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List of Publications

International Peer-Reviewed Journals

- 1. Beyond Cronbach's Alpha in Dental Education Assessments: Introducing Composite Indices for Enhanced Reliability and Validity.**
Sivakumar Manickam, Tim O'Brien, Rachappa Mallikarjuna.
European Journal of Dental Education. Published 2026.
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- 2. Mapping the unseen: a data-driven visualization framework for curriculum analysis.**
Sivakumar Manickam, Mohamed Al Ismaili, Rajmohan Chidambaram Sivamani, Radhakrishnan, R., & Chadwick, R. G.
Cogent Education, 13(1). Published 09 Apr 2026.
DOI: [10.1080/2331186X.2026.2650882](https://doi.org/10.1080/2331186X.2026.2650882).
- 3. AI-Assisted Integrated Question Bank Platform for Comprehensive Curriculum Alignment and Psychometrically Driven Assessments.**
Manickam S, Mallikarjuna R, Radhakrishnan R.
Sultan Qaboos University Medical Journal, 2026; 26:303–346.
DOI: [10.18295/2075-0528.2989](https://doi.org/10.18295/2075-0528.2989).
- 4. A Novel eOSPE System Enabling Systematic and Applied Learning Through Smart Scenario-Based Assessments (SALSA).**
Radhakrishnan R, Mallikarjuna R, **Manickam S**.
Sultan Qaboos University Medical Journal, 2026; 26:303–346.
DOI: [10.18295/2075-0528.2989](https://doi.org/10.18295/2075-0528.2989).
- 5. Course-Integrated Case Completion & Presentation in Pediatric Dentistry: Pilot Evaluation of Fifth-Year Student Learning.**
Mallikarjuna R, Nalawade T, **Kumar S**, Radhakrishnan R.
Sultan Qaboos University Medical Journal, 2026; 26:303–346.
DOI: [10.18295/2075-0528.2989](https://doi.org/10.18295/2075-0528.2989).
- 6. An integrated system for just-in-time formative assessment and attendance monitoring.**
Sivakumar Manickam, Mohamed Al Ismaili, Rajmohan Chidambaram Sivamani, Sapna Dileesh.
Discover Education. Published 12 November 2025.
DOI: [10.1007/s44217-025-00960-2](https://doi.org/10.1007/s44217-025-00960-2).
- 7. Optimized Hybrid Approach for Anomaly Detection of DDoS and Network Attacks in IoMT Systems using Autoencoders and TabNet.**

K. G, **S. Sivakumar**, and **S. Manickam**.

4th International Conference on Mobile Networks and Wireless Communications (ICM-NWC), Tumkuru, India, 2024, pp. 1–7.

DOI: [10.1109/ICMNWC63764.2024.10872358](https://doi.org/10.1109/ICMNWC63764.2024.10872358).

8. A Study to Check the Readiness of Final-Year Dental Students Vis-à-Vis to a Safe and an Independent Practitioner in Sultanate of Oman Amidst the Recent Pandemic.

Triveni Nalawade, Sanjay Saraf, Rachappa Mallikarjuna, Belal Haj-Hamed, **Siva Kumar**, Nutayla Al Harthy, Mohamed Al Ismaily.

International Journal of Dentistry, Volume 2024, Article ID 7476437. Published 15 October 2024.

DOI: [10.1155/2024/7476437](https://doi.org/10.1155/2024/7476437).

9. Enhancing Accessibility: Exploring the Impact of AI in Assistive Technologies for Disabled Persons.

Krishnan, R., and **Manickam, S.**

Nafath, 2024(9).

DOI: [10.54455/MCN2505](https://doi.org/10.54455/MCN2505).

10. Efficacy of a Novel Computerized Aid in Designing Removable Partial Dentures.

Sivamani Chidambaram R., Rajmohan S., **Manickam S.**, et al.

Cureus, 2024, 16(2): e54581.

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11. Acceptance of Technology by Parent Fraternity as a Means of Remote Learning for Children: An Empirical Study.

Gokuladas, V. K., and **Manickam, S.**

International Journal of Educational Technology and Learning, 15(1), 38–44 (2023).

DOI: [10.55217/101.v15i1.688](https://doi.org/10.55217/101.v15i1.688).

12. Sultanate of Oman: Building a Dental Workforce.

JE Gallagher, **Siva Kumar**, NHF Wilson.

Human Resources for Health, 13(1), 50 (2015).

DOI: [10.1186/s12960-015-0037-z](https://doi.org/10.1186/s12960-015-0037-z).

