

REFERENCE

- Algamili, A. S., Khir, M. H. M., Dennis, J. O., Ahmed, A. Y., Alabsi, S. S., Ba Hashwan, S. S., & Junaid, M. M. (2021). A Review of Actuation and Sensing Mechanisms in MEMS-Based Sensor Devices. *Nanoscale Research Letters*, 16(1). <https://doi.org/10.1186/s11671-021-03481-7>
- Amiri, I. S., & Addanki, S. (2018). Simulation fabrication and characterization of micro-cantilever array based ozone sensor. *Results in Physics*, 10(May), 923–933. <https://doi.org/10.1016/j.rinp.2018.08.010>
- Bao, M.-H. (2000). *Introduction to micro mechanical transducers*.
- Chakraborty, S. (2007). Electrothermal Effects. *SpringerReference, Encyclopedia of Microfluidics and Nanofluidics*. Springer, Boston, MA., 2007. https://doi.org/10.1007/springerreference_66701
- Chircov, C., & Grumezescu, A. M. (2022). Microelectromechanical Systems (MEMS) for Biomedical Applications. In *Micromachines* (Vol. 13, Issue 2). <https://doi.org/10.3390/mi13020164>
- Choi, J. S., & Park, W. T. (2020). MEMS particle sensor based on resonant frequency shifting. *Micro and Nano Systems Letters*, 8(1), 4–9. <https://doi.org/10.1186/s40486-020-00118-9>
- Daniel, C. C., Mihail, M. A., Viorel, G., & Cristinel, I. (2017). Modelling and simulation for control of a mems electromagnetic scanner. *International Journal of Mechatronics and Applied Mechanics*, 2017(2), 7–14. <https://doi.org/10.17683/ijomam/issue2.1>
- Debéda, H., & Dufour, I. (2019). Resonant microcantilever devices for gas sensing. *Advanced Nanomaterials for Inexpensive Gas Microsensors: Synthesis, Integration and Applications*, 161–188.

<https://doi.org/10.1016/B978-0-12-814827-3.00009-8>

- Do, C., Erbes, A., Yan, J., & Seshia, A. A. (2016). Design and implementation of a low-power hybrid capacitive MEMS oscillator. *Microelectronics Journal*, *56*, 1–9. <https://doi.org/10.1016/j.mejo.2016.07.007>
- Erhunmwun, I. D., & Ikponmwosa, U. B. (2017). Review on finite element method. *Journal of Applied Sciences and Environmental Management*, *21*(5), 999. <https://doi.org/10.4314/jasem.v21i5.30>
- Fantner, G. E., Schumann, W., Barbero, R. J., Deutschinger, A., Todorov, V., Gray, D. S., Belcher, A. M., Rangelow, I. W., & Youcef-Toumi, K. (2009). Use of self-actuating and self-sensing cantilevers for imaging biological samples in fluid. *Nanotechnology*, *20*(43). <https://doi.org/10.1088/0957-4484/20/43/434003>
- Gill, W. A., Howard, I., Mazhar, I., & McKee, K. (2022). A Review of MEMS Vibrating Gyroscopes and Their Reliability Issues in Harsh Environments. *Sensors*, *22*(19). <https://doi.org/10.3390/s22197405>
- Goel, A. K., Kumar, K., & Gupta, D. (2016). Design and simulation of microcantilevers for sensing applications. *International Journal of Applied Engineering Research*, *11*(1), 501–503.
- Guo, K., Jiang, B., Liu, B., Li, X., Wu, Y., Tian, S., Gao, Z., Zong, L., Yao, S., Zhao, M., Mi, C., & Zhu, G. (2021). Study on the progress of piezoelectric microcantilever beam micromass sensor. *IOP Conference Series: Earth and Environmental Science*, *651*(2). <https://doi.org/10.1088/1755-1315/651/2/022091>
- Hamidah, I., Pawinanto, R. E., Mulyanti, B., & Yunas, J. (2021). A bibliometric analysis of micro electro mechanical system energy harvester research. *Heliyon*, *7*(3). <https://doi.org/10.1016/j.heliyon.2021.e06406>
- Hossain, M. I., Zahid, M. S., Chowdhury, M. A., Maruf Hossain, M. M., &

