References

[1] F. R. Munas, Y. W. Ranjith Amarasinghe, and D. Dao, “Review on MEMS based Micropumps for Biomedical Applications,” *Int. J. Innov. Res. Sci. Eng. Technol. (An ISO Certif. Organ.*, vol. 3297, no. 7, pp. 5602–5615, 2007. (Available at:http//www.ijirset.com)

[2] A. Nisar, N. Afzulpurkar, B. Mahaisavariya, and A. Tuantranont, “MEMS-based micropumps in drug delivery and biomedical applications,” *Sensors Actuators, B Chem.*, vol. 130, no. 2, pp. 917–942, 2008.

[3] F. Abhari, H. Jaafar, and N. A. Md Yunus, “A comprehensive study of micropumps technologies,” *Int. J. Electrochem. Sci.*, vol. 7, no. 10, pp. 9765–9780, 2012.

[4] F. R. Munas,G. Melroy, C. B. Abeynayake, H. L. Chathuranga, R. Amarasinghe, P. Kumarage, V. T. Dau, and D. V.Dao, “Development of PZT actuated valveless micropump,” *MDPI Sensors (Switzerland),* vol. 18, no. 5, 2018.
doi:10.3390/s18051302 (Available at: http//www.mpi.com/journals/sensors)

[5] R. Zengerle, J. Ulrich, S. Kluge, M. Richter, and A. Richter, “A bidirectional silicon micropump,” "*Sensors and Actuators, A Phys."*, vol. 50, no. 1–2, pp. 81–86, 1995.

[6] Z. X. Zou, Y. Z. Ye, Y. Zhou, and Y. Yang “A novel thermally actuated silicon micropump,” in *Proceedings of the 1997 International Symposium on Micromechatronics and Human Science*, 1997, no. 5, pp. 231–234.

[7] H. Yang, T. H. Tsai, and C. C. Hu, “Portable valve-less peristaltic micropump design and fabrication,” *DTIP MEMS MOEMS - Symp. Des. Test, Integr. Packag. MEMS/MOEMS*, no. April, pp. 273–278, 2008.

[8] P. K. Podder, D. P. Samajdar, D. Mallick, and A. Bhattacharyya, “Design and simulation of micro-pump, micro-valve and micro-needle for biomedical applications,” *CODEC 2012 - 5th Int. Conf. Comput. Devices Commun.*, vol. 3, pp. 1–4, 2012.

[9] M. Pandey and P. Upadhyay, “Design and Simulation of valve less PZT micropump for drug delivery system,” *Int. J. Adv. …*, vol. 3, no. 2, pp. 92–100, 2012.

[10] S. Li, S. Chen, “Analytical Analysis of a circular PZT actuator for valveless micropumps,” *Sens. Actuators A*, vol. 104, pp. 151–161, 2003.

[11] P. Woias, “Micropumps - Past, progress and future prospects,” *Sensors Actuators, B Chem.*, vol. 105, no. 1, pp. 28–38, 2005.

[12] W. J. Spencer, W. T. Corbett, L. R. Dominguez, and B. D. Shafer, “An Electronically Controlled Piezoelectric Insulin Pump and Valves,” *IEEE Trans. Sonics Ultrason.*, vol. 25, no. 3, pp. 153–156, 1978.

[13] J. G. Smits, “Piezoelectric micropump with three valves working peristaltically,” *Sensors Actuators A. Phys.*, vol. 21, no. 1–3, pp. 203–206, 1990.

[14] R. Mishra, T. K. Bhattacharyya, and T. K. Maity, “Design and Simulation of Microfluidic Components towards Development of a Controlled Drug Delivery Platform,” *2016 29th Int. Conf. VLSI Des. 2016 15th Int. Conf. Embed. Syst.*, no. 1, pp. 583–584, 2016.

[15] E. M. Garcell, “Analysis and Simulation of MEMS Comb-Actuators,” pp. 1–23, 2012.

