



Sultan Qaboos University

College of Engineering
Department of Mechanical and
Industrial Engineering

CURRICULUM VITAE

Musaab Zarog
Sultan Qaboos University-Oman



Dr. Musaab Zarog, SMIEEE, Assistant professor

Profile

Dr. Musaab Zarog is Assistant professor at the department of Mechanical and Industrial Engineering at Sultan Qaboos University since 2015. Dr. Musaab has 18 years of experience of working at universities in Sudan as well as in Oman. He obtained his PhD. From Newcastle University in UK 2006. His research interests include ; Microelectromechanical Systems (MEMS), vibrations-based energy harvesting, and Mechatronics. Dr. Musaab is a member of International Institute of Acoustics and Vibration and he is a senior member of IEEE (SMIEEE) since Feb.2014. He is also member of institute of physics, and International Institute of Acoustics and Vibration.

Dr. Musaab is a persistent, passionate, and ambitious professional educator and researcher who has contributed to engineering profession and education since 2006. He also contributed to Engineering management as Director of External Relations at Sudan University of Science and Technology for three years (2012-2015).

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Muscat, Sultanate of Oman

1. PERSONAL INFORMATION

Nationality: Sudanese
Current Position: Assistant Professor
Major: Mechatronics Engineering
Address: Department of Mechanical and Industrial Engineering,
College of Engineering, Sultan Qaboos University,
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2. EDUCATION AND EMPLOYMENT INFORMATION

2.1 Education

PhD Electrical and Electronics Engineering, 2001-2006

University of Newcastle Upon Tyne, United Kingdom

Thesis: "SiC Microelectromechanical Systems (MEMS); characterization and actuation of 3C-SiC cantilevers and bridges). The project was funded by EPSRC (Engineering and Physical sciences Research Council, United Kingdom).

M. Sc. In Automation and Control (with Distinction), 2000- 2001

University of Newcastle Upon Tyne, United Kingdom

B. Sc. Mechatronics Engineering, 1994-1999

International Islamic University, Malaysia

2.2 Employment History

Assistant Professor

Sep.2015-present

Department of Mechanical and Industrial Engineering,
Sultan Qaboos University, Muscat, Oman

Associate Professor

March 2013- Sep.2015

School of Mechanical Engineering, College of Engineering, Sudan University of Science and Technology, Khartoum, Sudan

Director of External Relations, Vice-Chancellor office

March 2012- Sep.2015

Sudan University of Science and Technology, Khartoum, Sudan
3/2013-9/2015

Assistant Professor

March 2010- Sep.2012

School of Mechanical Engineering, College of Engineering, Sudan University of Science and Technology, Khartoum, Sudan

Assistant Professor

June 2006- March 2010

College of Engineering, University of Medical Sciences and Technology, Khartoum, Sudan

<i>Head, Department of Electronics Engineering</i>	<i>May.2008- March 2010</i>
College of Engineering, University of Medical Sciences and Technology, Khartoum, Sudan	
<i>Director & Founder, Olul-albab for Research and Development</i>	<i>Dec.2008- Dec.2009</i>
Khartoum North, Block.8, No. 132, Khartoum, Sudan	
<i>Acting Dean</i>	<i>April. 2007-May.2007</i>
College of Biomedical Engineering, University of Medical Sciences and Technology , Khartoum, Sudan	
<i>Technical assistant, British Telecoms -Retail(SEARCH): part-time</i>	<i>March 2005- May.2006</i>
Newcastle upon Tyne, United Kingdom	

3. UNIVERSITY TEACHING AND LEARNING

3.1 Taught Courses at SQU

Dynamics
Engineering System and Control
Machine Dynamics
Basic Mechanics
Modelling and Simulation
Engineering System Design
Engineering Vibration
Numerical Methods
Automatic Control
Mechanical Measurements & Instrumentation
Mechanics of materials
Fracture Mechanics
Statics
Electrical Measurements
Research Methods
Heat and Mass Transfer
MicroElectromechanical Systems

Postgraduate Taught Courses

Mechatronics Systems
Mechatronics Systems Design
Advanced Heat Transfer
Research Methods