13. Creeping Flow Past Spheres — Insights on Flow Properties through 3D Simulation Studies.

Siva Kumar, M., and P. Philominathan.

International Journal of Engineering Simulation, 13(2), July 2012. ISSN 1468-1137.

14. Robo-Linked Purcell’s Swimmer.

Siva Kumar, M., and P. Philominathan.

International Journal of Fluid Mechanics Research, 38(6) (2011): 565–571.

DOI: [10.1615/InterJFluidMechRes.v38.i6.90](https://doi.org/10.1615/InterJFluidMechRes.v38.i6.90).

15. Bringing Out Fluids Experiments from Laboratory to *In Silico* – A Journey of Hundred Years.

Siva Kumar, M., and P. Philominathan.

American Journal of Computational Mathematics, 1(4) (2011): 271–280.

DOI: [10.4236/ajcm.2011.14033](https://doi.org/10.4236/ajcm.2011.14033).

16. **Computational Fluid Dynamics Modeling Studies on Bacterial Flagellar Motion.**
Siva Kumar, M., and P. Philominathan.
International Journal of Fluid Machinery and Systems, 4(3) (2011): 341–348.
JOI: [JST.JSTAGE/ijfms/4.341](https://doi.org/10.1007/s11633-012-0651-7).
17. **Purcell’s Swimmer Revisited.**
Siva Kumar, M., and P. Philominathan.
International Journal of Automation and Computing, 9(3) (2011): 325–330.
DOI: [10.1007/s11633-012-0651-7](https://doi.org/10.1007/s11633-012-0651-7).
18. **The Physics of Flagellar Motion of *E. coli* During Chemotaxis.**
Siva Kumar, M., and P. Philominathan.
Biophysical Reviews, 4(1) (2010): 13–20.
DOI: [10.1007/s12551-009-0024-5](https://doi.org/10.1007/s12551-009-0024-5).

Popular Science Articles

1. **Pen out. Calculator in. Brain at risk. Thanks, AI.**
Dr Sivakumar Manickam.
Times of Oman, Monday 09th March, 2026.
Link: [Times of Oman Article](#).
2. **Reimagining Higher Education for Digital Natives: Educational Technology Innovation at Oman Dental College.**
Dr Sivakumar Manickam.
TechOman, Saturday, February 28, 2026.
Link: [TechOman Article](#).
3. **A Geological Paradise on Earth.**
Dr Sivakumar Manickam.
Oman Observer, Thursday 10th, December 2020.
Link: [Oman Observer Article](#).
4. **The Art and Science of Lying.**
Dr Sivakumar Manickam.
Oman Observer, Sunday 29th, November 2020.
Link: [Oman Observer Article](#).
5. **A Viral Story.**
Dr Sivakumar Manickam.
Oman Observer, Thursday 12th, November 2020.
Link: [Oman Observer Article](#).
6. **Virtual meetings, real minds and Zoom fatigue.**
Dr Sivakumar Manickam.
Oman Observer, Thursday 5th, November 2020.
Link: [Oman Observer Article](#).
7. **The Art of Learning.**
Dr Sivakumar Manickam.
Oman Observer, Monday 16th, March 2020.
Link: [Oman Observer Article](#).

- 8. When tomorrow becomes yesterday.**
Dr Sivakumar Manickam.
Oman Observer, Monday 7th, March 2016.
Link: [Observer PDF](#).
- 9. Newton's Apple and Karan's iPhone.**
Dr Sivakumar Manickam.
Oman Observer, Monday 22nd, February 2016.
Link: [Observer PDF](#).
- 10. Keep calm and observe ants.**
Dr Sivakumar Manickam.
Oman Observer, Monday 15th, February 2016.
Link: [Observer PDF](#).
- 11. Jane, your name tastes like purple.**
Dr Sivakumar Manickam.
Oman Observer, Monday 8th, February 2016.
Link: [Observer PDF](#).
- 12. If I only had a brain: With cloud backup.**
Dr Sivakumar Manickam.
Oman Observer, Monday 1st, February 2016.
Link: [Observer PDF](#).
- 13. This won't hurt a little bit.**
Dr Sivakumar Manickam.
Oman Observer, Monday 25th, January 2016.
Link: [Observer PDF](#).
- 14. Turn left or right? Always left with the fact that Jane is right.**
Dr Sivakumar Manickam.
Oman Observer, Sunday 29th, February 2016.
Link: [Observer PDF](#).