[16] M. J. Simon, V. M. Bright, R. Radebaugh, and Y. C. Lee, “An analytical model for a piezoelectric axially driven membrane microcompressor for optimum scaled down design,” *J. Mech. Des. Trans. ASME,* vol. 134, no. 1, pp. R35–R64, Jun. 2012.

[17] M. W. Ashraf, S. Tayyaba, and N. Afzulpurkar, “Micro Electromechanical Systems (MEMS) based microfluidic devices for biomedical applications,” *Int. J. Mol. Sci.*, vol. 12, no. 6, pp. 3648–3704, Jan. 2011.

[18] S. K. Jha and V. C. Jha, “Design and Fabrication of a Three Dimensional Valveless Micropump with Shape Deposition Manufacturing Process”, *Int. J. Res. Eng. Appl. Sci. (IJREAS),* vol. 2, no. 2, pp. 805–824, 2012 ISSN : 2249-3905.

[19] M. J. Simon, V. M. Bright, R. Radebaugh, and Y. C. Lee, “An analytical model for a piezoelectric axially driven membrane microcompressor for optimum scaled down design,” *J. Mech. Des. Trans. ASME*, vol. 134, no. 1, 2012.

[20] K. Mahija, B. G. Pushpalatha, and J. J. Jijesh, “Mems Based Drug Delivery System,” *Int. J. Electro Signal and Sys. (IJESS).*, vol. 1, no. 2,pp. 91–95, 2012.

[21] K. Yoshida, T. Muto, J. W. Kim, and S. Yokota, “An ER microactuator with built-in pump and valve,” *Int. J. Autom. Technol.*, vol. 6, no. 4, pp. 468–475, 2012.

[22] J. M. Anderson and J. J. Langone, “Issues and perspectives on the biocompatibility and immunotoxicity evaluation of implanted controlled release systems,” *J. Control. Release*, vol. 57, no. 2, pp. 107–113, 1999.

[23] A. F. M. Shukur, N. Sabani, B. N. Taib, M. A. M. Azidinab, and M. M. Shahiminab, “Performance characteristics of valveless and cantilever-valve micropump,” *Proc. SPIE 8923, Micro/Nano Mater. Devices, Syst.*, vol. 89234B, pp. 1–9, 2013.

[24] C. G. J. Schabmueller, M. Koch, M. E. Mokhtari, A. G. R. Evans, N. M. White, A. Brunnschweiler, and H. Sehr, “Self-aligning gas/liquid micropump,” *J. Micromechanics Microengineering*, vol. 12, no. 4, p. 420, 2002.

[25] Grundfos, *Pump Handbook*, Design of Pumps and Motors, Grandfos Pumps Corporation, 2014.

[26] “Bartels Micropump.”[online] Available: http:// www.bartels-mikrotechnik.de › index.php › products › micropumps

[27] “PiezoelectricPump.”[Online].Available:http://www.dolomite-microfluidics.com/.

[28] C. P. Cartin, “Design, Fabrication, and Testing of a PDMS micro pump with moving membranes,” 2012.

[29] S. Yang, X. He, S. Yuan, J. Zhu, and Z. Deng, “A valveless piezoelectric micropump with a Coanda jet element,” *Sensors Actuators, A Phys.*, vol. 230, pp. 74–82, 2015.

[30] R. S. Jiaqi Wang, Kean C. Aw*, “Optimization of valveless micro pump for drug delivery,” in *Proceedings of the 9th IEEE InternationalConference on Nano/Micro Engineered and Molecular Systems, Hawaii, USA*, 2014.

[31] A. S. Manolis and T. A. Manolis, “Totally Implantable Artificial Heart: Still a Major Challenge,” *Rhythmos*, vol. 9, no. 1, pp. 1–3, 2014.

[32] A. K. Agarwal, J. Atencia, D. J. Beebe, and H. R. Jiang, “Design of microfluidic impellers capable of bi-directional pumping under a single rotating magnetic

actuation," *2007 20th IEEE Int. Conf. Micro Electro Mech. Syst. - MEMS '07*, pp. 667–670, 2007.