3.2 Contribution to Management of Teaching Processes before joining SQU

- HoD, Department of Electronics Engineering, College of Eng., UMST-Sudan: May.2008-March.2010)
- Member, University Senate (Board), UMST – Sudan: 2006-2010
- Acting Dean, Faculty of biomedical engineering, UMST-Sudan: April 2007-May 2007
- Coordinator, Master of Biomedical Engineering , UMST-Sudan: June 2008-March 2010
- Coordinator, Final Year projects, Department of biomedical Engineering, UMST-Sudan June 2006- June2009
- Coordinator, Master of Business Administration (MBA), UMST-Sudan : Oct.2007-Feb.2008
- Member, New programs approval committee (UMST) : 2006 to 2010
- Member, Curriculum Revision Committee (UMST - Sudan): 2006 to 2010
- Chair, Mechatronics Engineering Program Proposal, SUST-Sudan
- Member, Departmental Research Committee, Faculty of Engineering, SUST-Sudan
- Chair, Departmental Research Council, Faculty of Engineering,
- Member, Faculty Research Council, Faculty of Engineering,
- Postgraduate coordinator, School of mechanical Engineering, Faculty of Engineering,
- Member, Programs Approval Committee, Ministry of Higher Education, Sudan (2010): I was invited three times to review proposals, submitted to the Ministry of Higher Education-Sudan for approval of Mechatronics/Electromechanical Engineering programs

3.3 Competency: Demonstrates the quality of developed/reviewed academic programs and other university teaching and learning processes.

- Participated in preparing the operation plan to achieve strategic goals of the department of Mechanical and Industrial Engineering, College of Engineering, SQU (2021).
- Participated effectively in preparation for ABET accreditation at SQU since 2016.
- Participated effectively in the process of preparing for ABET accreditation of Mechanical engineering program (prepared course assessment files for Engineering Systems and Control, Final year Project.1)
- Participated effectively in the process of preparing for ABET accreditation of Mechatronics Engineering program, (prepared course assessment file for Final year project and Engineering System Design).
- I also prepared number of other non-assessed course files.
- Carried out peer-evaluation for the course: Machine Dynamics course (MEIE3122)
- Translated the Engineering program website from English to Arabic
- Contributed to the translation of College of Engineering from English to Arabic.
- Chair, Auditing team (2022-2023) to reviewed performance of Department of Administrative

3.4 Competency: Subscribes to university teaching and learning professional societies and attends professional meetings.

I participated in many courses/workshops, training program and seminars to enhance my capabilities and skills in teaching and learning.

1. IEEE Future Tech Forum: Innovations for the Aging, workshop organized by IEEE, Moderator: Joseph Wei, Technology Ventures Group, LLC, 14 Sep. 2023.
2. The 6th International Webinar on Scientific Research: "Research Ethics", Webinar, 31st Oct. 2023.

3. Step-by-step Guide on How to Prepare a Successful Paper for Publishing in a peer review journal, Webinar, Springer-Nature, Nov 13, 2023
4. Workshop on publication fund support for Ministry of Higher Education, Research and Innovation, by representatives from MOHERI, Tuesday, 5 September 2023
5. Integrated Course Design Through Active Learning, A three weeks course conducted by Dr. Stewart Ross, organized by Center for Excellence in Teaching and Learning (CETL) at Sultan Qaboos University, 30th Jan to 17th Feb 2022.
6. "Teaching and Learning at Cambridge: Student, Academic & Administrative Perspectives" A workshop conducted by Prof. Michael Proctor (Provost of King's College, University of Cambridge), held at Sultan Qaboos University, 8th April. 2019, Muscat, Oman
7. "How digital learning can enhance learning experience" A workshop offered by Anthony Vinod, held at Sultan Qaboos University, 29th Oct. 2018, Muscat, Oman
8. "Highlighting Change: Teaching and Learning at SQU" A workshop offered by Centre for Excellence in Teaching and Learning (CETL) , held at Sultan Qaboos University, 11-13 Nov. 2018, Muscat, Oman
9. Creating significant learning Experiences, A workshop offered by DEE FINK & ASSOCIATES (USA), Dr. Stewart Ross, held at Sultan Qaboos University, 13th Feb. 2017, Muscat, Oman
10. Alternative Instructional Strategies, A workshop conducted by Prof. Nikos Mourtos : Chair of Aerospace Engineering Department at San Jose State University in California, held at Sultan Qaboos University, 16th May 2017, Muscat, Oman
11. Effective Teaching and Learning in Engineering: Framework, Principles and Strategies, A workshop delivered by number of SQU experts at Sultan Qaboos University, 5th December 2016, Muscat, Oman.
12. Teaching & Learning activities in CDIO initiative, A workshop delivered by Dr. Juha Konti, Finland at Sultan Qaboos University, 17-19th May 2016, Muscat, Oman
13. Creating significant learning Experiences, A workshop offered by DEE FINK & ASSOCIATES (USA), Dr. Stewart Ross, held at Sultan Qaboos University, 13th Feb. 2017, Muscat, Oman
14. "Turnitin" Workshop, (Turnitin is an Internet-based plagiarism-prevention service created by iParadigms, LLC) A workshop held at Sultan Qaboos University, 28th March. 2017, Muscat, Oman.
15. ABET Seminar, conducted by Dr. Amur Al-Yahmedi at Sultan Qaboos University, 12th November 2015, Muscat, Oman

3.5. Oral Presentations to students Within SQU University in Teaching and Learning

Delivered the following Seminars:

1. Final Year Project-I (Briefing): delivered three times (SP24, SP23, SP22). All seminars were recorded and shared with students
2. Report Writing, Referencing, Academic Integrity and Plagiarism : delivered three times (SP24, SP23, SP22). All seminars were recorded and shared with students
3. "What is good Final Year Project?", seminar presented to mechanical engineering student, SQU, 7th Oct. 2021
4. Mechanical Engineering: introduction and its relation with other engineering disciplines, December 2nd, 2018, College of Engineering, Sultan Qaboos University, Oman.