- Hossain, N. (2023). MEMS-based energy harvesting devices for low-power applications – a review. *Results in Engineering*, 19(May). <https://doi.org/10.1016/j.rineng.2023.101264>
- Huang, X., Dong, X., Du, G., & Hu, Y. (2023). Long-Term Degradation Evaluation of the Mismatch of Sensitive Capacitance in MEMS Accelerometers. *Micromachines*, 14(1). <https://doi.org/10.3390/mi14010190>
- Hyodo, Y., & Yabuno, H. (2023). Self-Excited Microcantilever with Higher Mode Using Band-Pass Filter. *Sensors*, 23(5). <https://doi.org/10.3390/s23052849>
- Joshi, P. K. (2022). Reliability Study of MEMS Resonator: A Review. *Journal of Physics: Conference Series*, 2325(1). <https://doi.org/10.1088/1742-6596/2325/1/012013>
- Kaneko, M., Kudo, K., Ebisawa, K., Tanaka, K., & Uchikoba, F. (2019). MEMS power generator operated by fluorocarbon gas. *Journal of Physics: Conference Series*, 1407(1). <https://doi.org/10.1088/1742-6596/1407/1/012073>
- Kawahara, N., & Kashmi, K. (2017). Automotive applications. *Reference Module in Materials Science and Materials Engineering*, August 2015, 10-1-10–41. <https://doi.org/10.31399/asm.hb.v21.a0003474>
- Konstantiniuk, F., Krobath, M., Ecker, W., Czettel, C., Schalk, N., & Tkadletz, M. (2023). Influence of the aspect ratio of the micro-cantilever on the determined Young's modulus using the Euler-Bernoulli equation. *Materials Today Communications*, 35(May), 8–12. <https://doi.org/10.1016/j.mtcomm.2023.106225>
- Lam, Y., Patel, D., Vaknin, A., Hoffman, L., Thundat, T., & Ji, H.-F. (2023). Review—Reaction-Based Microcantilever Sensors. *ECS Sensors Plus*, 2(3), 033401. <https://doi.org/10.1149/2754-2726/ace982>
- Li, R. (2021). Research on Application of Finite Element Method in Static

Analysis. *IOP Conference Series: Earth and Environmental Science*, 1802(4). <https://doi.org/10.1088/1742-6596/1802/4/042008>

Manjunatha, D. V., Veerapathap, Bhagyashree, K., & Pathibha, A. (2023). 3-D Modelling of Mems Based Micro-Cantilever Vibration Sensor. *International Journal of Intelligent Systems and Applications in Engineering*, 11(6s), 516–521.

Mouro, J., Pinto, R., Paoletti, P., & Tiribilli, B. (2021). Microcantilever: Dynamical response for mass sensing and fluid characterization. *Sensors (Switzerland)*, 21(1), 1–35. <https://doi.org/10.3390/s21010115>

Müller, M., & Pfahl, D. (2008). Simulation methods. *Guide to Advanced Empirical Software Engineering*, 117–152. https://doi.org/10.1007/978-1-84800-044-5_5

Munguia Cevantes, J. E., Méndez Méndez, J. V., Mendoza León, H. F., Alemán Arce, M. Á., Mendoza Acevedo, S., & Estrada Vázquez, H. (2017). Si₃N₄ Young's modulus measurement from microcantilever beams using a calibrated stylus profiler. *Superficies y Vacío*, 30(1), 10–13. https://doi.org/10.47566/2017_syv30_1-010010

Mutharpavalar, A., Ahmed, A. Y., & Mohd Nor, N. (2020). Design, Modeling and Simulation of MEMS Resonator for Humidity Sensor Application. *2020 IEEE Sensors Applications Symposium, SAS 2020 - Proceedings, May*. <https://doi.org/10.1109/SAS48726.2020.9220082>

Muzaki, A. R., & Anggara, F. (2022). Simulasi kontur distribusi suhu dan kecepatan fluida pada heat exchanger type shell and tube aliran dua stage sistem counter flow dengan computational fluid dynamics (cfD). *SINTEK JURNAL: Jurnal Ilmiah Teknik Mesin*, 16(1), 6. <https://doi.org/10.24853/sintek.16.1.6-13>

Pariafsai, F. (2016). Strengths & Weaknesses of a Project-Based Simulation Game as an Educational Tool. *International Journal of Scientific Research in*

Science, Engineering and Technology(IJSRSET), 2(6), 59–67.