[33] M. I. Younis, S. L. Hendricks, and D. J. Leo, "Modeling and Simulation of Microelectromechanical Systems in Multi-Physics Fields," 2004.

[34] M. L. Roukes and R. Lifshitz, "Thermoelastic damping in micro- and nanomechanical systems," *Phys. Rev. B,* vol. 61, pp. 5600–5609, 2000.

[35] P. Ronkanen, P. Kallio, M. Vilkko, and H. N. Koivo, "Self Heating of Piezoelectric Actuators : Measurement and Compensation," *Proceedings of the IEEE International Symposium on Micro-Nanomechatronics and Human Science, Nagoya, Japan, p. 313-318, 2004.*

[36] A. H. Nayfeh and M. I. Younis, "Modeling and simulations of thermoelastic damping in microplates," *J. Micromechanics Microengineering*, vol. 14, no. 12, p. 420, 2004.

[37] B. Kim, C. M. Jha, T. White, R. N. Candler, M. Hopcroft, M. Agarwal, K. K. Park, R. Melamud, S. Chadorkar, and T. W. Kenny, "Temperature Dependence of Quality Factor in MEMS Resonators," *J. Microelectromechanicalsystems*, vol. 17, no. 3, pp. 755–766, 2008.

[38] K. L. Turner, D. R. Clarke, and N. C. Macdonald, "Santa Barbara Energy Dissipations in MEMS Resonators : Fluid Damping of Flexural Resonators and Thermoelastic Damping A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Mechanical Engineering by Weibin Zhang Committee in charge : Professor Hyongsok Soh," no. December, 2006.

[39] C. Zener, "Internal friction in solids: II. General theory of thermoelastic internal friction," *Phys. Rev,* vol. 53, no. 1, pp. 90–99, 1938.

[40] C. Zener, "Internal friction in solids," *Phys. Rev,* vol. 52, pp. 230–235, 1937.

[41] F. R. Munas, Y. W. R. Amarasinghe, and P. Kumarage, "Design and Simulation of MEMS Based Piezoresitive Pressure Sensor for Microfluidic Applications," in *2018 Moratuwa Engineering Research Conference (MERCon)*, 2018, pp. 215–220.
(Available at: https://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp)

[42] J. W. Judy, "Microelectromechanical systems (MEMS): Fabrication, design and applications," *Smart Mater. Struct.*, vol. 10, no. 6, pp. 1115–1134, 2001.

[43] M. Asadnia, A. G. P. Kottapalli, Z. Shen, J. Miao, and M. Triantafyllou, "Flexible and surface-mountable piezoelectric sensor arrays for underwater sensing in marine vehicles," *IEEE Sens. J.*, vol. 13, no. 10, pp. 3918–3925, 2013.

[44] A. P. Dabrowski and L. J. Golonka, "High pressure sensor with PZT transducer in LTCC package," *Procedia Eng.*, vol. 87, pp. 1099–1102, 2014.

[45] E. Teomete, "Measurement of crack length sensitivity and strain gage factor of carbon fiber reinforced cement matrix composites," *Meas. J. Int. Meas. Confed.*, vol. 74, pp. 21–30, 2015.

[46] D. Dumont-Fillon, H. Tahriou, C. Conan, and E. Chappel, "Insulin micropump with embedded pressure sensors for failure detection and delivery of accurate monitoring," *Micromachines*, vol. 5, no. 4, pp. 1161–1172, 2014.

[47] S. Fournier and E. Chappel, "Modeling of a Piezoelectric MEMS Micropump Dedicated to Insulin Delivery and Experimental Validation Using Integrated

Pressure Sensors: Application to Partial Occlusion Management," *J. Sensors*, vol. 2017, 2017.

[48] J. R. Lake, K. C. Heyde, and W. C. Ruder, "Low-cost feedback-controlled syringe pressure pumps for microfluidics applications," *PLoS One*, vol. 12, no. 4, pp. 1–12, 2017.

