 563-574.
44. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Tuning the Dynamic Behaviour of Cantilever MEMS Based Sensors and Actuators", *Sensor Review*, Vol. 27, No. 2., 2007, pp.142-150.
45. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, "Dynamic Analysis of Slotted MEMS Cantilevers", *International Journal of COMADEM*, April 2007 Issue.10(2). Pp.13-19.I.
46. **Arvind Chandrasekaran** and Muthukumaran Packirisamy, 'Wafer Dicing Strategic Planning Technnique for Clustered MEMS Devices', International Journal of Product Development (IJPD), Vol4, No.3/4, 2007, pp. 296-309.

2006

47. **Yunqiang Li**, Muthukumaran Packirisamy, Rama B. Bhat, "Shape optimization and dynamic characterization of multiple-electrostatically deformable microbridges", *Journal of Microsystem Technologies*, Vol 13, No. 7, 2006, pp. 663-675.
48. **Arvind Chandrasekaran** and Muthukumaran Packirisamy, "Absorption detection of enzymatic reaction using optical microfluidics based intermittent flow microreactor system", *IEE Proc. of Nanobiotechnology*, Vol. 153, No.6, Dec 2006, pp. 137-143.
49. **Nagarajan Babu, Ali Bonakdar**, Javad Dargahi, Muthukumaran Packirisamy, Rama Bhat, "Design and Analysis of a Micro Machined Piezoelectric Sensor for Measuring Visoelastic Properties of Tissues in Minimally Invasive Surgery", *Journal of Smart Materials and Structures*, Vol. 15, 2006, pp.1684-1690.
50. **Amritsar Jeetender**, Ion Stiharu and Muthukumaran Packirisamy, 'Bio Enzymatic Detection of Troponin C', *Journal of BioMedical Optics*, Volume 11, Issue 2, March/April 2006, 021010, pp1-7.
51. Guchuan Zhu, Muthukumaran Packirisamy, Mehran Hosseini, and Yves-Alain Peter, "Modelling and control of an electrostatically actuated torsional micromirror", *Journal of Micromechanics and Microengineering*, Vol. 16, 2006, pp.2044-2052.
52. **Gino Rinaldi**, Muthukumaran Packirisamy and Ion Stiharu, 'Boundary Characterization of Microstructures through Thermo Mechanical Testing', *Journal of Micromechanics and Microengineering*, Vol. 16, 2006, pp.549-556.
53. **Chandrasekaran A.**, Packirisamy M., Stiharu I. and Delage A., 'Hybrid Bulk Micromachining Process Suitable for Roughness Reduction in Optical MEMS Devices', *Intl. Jrl. of Manu. Tech. and Mgmt.: Spl. issue on "Advances in Micro/Nano Machining Tech. for Electronic and Optical Devices"*, Vol. 9, Nos. 1 /2, 2006, pp. 144-159.

2005

54. **Vahé Nerguizian**, Mustapha Rafaf, Louis A. Dessaint, Muthukumaran Packirisamy and Ion Stiharu, "MEMS magnetic linear motor for micro applications", *WSEAS Transactions on Circuits and Systems*, Issue 4, Volume 4, April 2005, pp. 267-273.

55. Huijun Li, Ion Stiharu Muthukumaran Packirisamy and **Vahé Nerguzian**, "Micro-optical thermally actuated platform in MUMPS technology", WSEAS Transactions on Circuits and Systems, Issue 5, Volume 4, May 2005, pp. 490-494.
56. Muthukumaran Packirisamy and **Hong Zhao**, 'Birefringence control in Anisotropically Micromachined SOI Waveguides', WSEAS Transactions on Circuits and Systems, Issue 4, Volume 4, April 2005, pp. 203-210.
57. **Jianliang You, Luis Flores**, Muthukumaran Packirisamy and Ion Stiharu, 'Modeling the Effect of Channel Bends on Microfluidic Flow', IASME Transactions, Issue 1, Vol. 1, Jan. 2005, pp. 144-151.
58. Packirisamy M., 'Microfabrication Influence on the Behavior of Capacitive Type MEMS Sensors and Actuators' Sensor Review, Vol. 26, No. 1, 2006, pp. 58-65.
59. Packirisamy M., Stiharu I., Li X.and **Rinaldi G.**, 'A Polyimide Based Resistive Humidity Sensor', Sensor Review, Vol. 25, No. 4, 2005, pp. 271-276.
60. Stiharu I., M. Packirisamy, S. Rakheja, A. Jeetender, "Integrated microsystem for troponin-C bio-enzyme detection for Acute Myocardial Syndrome recognition", WSEAS Transactions on Circuits and Systems, Issue 5, Vol. 4, May 2005, pp. 577-585.
61. **Nerguzian V.**, Rafaf M, Packirisamy M. and Stiharu I., "Ultra violet detection sensors", Intl. Jrl. of High Speed Electronics and Systems (IJHSES), Spl. Issue, 2005. (June 02, 2005, Accepted).
62. **Sokhanvar S.**, J. Dargahi, M. Packirisamy, E. Esmailzadeh, "Modeling of Chemical Control of Human Respiratory System ",*J. of Biomed. & Mat. Eng.*, 15(6)2005, pp.467-481.
63. Muthukumaran, P., R.B. Bhat and I. Stiharu, 'Active Control of Enclosure Structural Vibration and the Resultant Interior Noise Using Artificial Neural Network', Intl. Jrl. of *Advances in Vibration Engineering*, Vol.4, No. 2, April-June 2005, pp.181-198.
64. P. Muthukumaran, I. Stiharu and R. B. Bhat, 'Influence of Micromachining on Dynamic Behavior of MEMS Structures', Canadian Jrl. of Elec. and Comp. Engineering, 30(3), 2005, pp. 157-162.
65. P.Muthukumaran, et.al., "Planar comb filters based on aberration-free elliptical grating facets", *IEEE Jrl. Lightwave Technology*. 23(3), pp. 1239-1243, 2005.
66. P.Muthukumaran, et.al., "Novel architecture for design of planar lightwave interleavers", *IEEE Jrl. Lightwave Technol.* 23(3), pp. 1435-1440, 2005.
67. Dossou K., Packirisamy M. and Fontaine M., 'Analysis of diffraction gratings using an edge element method', Jrl. of the Optical Society of America A., Vol. 22, No.2, Feb. 2005, pp. 278-288.
68. Packirisamy M., Stiharu I. and **Flores L.**, "Roughness Characterization of Gas Phase Micromachining Process Suitable for Fabricating Silicon Based Microsystems", Intl. Jrl. of Manufacturing Tech. and Management, Vol 7, No.s2/3/4, 2005, pp. 224-245.