Pasteur, L., & Koch, R. (2020). *1. Introduction 1. Introduction*. 74(1934), 535–546.

Potekhina, A., & Wang, C. (2019). Review of electrothermal actuators and applications. *Actuators*, 8(4). <https://doi.org/10.3390/ACT8040069>

Pradhan, K. K., & Chakraverty, S. (2019). Finite Element Method. Computational Structural Mechanics. *Finite Element Methods*, 1, 25–28. <https://doi.org/10.1016/B978-0-12-815492-2.00010-1>

Suja, K. J., Kumar, G. S., Komaragiri, R., & Nisanth, A. (2016). Analysing the Effects of Temperature and Doping Concentration in Silicon Based MEMS Piezoresistive Pressure Sensor. *Procedia Computer Science*, 93(September), 108–116. <https://doi.org/10.1016/j.procs.2016.07.189>

Thompson, M. K., & Thompson, J. M. (2017). Introduction to ANSYS and Finite Element Modeling. *ANSYS Mechanical APDL for Finite Element Analysis*, 1–9. <https://doi.org/10.1016/b978-0-12-812981-4.00001-0>

Tiliakos, N. (2013). MEMS for harsh environment sensors in aerospace applications: Selected case studies. In *Mems for Automotive and Aerospace Applications*. Woodhead Publishing Limited. <https://doi.org/10.1533/9780857096487.2.245>

Wellekötter, J., & Bonten, C. (2020). Direct joule heating as a means to efficiently and homogeneously heat thermoplastic prepregs. *Polymers*, 12(12), 1–21. <https://doi.org/10.3390/polym12122959>

Wiley-VCH. (2015). *Resonant MEMS* (S. M. H. Oliver Brand, Isabelle Dufour & and F. Josse (eds.); 1st ed.).

Wong, S. W. K., Yang, S., & Kou, S. C. (2023). Estimating and Assessing Differential Equation Models with Time-Course Data. *Journal of Physical Chemistry B*, 127(11), 2362–2374. <https://doi.org/10.1021/acs.jpcc.2c08932>

- Xu, F., Wei, Y., Bian, S., Wang, H., Chen, D. R., & Kong, D. (2020). Simulation-based design and optimization of rectangular micro-cantilever-based aerosols mass sensor. *Sensors (Switzerland)*, 20(3). <https://doi.org/10.3390/s20030626>
- Ye, Z., & Patin, N. (2023). Design of a DC-DC converter network for an electromagnetic actuator array. *E-Prime - Advances in Electrical Engineering, Electronics and Energy*, 4(March). <https://doi.org/10.1016/j.prime.2023.100172>
- Zhang, Q., Li, C., Li, H., Liu, Y., Wang, J., Wang, X., Wang, Y., Cheng, F., Han, H., & Zhang, P. (2023). A High-Precision Quartz Resonant Ultra-High Pressure Sensor with Integrated Pressure Conversion Structure. *Micromachines*, 14(9). <https://doi.org/10.3390/mi14091657>
- Burarak, K., Mishra, G., Kumar, K., & Prabu, S. S. (2023). Investigation on static structural and steady state thermal analysis of an engine piston using ANSYS simulation. *AIP Conference Proceedings*, 2869(1). <https://doi.org/10.1063/5.0168486>
- He, J., & Fu, Z.-F. (2001). Modal analysis methods – frequency domain. *Modal Analysis*, 159–179. <https://doi.org/10.1016/b978-075065079-3/50008-5>
- Kumar, R., Singh, D., & Sharma, A. K. (2020). Static Thermal Analysis of Fins Models Using Ansys. *International Journal of Mechanical Engineering and Technology (Ijmet)*, 11(2), 10–21. <https://doi.org/10.34218/ijmet.11.2.2020.002>