[49] J. Wang, C. Zhao, G. H. Zhao, X. F. Jin, S. M. Zhang, and J. B. Zou, "All-quartz high accuracy MEMS pressure sensor based on double-ended tuning fork resonator," *Procedia Eng.*, vol. 120, pp. 857–860, 2015.

[50] H. Schmid-Engel, S. Uhlig, U. Werner, and G. Schultes, "Strain sensitive nano-cermet thin films for high temperature pressure and force sensors," *Sensors Actuators A Phys.*, vol. 206, pp. 17–21, 2013.

[51] J. Cheng, M. Sundholm, B. Zhou, M. Hirsch, and P. Lukowicz, "Smart-surface: Large scale textile pressure sensors arrays for activity recognition," *Pervasive Mob. Comput.*, vol. 30, pp. 97–112, 2016.

[52] A. Arogbonlo, C. Usma, A. Z. Kouzani, and I. Gibson, "Design and Fabrication of a Capacitance Based Wearable Pressure Sensor Using E-textiles," *Procedia Technol.*, vol. 20, pp. 270–275, 2015.

[53] H. K. Lee, J. Chung, S. Chang, and E. Yoon, "Normal and shear force measurement using a flexible polymer tactile sensor with embedded multiple capacitors," *J. Microelectromechanical Syst.*, vol. 17, no. 4, pp. 934–942, 2008.

[54] P. Rey, P. Charvet, M. T. Delaye, and H. S. Abou, "A High Density Capacitive Pressure Sensor Array for Fingerprint Sensor Application," *IEEE Int. Solid-State Sensors Actuators Conf.*, vol. 2, pp. 1453–1456, 1997.

[55] X. Huang and D. Zhang, "A high sensitivity and high linearity pressure sensor based on a peninsula-structured diaphragm for low-pressure ranges," *Sensors Actuators, A Phys.*, vol. 216, pp. 176–189, 2014.

[56] A. Aqilah, A. Jaffar, S. Bahari, C. Y. Low, and T. Koch, "Resistivity characteristics of single miniature tactile sensing element based on pressure sensitive conductive rubber sheet," *Proc. - 2012 IEEE 8th Int. Colloq. Signal Process. Its Appl. CSPA 2012*, vol. 12, pp. 223–227, 2012.

[57] K. Noda, Y. Hashimoto, Y. Tanaka, and I. Shimoyama, "MEMS on robot applica- tions," in *Proceedings of the Solid-State Sensors, Actuators and Microsystems Conference (TRANSDUCERS). International*, 2009, pp. 2176–2181.

[58] W. P. Eaton and J. H. Smith, "Micromachined pressure sensors: review and recent developments," *Smart Mater. Struct.*, vol. 6, pp. 30–41, 1997.

[59] V. Balaji and K. N. Bhat, "A Comparison of Burst Strength and Linearity of Pressure Sensors having Thin Diaphragms of Different Shapes," *J. Isss*, vol. 2, no. 2, pp. 18–26, 2013.

[60] S. Santosh Kumar, A. K. Ojha, R. Nambisan, A. K. Sharma, and B. D. Pant, "Design and Simulation of MEMS Silicon Piezoresistive Pressure Sensor for Barometric Applications," *Int. Conf. Adv. Recent Technol. Electr. Electron.*, pp. 339–345, 2013.

[61] B. Ziaie, A. Baldi, and M. Z. Atashbar, *Hand Book of Nanotechnology: Introduction to Micro Nano Fabrication, Part A Nanostructures, Micro-/Nanofabrication and Materials Springer*,. ISBN 978-3-540-01218-4. Springer-Verlag Berlin.