5. Invited Speaker, New Approaches in Applying Software & Mathematics to Islamic Religious Studies, College of engineering, Sultan Qaboos University, 21st March. 2019
6. **Invited speaker**, MEMS Energy Harvesters, at Ministry of Manpower, Ibra College of Technology, Oman, delivered on 6th Feb. 2019
The lecture was delivered before students and staff at Ibra college

3.6 Awards and Recognition in Teaching & Learning

- Certificate of appreciation from the Dean of the College of Engineering for the outstanding efforts and contributions to the college of engineering during academic year 2016-2017

4. SCHOLARSHIP

The broader area of research is Micro-Mechatronics with focus on:

- Microelectromechanical Systems (MEMS)
- Vibration-based Energy Harvesting.
- Mechatronics.

I have also developed interest in :

- Engineering Research Impact
- Artificial Intelligence/Decision Making Application for Islamic Sciences

4.1 Scholarly Publications

4.1.1 Books/Book chapters

1. M. Hassan, "Microelectromechanical Devices; Design, Fabrication, and Characterisation of SiC MEMS", LAP Lambert Academic Publishing, Germany, ISBN: 978-3-8383-2175-2, march 2010.
 - Link to the book: <https://www.amazon.com/Microelectromechanical-Devices-Design-Fabrication-Characterisation/dp/3838321758>
2. Musaab Zarog, Book chapter, "Future of self-powering WSNs in the Oil and Gas Industry ", Dudem, B., Venkateswaran, V., & Chandrasekhar, A. (Eds.). (2023). Nanogenerators and Self-Powered Systems. IntechOpen. doi: 10.5772/intechopen.100679,
 - link to the Book: <https://www.intechopen.com/books/11465>,
 - link to the chapter: <https://www.intechopen.com/chapters/84086>

4.1.2 Published Refereed Journal Papers •

Publications after Joining SQU (2015-sep.2024)

- [1] **Zarog, M.** (2024). Chronological Arrangement Of Hadiths: A Proposal For A Software-Based Prophetic Biography . Al-Qanatir: International Journal of Islamic Studies, 33(3), 268–281. Retrieved from <https://al-qanatir.com/aq/article/view/749>
- [2] **Zarog, M.** (2023) 'Energy harvesting from ambient vibration at low force/acceleration input', Recent Advances in Electrical & Electronic Engineering (Formerly Recent Patents on Electrical & Electronic Engineering), 16(3), pp. 287–292. doi:10.2174/2352096515666220928122027.
- [3] **Zarog, M.** (2023) 'Application of fuzzy logic in evaluating the authenticity of hadith and narrators', International Journal of Reasoning-based Intelligent Systems, 15(2), p. 156. doi:10.1504/ijris.2023.130205.
- [4] **Zarog, M.** (2023) 'Improving economic research impact in low-income countries: Key challenges and the way forward', Indian Journal of Economics and Development, pp. 216–223. doi:10.35716/ijed/22219.
- [5] **Zarog, M.** (2023) 'The thermal time constant of an electrothermal microcantilever resonator', Micro and Nanosystems, 15(2), pp. 102–107. doi:10.2174/1876402914666220622104104.
- [6] **Zarog, M.** (2021b) 'Piezoelectric ceramic for energy harvesting from ambient vibration', Energetika, 67(1). doi:10.6001/energetika.v67i1.4537.
- [7] **Zarog, M.** (2021a) 'A pilot study for evaluating economic and societal impact of Engineering Research', Journal of Arts and Social Sciences [JASS], 11(3), pp. 5–16. doi:10.53542/jass.v11i3.4476.
- [8] Eshag, M. & **Zarog, M.** (2019), "The Effect of the Electrode Position on the Dynamic Behavior of an Electrostatically Actuated Microcantilever", Acta Universitatis Sapientiae, Electrical and Mechanical Engineering, vol.11, pp. 34–41, **DOI: 10.2478/auseme-2019-0003**
- [9] **Zarog, M.** (2019) 'In achieving the most of limited research budget for Engineering Research Projects: A case study at Sultan Qaboos University', The Journal of Engineering Research [TJER], 16(2), p. 96. doi:10.24200/tjer.vol16iss2pp96-102.
- [10] Osman, S.E. and **Zarog, M.** (2019) 'Optimized V-shaped beam micro-electrothermal actuator using particle swarm optimization (PSO) technique', Micro and Nanosystems, 11(1), pp. 62–67. doi:10.2174/1876402911666190208162346.
- [11] Gaafar, E. and **Zarog, M.** (2017) 'A low-stress and low temperature gradient microgripper for biomedical applications', Microsystem Technologies, 23(12), pp. 5415–5422. doi:10.1007/s00542-017-3325-9
- [12] **Hassan, M.** et al. (2013) 'Electronic detection of pneumothorax using frequency-to-voltage converter', International Journal of Biomedical Engineering and Technology, 11(2), p. 169. doi:10.1504/ijbet.2013.055042.
- [13] **Hassan, M.** et al. (2012) 'Motion detection of patient in MRI using mechanical mercury switches', International Journal of Biomechatronics and Biomedical Robotics, 2(1), p. 1. doi:10.1504/ijbbr.2012.049587.
- [14] **Hassan, M.** (2012) 'Electrostatically actuated 3c-sic MEMS for frequency mixing', Journal of Mechatronics, 1(1), pp. 21–24. doi:10.1166/jom.2012.1005.
- [15] **Hassan, M.** (2012). Using Look-up Tables to Model an Electromagnetic Suspension System. American Journal of Applied Sciences, 9(8), 1199-1202. <https://doi.org/10.3844/ajassp.2012.1199.1202>