2004

69. Stiharu I., Packirisamy M. and Botef I., 'Gaseous phase XeF_2 chemical milling for MEMS Machining', Mecatronica, 2004 (1), pp. 82-87.
70. **Bhaskar A.**, Packirisamy M. and R.B. Bhat , 'Modeling Switching Response of Torsional Micromirrors for Optical Microsystems', Jrl. of Mechanisms and Machine Theory, Vol.39, No. 12, December 2004, pp. 1399-1410.
71. Dargahi S., **S. Sokhanvar**, and M. Packirisamy," Theoretical and Experimental Techniques in Using Polyvinylidene Fluoride (PVDF) Films as a Transducer in Sensor Systems", Trans. of the Canadian Society of Mechanical Engineering, Vol. 28, No. 2B, 2004. pp.291-307.

72. M.Packirisamy., et.al.,'Planar Waveguide Echelle Gratings in Silica-on-Silicon', IEEE. Photonics Technology Letters , Vol. 16, No.2, Feb. 2004, pp. 503-505.
73. **Rinaldi G.**, Packirisamy M. and Stiharu I., 'An Improved Method for Predicting Microfabrication Influence in Atomic Force Microscopy Performances', Intl. Jrl. of Nanotechnology, Vol.1, No.3, 2004, pp. 292-306.

2003

74. Demirli. K , S.X. Cheng and P.Muthukumaran, 'Fuzzy Modeling of Job Sequencing with Substractive Clustering', Jrl. Fuzzy Sets and Systems, 137, 2003, pp. 235-270.

2002-1992

75. Demirli. K and P.Muthukumaran. 'Fuzzy System Identification with Higher Order clustering', Jrl. of Intelligent and Fuzzy Systems, Vol. 9, No. 3-4, 2000, pp. 129-158.
76. Muthukumaran.P, I.Stiharu and R.B.Bhat,'Gas Phase Xenon Difluoride Etching of Microsystems Fabricated through Mitel 1.5 μm CMOS Process', Canadian Jrl. of Electrical and Computer Engineering, Vol. 25, No. 1, Jan. 2000, pp. 35- 41.
77. Muthukumaran.P, K.Demirli, I.Stiharu and R.B.Bhat. 'Boundary Conditioning Technique for Structural Tuning using Fuzzy Logic Approach', Intl. Jrl. of Computers and Structures, Jan. 2000, Vol. 74, Issue 5, pp. 547-557.
78. Muthukumaran.P, R.B.Bhat and I.Stiharu. 'Boundary Conditioning Technique for Structural Tuning', Jrl. of Sound and Vibration, 220(5), 1999, 847-859.
79. Muthukumaran.P, R.B.Bhat and I.Stiharu, 'Localization of Structural Vibration and Acoustic Radiation through Boundary Conditioning', Trans.CSME, Vol. 22, No. 4B, 1998, 519-532. ISSN (printed): 0315-8977
80. Muthukumaran.P and S.Kumaraswamy, 'A Method for Prediction of Static Pressure Distribution in Centrifugal Impellers', Jrl. of Aeronautical Society of India, Vol. 47, No.2, May 1995, pp 87-93.
81. Muthukumaran.P, S.Kumaraswamy and H.C.Radha Krishna, 'Prediction for Assessing Cavitation Performance of Rotodynamic Pumps', Jrl. of Irrigation and Power, Vol. 49, No.4, Oct. 1992, pp 101-117.
82. Muthukumaran.P, S.Kumaraswamy and H.C.Radha Krishna, 'Prediction of Cavitation Behavior of Pumps', IE(I) Jrl., Vol. 72, Jan. 1992, pp 88-95.