[62] J. C. Doll and B. L. Pruitt, *Microsystems and Nanosystems: Piezoresistor Design and Applications*, ISBN 978-1-4614-8516-2 ISBN 978-1-4614-8517-9(eBook).
doi:10.1007/978-1-4614-8517-9
[63] R. Amarasinghe, D. V. Dao, T. Toriyama, and S. Sugiyama, "Design and fabrication of a miniaturized six-degree-of-freedom piezoresistive accelerometer," *J. Micromechanics Microengineering*, vol. 15, no. 9, pp. 1745–1753, 2005.
[64] K. N. Bhat, "Silicon micromachined pressure sensors," *J. Indian Inst. Sci.*, vol. 87, no. 1, p. 115, 2012.
[65] A. Beddiaf and F. Kerrour, "Study of the Impact of Thermal Drift on Reliability of Pressure Sensors," *J. Eng Sci and Tech.* vol. 12, no. 10, pp. 2677–2690, 2017.
[66] B. Abdelaziz, K. Fouad, and S. Kemouche, "The Effect of Temperature and Doping Level on the Characteristics of Piezoresistive Pressure Sensor," *J. Sensor Tech.*, vol.4, pp. 59–65, 2014. http://dx.doi.org/10.4236/jst.2014.42007.
[67] Y. Kanda, "Piezoresistance Effect of Silicon," *Sensors Actuators A Phys.*, pp. 83–91, 1991.
[68] K. K. Ng and S.M. Sze, "*Physics of Semiconductor Devices.,*" 3rd Edition, JohnWiley & Sons, New York, 2007.
[69] M. A. Green, "Intrinsic concentration, effective densities of states, and effectivemass in silicon.," *J. Appl. Phys*, vol. 6, pp. 2944–2954, 1990.
[70] O. H. J. Richter, J. Pedersen, M. Brandbyge, E.V. Thomsen, "Piezoresistance in p-type silicon," *J. Appl. Phys*, vol. 023715, 2008.
[71] C. Jenke, J. P. Rubio, S. Kibler, J. Häfner, M. Richter, and C. Kutter, "The combination of micro diaphragm pumps and flow sensors for single stroke based liquid flow control," *Sensors (Switzerland)*, vol. 17, no. 4, pp. 14–16, 2017.
[72] Z. G. Feng and E. E. Michaelides, "Proteus: A direct forcing method in the simulations of particulate flows," *J. Comput. Phys.*, vol. 202, no. 1, pp. 20–51, 2005.
[73] S. W. Van Der Merwe, A. A. Groenwold, P. W. Loveday, and G. D. Thiart, "A MEMS Based Valveless Micropump for Biomedical Applications," *7th South Afri.. Conf. Computational. Appl. Mech(SACAM).*, January, 2010.
[74] P. Gowdhaman, V. Annamalai, and O. P. Thakur, "Piezo, ferro and dielectric properties of ceramic-polymer composites of 0-3 connectivity," *Ferroelectrics*, vol. 493, no. 1, pp. 120–129, 2016.
[75] Q. Li, L. Chen, M. R. Gadinski, S. Zhang *et al.*, "Flexible high-temperature dielectric materials from polymer nanocomposites," *Nature*, vol. 523, no. 7562, pp. 576–579, 2015. doi:10.1038/nature14647
[76] C. He. and W. G. Chen, "Preparation and application of piezoelectric materials and its research status," in *Proc.of Funt. Mate*, 2010, pp. 11–13.
[77] M. Ghosh and M. G. Rao, "Growth mechanism of ZnO nanostructures for ultra-high piezoelectric coefficient," *Materials Express*, 2013, vol. 3, no. 4, pp. 319–327.
[78] R. Li, J. Zhou, H. Liu, and J. Pei, "Effect of polymer matrix on the structure and electric properties of piezoelectric lead zirconatetitanate/polymer composites," *Materials (Basel).*, vol. 10, no. 8, 2017.

[79] M. F. Lin, V. K. Thakur, E. J. Tan, and P. S. Lee, “Surface functionalization of $BaTiO_3$ nanoparticles and improved electrical properties of $BaTiO_3$/Polyvinylidene fluoride composite,” *RSC Adv.*, vol. 1, no. 4, pp. 576, 2011.