- [16] Mahjoub, H., **Hassan, M.** & Obed, M. (2012). Voice-Based Control of a DC Servo Motor. American Journal of Engineering and Applied Sciences, 5(1), 89-92. <https://doi.org/10.3844/ajeassp.2012.89.92>
- [17] **Hassan, M.**, Ali, A. A., Osman, S. I., & Saeed, K. (2012). Automatic Control of Temperature in a Shaft Bearing. International Journal of Control Science and Engineering, 2, 16–18. <http://article.sapub.org/pdf/10.5923/j.control.20120202.03.pdf>
- [18] **Hassan, M.**, Satti, A., Hussien, A., & El-Din, T. T. (2012). Electronic Cough Monitor. American Journal of Biomedical Engineering, 2(2), 38–40. <https://doi.org/10.5923/j.ajbe.20120202.07>
- [19] **Hassan, M.** (2012). Modelling Electromagnetic Suspension Force Using Measured Inductance-Airgap Data. Electrical and Electronic Engineering, 2(2), 64–67. <https://doi.org/10.5923/j.eee.20120202.12>
- [20] **Hassan, M.** (2012). Determination of residual stresses in a single crystalline 3C-SiC micro-fabricated structure using FE model and measured resonance frequencies. Microsystem Technologies, 18(3), 319–324. <https://doi.org/10.1007/s00542-012-1442-z>
- [21] **Hassan, M.** (2011). Pt/3C-SiC electrothermal cantilever for MEMS-based mixers. Microsystem Technologies, 17(3), 425–428. <https://doi.org/10.1007/s00542-011-1233-y>
- [22] **Hassan, M.** (2010). Reliability of Pt ohmic contact on an undoped 3C-SiC micro-electrothermal device. Microsystem Technologies, 17(1), 15–18. <https://doi.org/10.1007/s00542-010-1172-z>
- [23] Pozzi, M., **Hassan, M.**, Harris, A. J., Burdess, J. S., Jiang, L., Lee, K. K., Cheung, R., Phelps, G. J., Wright, N. G., Zorman, C. A., & Mehregany, M. (2007). Mechanical properties of a 3C-SiC film between room temperature and 600 °C. Journal of Physics D Applied Physics, 40(11), 3335–3342. <https://doi.org/10.1088/0022-3727/40/11/012>
- [24] Jiang, L., Cheung, R., Hedley, J., **Hassan, M.**, Harris, A., Burdess, J., Mehregany, M., & Zorman, C. (2006). SiC cantilever resonators with electrothermal actuation. Sensors and Actuators a Physical, 128(2), 376–386. <https://doi.org/10.1016/j.sna.2006.01.045>
- [25] Jiang, L., **Hassan, M.**, Cheung, R., Harris, A., Burdess, J., Zorman, C., & Mehregany, M. (2005). Dry release fabrication and testing of SiC electrostatic cantilever actuators. Microelectronic Engineering, 78–79, 106–111. <https://doi.org/10.1016/j.mee.2004.12.015>
- [26] Jiang, L., Cheung, R., **Hassan, M.**, Harris, A. J., Burdess, J. S., Zorman, C. A., & Mehregany, M. (2003). Fabrication of SiC microelectromechanical systems using one-step dry etching. Journal of Vacuum Science & Technology B Microelectronics and Nanometer Structures Processing Measurement and Phenomena, 21(6), 2998–3001. <https://doi.org/10.1116/1.1627804>