[80] Y. Mengyao, W. Wei. et al, “Research Progress and Development Trend of Smart Transmission Line Technologies,” *Xiandai Huagong/Modern Chem. Ind.*, vol. 2, no. 4, pp. 0–4, 2011.

[81] V. Tiwari, and G. Srivastava. “Structural, dielectric and piezoelectric properties of 0–3 PZT/PVDF composite,” *Ceram. Int*, pp. 41, 8008–8013, 2015. ISSN :0272-8842 Doi: 10.1016/j.ceramint.2015.02.148

[82] V. T. Dau, T. X. Dinh, R. Sakamoto, O. Tomonori, and S. Sugiyama, “A valve-less micro pump with pzt diaphragm,” *Proceedings of the* 12th *Int. Conf. Miniaturized. Sys. Chemi. Life Sci. USA*, 2008, pp. 1369–1371.

[83] J. J. Rojas and J. E. Morales, “Design and Simulation of A Piezoelectric Actuated Valveless Micropump,” in *Proceedings of the COMSOL Conference, Boston, MA, USA*, 2015, no. 1, pp. 3–6, 2015.

[84] V. T. Dau, T. X. Dinh, and S. Sugiyama, “A MEMS-based silicon micropump with intersecting channels and integrated hotwires,” *J. Micromechanics Microengineering*, vol. 19, no. 12, 2009.

[85] V. T. Dau, T. X. Dinh, T. Katsuhiko, and S. Susumu, “A cross-junction channel valveless-micropump with PZT actuation,” *Microsyst. Technol.*, vol. 15, no. 7, pp. 1039–1044, 2009.

[86] V. T. Dau, T. X. Dinh, Q. D. Nguyen, R. Amarasinghe, K. Tanaka, and S. Sugiyama, “Microfluidic valveless pump actuated by electromagnetic force,” *Proceedings of IEEE Sensors*, 2009, pp. 679–682.

[87] T. X. Dinh, N. T. M. Le, V. T. Dau, and Y. Ogami, “A dynamic model for studying valveless electromagnetic micropumps,” *J. Micromechanics Microengineering*, vol. 21, no. 2, p. 21, 2011.

[88] N. Q. Dich, T. X. Dinh, P. H. Pham, and V. T. Dau, “Study of valveless electromagnetic micropump by volume-of-fluid and OpenFOAM,” *Jpn. J. Appl. Phys.*, vol. 54, no. 5, 2015.

[89] G. Melroy, C. B. Abeynayake, and H. L. chathuranga,"Design and Development of a Micropump for Biomedical Applications," BSc thesis, Dept of Mec. Engineering, UOM, SriLanka, May 2017.

[90] S. S. Krishna, N. V. S. A. Sai, and K. S. Rao, “Design and Simulation of MEMS 3D Piezoelectric Accelerometer,” in *Proceedings of the COMSOL Conference, Boston, MA, USA*, 2014, vol. 2, no. 2, pp. 77–81.

[91] W. Malalasekera, H. K. Versteeg, and H. K. Versteeg, *An introduction to computational fluid dynamics : the finite volume method*. Prentice Hall: Englewood Cliffs, NJ, USA, 2007.

[92] M. J. Simon, V. M. Bright, R. Radebaugh, and Y. C. Lee, “An analytical model for a piezoelectric axially driven membrane microcompressor for optimum scaled down design,” *J. Mech. Des. Trans. ASME*, vol. 134, no. 1, pp. 14, R35–R64, 2012.

[93] E. R. K. Comeford, S. Elliot, and S. Nivers, “Application and Design of Acrylic Microfluidic Chips,” *Project Report, Worcestor Polytechnic Institute*, 2017.

[94] A. Bamshad, A. Nikfarjam, and H. Khaleghi, “A new simple and fast thermally-

solvent assisted method to bond PMMA-PMMA in micro-fluidics devices," *J. Micromechanics Microengineering*, vol. 26, no. 6, 2016.
[95] A. M. G. Borges, L. O. Benetoli, M. Licinio *et al.*, "Polymer films with surfaces unmodified and modified by non-thermal plasma as new substrates for cell adhesion," *Mater. Sci. Eng. C*, vol. 33, no. 3, pp. 1315–1324, 2013.
[96] J. Shi, Z. Luo, D. Zhu, and S. P. Beeby, "PDMS/PVA composite ferroelectret for improved energy harvesting performance," *J. Phys. Conf. Ser.*, vol. 773, no. 1, 2016.
[97] G. da S. Padilha, V. M. Giacon, and J. R. Bartoli, "Effect of solvents on the morphology of PMMA films fabricated by spin-coating," *Polímeros*, vol. 27, no. 3, pp. 195–200, 2017.
[98] E. Mohajerani, F. Farajollahi, R. Mahzoon, and S. Baghery, "Morphological and thickness analysis for PMMA spin coated films," *J. Optoelectron. Adv. Mater.*, vol. 9, no. 12, pp. 3901–3906, 2007.
[99] H. Q. Zhang, Y. Jin, and Y. Qiu, "The optical and electrical characteristics of PMMA film prepared by spin coating method," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 87, no. 1, 2015.
[100] D. Meyerhofer, "Characteristics of resist films produced by spinning," *J. Appl. Phys.*, vol. 49, no. 7, pp. 3993–3997, 1978.
[101] D. F. S. Petri, "Characterization of spin-coated polymer films," *J. Braz. Chem. Soc.*, vol. 13, no. 5, pp. 695–699, 2002.
[102] D. W. Schubert, "Spin coating as a method for polymer molecular weight determination," *Polym. Bull.*, vol. 38, no. 2, pp. 177–184, 1997.
[103] A. F. Dário, H. B. MacIa, and D. F. S. Petri, "Nanostructures on spin-coated polymer films controlled by solvent composition and polymer molecular weight," *Thin Solid Films*, vol. 524, no. 1, pp. 185–190, 2012.
[104] A. Nallathambi, and T. Shanmuganantham, "Sensors & Transducers Design of Diaphragm Based MEMS Pressure Sensor with Sensitivity Analysis for Environmental Applications," vol. 188, no. 5, pp. 48–54, 2015.
[105] A. Mishra, I. Bahal, J. Arya, A. Pandey, and S. Urooj, "Sensitivity Analysis of MEMS Based Piezoresistive Sensor Using COMSOL Multiphysics," *Proceedings of the 3rd International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA) 2014: Volume 1*, 2015, pp. 59–67.
[106] T. R. Hsu, "MEMS & Microsystem: Design and Manufacture," Tata McGraw-Hill, 2002, pp. 34–47, 271–300.
[107] U. Sampath Kumar and N. Jagadesh Babu, "Design and Simulation of MEMS Piezoresistive Pressure Sensor to Improve the Sensitivity," vol. 3, no. 3, pp. 153–155, 2015.
[108] T. G. P. Priyadarshana, H. M. D. P. Wijethunge, B. C. C. P. Jayasekara, and Y. W. R. Amarasinghe, "Design and Optimization of a MEMS Based Piezoresistive Pressure Sensor for Flash Flood Level Measurement," pp. 55–61, 2012.
[109] Y. Kanda, "Piezoresistance effect of silicon," *Sensors Actuators A. Phys.*, vol. 28, no. 2, pp. 83–91, 1991.
[110] C. S. Smith, "Piezoresistance effect in germanium and silicon," in *Physical Review*, vol. 94, no. 1, 1954, pp. 42–49.

[111] M. Mohammadi, A.R., Bennington, C.P.J. and Chiao, "Development of a Combined Piezoresistive Pressure and Temperature Sensor Using a Chemical Protective Coating for Kraft Pulp Digester Process Monitoring," *J. Micromechanics Microengineering*, vol. 21, 2011.
[112] B. Othmani, R., Benmoussa, N. and Benyoucef, "The Thermal Drift Characteristics of Piezoresistive Pressure Sensor," *Phys. Procedia*, vol. 21, pp. 47–52, 2011.