4.1.4 Conference Papers and Presentation

- [27] Abd alaziz mahmoud , aladeen Mohamed, Musaab Zarog, Analysis of a Micro-electrothermal Bimorph Actuator, IEEE 9th International Conference on Engineering, Technologies & Applied Sciences (ICETAS 2024), Manama, Bahrain, 20-22 November 2024
- [28] Sulaiman Al-Adawi, Mohammed Al-Nabhani, Isehaq Al-Aufi, and Musaab Zarog, Efficiency of Artificial Neural Networks (ANN) in classifying faults from limited vibration dataset, Fourth Vibration Institute Middle East Training Conference , Al-Khobar, KSA, November 11th-13th, 2024.
- [29] Musaab Zarog, Design and Analysis of Unimorph Double-Clamped Energy Harvester, 9th International Conference on Mechatronics Engineering (ICOM'24) 13th - 14th August 2024, Kuala Lumpur, Malaysia
- [30] Abdul Aziz Muhammad, Aladdin Muhammad Tirab, **Musaab Zarog**, Modeling and Analysis of MEMS Electothermal Bimorph Actuator, 18th International Conference on Vibration

- Engineering & Technology of Machinery 2023 (VETOMAC 2023), IIT Roorkee, Roorkee, India, 18-20 Dec 2023.
- [31] Mohammed Al Sawwafi, **Musaab Zarog**, Riadh Zaier, Amur Al Yahmedi, Vibration Analysis of Carbon Steel pipes in Oil industry, The VETOMAC 2022 will be held at the Institute of Engineering, Pulchowk Campus, Nepal, on December 15-17, 2022.
- [32] Al-Hashemi, F., Al-Dhafari, O., Al-Rasbi, M. and **Zarog, M.**, 2022. Effect of Base Layer Material on A Piezoelectric Energy Harvester. Orca International Conference on Mechanical, Materials and Industrial Engineering (OIC-MMIE) 2022, Indonesia, June 22, 2022.
- [33] **Musaab Zarog**, "Engineering Research Impact in Developing Countries", The International Conference on Sciences and Technology (ICOSTECH), Batram, Indonesia, 3-4 th Feb. 2022.
- [34] Abdelhaleem Obeid and **Musaab Zarog**, "The effect of loading type, anchoring type, and material selection on a MEMS switch design", The 4th International Conference on Engineering and Technology for Sustainable Development (4th ICET4SD 2021), Universitas Islam Indonesia, 13th Dec. 2021
- [35] **Musaab Zarog**, "SiC as a Promising material for MEMS/NEMS: A review", IASTEM- 260th International Conference on Mechanical and Aerospace Engineering (ICMAE), Marrakech, Morocco, 13-14th Oct. 2017 department, Newcastle University, Feb 2003.
- [36] Ammar Atia, Moayad Mamoon Ibrahim, Omer Abd Algbar Mohamed and Musaab. Hassan, "Modeling Of Electrostatically Actuated Temperature Sensor", International Conference on Computing, Electrical and Electronics Engineering, Corinthia Hotel, Khartoum, 26 Aug - 28 Aug 2013
- [37] M. Hassan, L. Jiang, R. Cheung, A. J. Harris, J. S. Burdess, C. A. Zorman and M. Mehregany, "SiC for MEMS-based filters", presented at 2nd International Conference on MEMS and Nanotechnology, Kuala Lumpur, Malaysia, May 2008

Publications in Arabic in peer-reviewed reputed journals

- [38] Musaab Zarog, "An arithmetic method for preference between the benefits and evils from a jurisprudential perspective", The contemporary Muslim (AL-Muslim Al-Muassir, prestigious Arabic Journal) Journal, issue No.168, 2021(in Arabic)
- مصعب عبدالله حسن زروق ، أدلة الفقه الأصولية: من الترجيح إلى التقدير، مجلة المسلم المعاصر (مجلة دورية محكمة)، العدد 168، 2021.
- [39] Musaab Zarog, "Towards a numerical method to evaluate and weigh benefits and harms from Islamic jurisprudence view", Journal of Islamic Sciences and Research, Sudan University of Science and Technology, Vol.18 (1), 2017. (in Arabic)
- مصعب عبدالله حسن زروق, " نحو طريقة حسابية للترجيح بين المصالح والمفاسد من منظور فقهي", مجلة البحوث الإسلامية, جامعة السودان للعلوم والتكنولوجيا, المجلد رقم 18, (1), 2017.
- [40] **Musaab Zarog**, " An Islamisation vision of engineering sciences", Journal of Islamic Sciences and Research, Vol.14(2), Sudan University of Science and Technology, 2014(in Arabic)

Candidate role: Single Author

مصعب عبدالله حسن زروق, "رؤية لأسلمة العلوم الهندسية" مجلة البحوث الإسلامية, جامعة السودان للعلوم والتكنولوجيا, العدد الرابع عشر, فبراير 2012

- [41] **Musaab Zarog**, " New approach of writing the prophet's biography using programming systems", The contemporary Muslim (AL-Muslim Al-Muassir, peer-reviewed Arabic Journal) Journal, issue No 147, 2013(in Arabic)

Candidate role: Single Author

مصعب عبدالله حسن زروق, " مدخل لتدوين جديد للسيرة النبوية باستخدام البرمجيات والحاسوب في ترتيب الأحاديث النبوية", مجلة المسلم المعاصر (مجلة دورية محكمة), العدد 147, 2013.

- [42] **Musaab Zarog**, "A proposal for using mean of weights method and fuzzy logic to estimate the degree of certainty regarding the continuity of hadith", Journal of Islamic Sciences and Research, Sudan University of Science and Technology, issue No.3, 2012. (in Arabic)

Candidate role: Single Author

مصعب عبدالله حسن زروق, "مقترح لاستخدام متوسط الأوزان الحسابي والمنطق الغائم في تقدير درجة صحة إسناد الحديث المتصل رقميا", مجلة البحوث الإسلامية, جامعة السودان للعلوم والتكنولوجيا, العدد الرابع, فبراير 2012

5.4.1 Publications in newspaper and online before Joining SQU

- [43] **Musaab Zarog**, " In addressing different approaches to overcome the technical advancement in Muslim World , Rakaiz elmaarifa for Studies and research, 2011(in Arabic)

• مصعب عبدالله حسن زروق ، قراءة في اتجاهات حول معالجة أسباب تأخر المسلمين, ركائز المعرفة للدراسات والبحوث, 2012 (مقال منشور رقميا)

- [44] **Musaab Zarog**, "Raising Questions to our Muslim Scholars Regarding Technical Advancement in Muslim World", Rayaam Newspaper, Sudan , Issue No. 476422, Monday 5th December, 2011(in Arabic)

• مصعب عبدالله حسن زروق ، تساؤلات واستفتاءات لفقهائنا حول تأخر المسلمين , صحيفة الرأي العام السودانية ، العدد 476422 , الإثنين 5 ديسمبر 2011 م.

5.4.2 Delivered talks and presentations

- [1] **Musaab Zarog**, "Research in Sudan: obstacles and proposed solutions , Lecture presented before the staff of the College of Engineering in the Scientific Research Week, Sudan University, Sudan, Dec. 2011.

- [2] **Musaab Zarog**, "Islamisation of Engineering Sciences: issues related to mechanical, electrical, and electronic engineering", Islamisation of Knowledge Workshop, Institute of Islamic Science and Research, Sudan University of Science and Technology, 19th June 2012, Khartoum, Sudan (in Arabic)

- [3] Musaab Zarog, “What is Mechatronics”, Lecture presented before the Department of Mechanical Engineering, Sudan University, Sudan, May 2010.
- [4] Musaab Zarog, “Mechatronics, the multi-disciplinary Engineering”, Lecture presented before the Department of Electrical and Electronic Engineering, University of Khartoum, Sudan, April 2009.
- [5] Musaab Zarog, “Nanotechnology and MEMS/NEMS”, Lecture presented before the Department of Electrical and Electronic Engineering, University of Khartoum, Sudan, June 2009.
- [6] M. Hassan, “SiC and SiC/SiO₂ micro-structures; Modeling and characteristics”, PG conference, electrical and electronic engineering, 2002

4.1.6 Funded Research Projects

No.	Investigators	Project Title (Code)	Sponsor	Year	Amount (USD)
1	Musaab Zarog (PI) , Moosa Al-Kharusi	MEMS-based multi-sensor chip for health monitoring of oil piping in Oman (RC/RG-ENG/MIED/23/03).	MoHERI, Oman	2024-Ongoing	\$ 51,182
2	Musaab Zarog (Acting PI) , Prof. Hadj	Vibration-based Condition Monitoring of oil piping in Oman/Qatar (CL/SQU\QU/ENG/24/01).	SQU-QU Joint Grant Research	2024-Ongoing	\$ 51,478
3	Musaab Zarog (PI) , Nabeel Al-Rawahi	Evaluating Industrial Impact of Funded Engineering Research in Oman (RF/ENG/MIED/23/02).	SQU, Deanship of Research Grants	2023-2024	\$ 7,794
4	Musaab Zarog (PI) , Dr. Edris	Design and fabrication of vibration energy harvester (IG/ENG/MIED/21/02 RF-ENG-MIED-20-01)	SQU, Internal Research Grants	2020-2022	\$ 11,223

4.1.7 Editorial Board membership and Invitations to review journals and conferences

- Editorial Board Member, American Journal of Engineering and Applied Sciences
- Reviewer, Journal of Microsystem Technologies, Springer

- Reviewer, Journal of Mechanical Engineering Science: Part C., SAGE Journals
- Reviewer, 28th IEEE International Conference on Automation and Computing (ICAC2023), 30 Aug.-1 Sep. 2023 Aston University, Birmingham, UK
- Reviewer, 2nd International Conference on Unmanned Vehicle Systems, 12-14 February 2024 at SQU-Oman
- Reviewer for the Journal of Engineering Research (TJER), SQU
- Reviewer, International Conference on Islamic Applications in Computer Science and Technologies 1st – 2nd July 2013, Kuala Lumpur, Malaysia
- Reviewer, SQU Internal Grant Proposal, Cycle 2024.
- Chair, Mechatronics Track Session in IEEE, International Conference on Computing, Electrical and Electronics Engineering, Corinthia Hotel, Khartoum, 26 Aug - 28 Aug 2013
-

4.1.8 Member of Scholarships Committees

1. Senior Member of Institution of Electrical and Electronics Engineers (IEEE), SMIEEE since 2014. (Member number: 90651729)
2. Member of International Institute of Acoustics and Vibration (Member Number: 3120)
3. Bentham Science Ambassador for "OMAN", 2019-2020
4. Member, The Society of Economics and Development
5. Member, IEEE Oman (Oman Section)
6. Member, IEEE Oman Blockchain Group (Oman Section)
7. Member of Sudanese Engineers Society since 2012
8. Member of Institute of Physics, MInstP (2012 to 2020) (Membership ID number: 1126345)
9. Member of American Society of Mechanical Engineers (ASME): 2019-2020 (Membership number is 102633299)

4.1.8 Personal Professional Development in Scholarship

Attended several scientific workshops, symposium and Forum as follow:

- 1) Workshop on ANSYS, A Training program conducted by research centres at Sultan Qaboos University, 21-25th February 2016, Muscat, Oman
- 2) "Introduction to COMSOL mutliphysics" A course conducted by Mr. Hakam Elessawy at Sultan Qaboos University, 14th December. 2017, Muscat, Oman.
- 3) Numerical Optimization Software, Workshop delivered by Prof. Hans Mittelmann, USA, at Sultan Qaboos University 08-09 January 2017, Muscat, Oman.
- 4) SQU Research Centres' Open House Program, A program conducted by research centres at Sultan Qaboos University, 13th October 2016, Muscat, Oman
- 5) Creating Thinking Skills for 21st Century, A workshop conducted by Prof. Nikos Mourtos : Chair of Aerospace Engineering Department at San Jose State University in California, held at Sultan Qaboos University, 18th May 2017, Muscat, Oman

- 6) COMSOL Day: MEMS, presentations conducted by COMSOL, Thursday, March 25.2021, virtually conducted
- 7) Hands on MEMS, training course at FRSM (Swiss Foundation for Research in Microtechnology) 21-22/03/2002, Neuchatel, Switzerland.

4.1.9 National and International Recognition in Scholarship

- **Keynote speaker**, Weighing Harms and Benefits in Sharia: Arithmetic Approach, 12th International Conference on Islamic Applications in Computer Science and Technologies (IMAN 2024), 7 – 9 December 2024 (online)
- **Invited Lecture**, Keynote speaker, Shape Optimization for Broadband Vibration-based Piezoelectric Energy Harvesters, 2nd International Conference on Nanotechnology Research and Innovation, University of Aveiro, Portugal, November 19-22, 2024
- **Keynote speaker**, Shape Optimization for Broadband Vibration-based Piezoelectric Energy Harvesters, 6th International Conference on Nanomaterials Science and Mechanical Engineering, University of Aveiro, Portugal, July 9-12, 2024
- **Keynote speaker**, Piezoelectric Nanogenerators for self-powered Internet-of-Things (IoT) devices, International Conference on Nanotechnology Research and Innovation, University of Aveiro, Aveiro, Portugal, November 20-24, 2023
- **Invited speaker**, Applications of MEMS in pipelines monitoring, 2nd Inspection and Integrity Conference, Hormuz Grand Hotel, Al Matar St, Muscat, Sultanate of Oman, 20 -21 September 2022 (Host is PDO)
- Certificate from SQU Vice Chancellor on the 22nd University day Occasion for "**Recognition of Scientific and Research Excellence during year 2021-2022**"

4.1.10 National/International Collaboration

- *Awarded SQU/Qatar grant 2024 – 2026 (Acting PI)*
- *Awarded TRC grant 2024 – 2026 (PI)*

4.1.11 National and International Contributions "Member of Scholarly Committees"

- Member, Scientific Committee, International Meet on Mechanical and Aeronautical Engineering (MAEMEET2024), February 15-17, 2024, Rome, Italy.
<https://www.albedomeetings.com/2024/maemeet/committee>
- Member, Program Committee, International Conference on Nanotechnology Research and Innovation, NTRIA, Aveiro, Portugal, November 20-24, 2023 (ICNTRI-2023),
<https://icntri2023.nmsme.org/icntri2023/committees>
- Member, Technical Committee, 2nd GCC International Conference on Industrial Engineering and Operations Management, Muscat, Oman, December 1-3, 2024.
<https://ieomsociety.org/oman2024/committee/>
- Member, Program Committee, 2nd International Conference on Nanotechnology Research and Innovation, November 19-22, 2024, University of Aveiro, Aveiro, Portugal
https://icntri-2024.web.ua.pt/?page_id=130

- Member, International Advisory Committee, 10th International Conference on Recent Challenges in Engineering and Technology, 22nd-23rd June, 2022, Bali, Indonesia
<https://icrcet.org/history/10th-ICRCET-Proceeding-book.pdf>
- Member, Program Committee, 6th International Conference on Nanomaterials Science and Mechanical Engineering, University of Aveiro, Portugal, July 9-12, 2024 (ICNMSME-2024)
<https://icnmsme2024.web.ua.pt/index.php/committees/>
- Chair, Mechatronics Track Session in International Conference on Computing, Electrical and Electronics Engineering (IEEE conference), Corinthia Hotel, Khartoum, 26 Aug - 28 Aug 2013

<file:///C:/Users/musaabh/Downloads/iccee13-Program.pdf>
- Member, Technical Committee of International Conference on Computing, Electrical and Electronics Engineering, (IEEE conference), Corinthia Hotel, Khartoum, 26 Aug - 28 Aug 2013
- Member, International Liaison Committee, International Conference on Islamic Applications in Computer Science and Technologies 1st – 2nd July 2013, Kuala Lumpur, Malaysia

<https://www.dsr.edu.my/iman/IMAN2013.pdf>

5. UNIVERSITY AND COMMUNITY SERVICES

5.1 Department Committees

No.	Committee Name	Role	Duration
1.	Final Year Project Committee, Mechatronics Engineering program,	Coordinator	Sep. 2020 - Present
2.	Final Year Project Committee, Mechatronics Engineering program,	Chair	Sep. 2021 - Present
3.	Final Year Project Committee, Mechanical Engineering,	ME Coordinator (FYP.1)	Sep. 2020 - Present
4.	Department Strategic Planning Committee	Coordinator	Sep. 2019 - 2020
5.	Department Postgraduate Studies and Research (DPGSR) Committee	<i>member</i>	Sep. 2018 - 2019
6.	Textbook & Library Committee	Chair & ME coordinator	Sep. 2019 - Present
7.	Department Lab/HSE Committee	<i>member</i>	Sep. 2016 - 2019
8.	Publication committee, SQU, translated department and college website	<i>Assistant</i>	2017 - 2017
9.	Final year Projects' Design Competition Committee (Mechanical)	member	Sep. 2020 - Present
10.	Final year Projects' Design Competition Committee (Mechatronics)	member	Sep. 2023 - 2024

5.2 College Committees

No.	Committee Name	Rule	Duration
1.	Information and Communication Technology (ICT) Committee	<i>member</i>	Sep. 2020 - Present
2.	Steering Committee, Mechatronics Engineering Program	<i>member</i>	Sep. 2021 - Present
3.			
4.		<i>member</i>	Sep. 2016 - Aug. 2019

5.3 University Committees

No.	Committee Name	Rule	Duration
1.	Quality Audit Team for The Department of Administrative Affairs	Chair	Sep. 2022 - 2023
2.	Academic Representation Committee for Colleges at the Main Library	<i>member</i>	May 2024 - Present

5.4 Serves in an administrative position and/or chairs committee,

Director & Founder, Olul-albab for Research and Development Dec.2008- Dec.2009
Khartoum North, Block.8, No. 132, Khartoum, Sudan

Head, Department of Electronics Engineering March 2013- Sep.2015
School of Mechanical Engineering, College of Engineering, Sudan University of Science and Technology, Khartoum, Sudan

Director of External Relations march2012-march2015

Vice Chancellor Office; Sudan University of Science and Technology (SUST); Khartoum; Sudan

- *Prepared and signed over 100 Memorandum of Understanding (MoU) SUST and other universities and institutions in the period 2012-2015.*
- *Signing MoU at some occasions on behalf of Vice-Chancellor at Sudan University of Science and Technology*
- *Supporting international and local collaboration with universities in faculty exchange programs*
- *Represent the university in various programs (e.g. student exchange program) organized by the Association of Arab Universities as well as coordinating the students' exchange programs*