

DR. SUDEEP KUMARA K.

Associate Professor | Department of Physics | School of Engineering

Dayananda Sagar University, Bengaluru, Karnataka, India

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PROFESSIONAL PROFILE

Academic and research professional in Physics with expertise in Radiation Protection, Environmental Radioactivity, Radioecology, Health Safety, Medical Physics and Material Science. Experienced in university teaching, interdisciplinary research, technology development, radiation monitoring and mitigation, funded research projects, postgraduate teaching, doctoral supervision, academic coordination and scientific collaboration.

CURRENT POSITION

Position	Organization	Period
Associate Professor, Department of Physics, School of Engineering	Dayananda Sagar University, Bengaluru	August 2025 – Present
Assistant Professor, Department of Physics, School of Engineering	Dayananda Sagar University, Bengaluru	2024 – August 2025

EDUCATION & PROFESSIONAL QUALIFICATIONS

Qualification	Institution	Year / Details
Ph.D. in Physics	Mangalore University	2010–2016; Studies on ^{222}Rn and ^{220}Rn adsorption characteristics in charcoal and development of a mitigation system
M.Sc. in Physics	Mangalore University	2007–2009; Condensed Matter Physics
B.Sc. (Physics, Chemistry & Mathematics)	Bangalore University	2004–2007
CSIR-RA Postdoctoral Fellowship	CARER, Mangalore University	2018–2021; Indoor air change rates through radon time-series measurements
Training-cum-RSO Certification (Category-I)	Bhabha Atomic Research Centre, Mumbai	2021; Radiation safety aspects of gamma irradiation chamber
Diploma in Computer Application	NICE	2006

ACADEMIC & PROFESSIONAL EXPERIENCE

Period	Designation / Organization	Key Responsibility
2025–Present	Associate Professor, DSU	Teaching and Research
2024–2025	Assistant Professor, DSU	Teaching and Research
2021–2024	Scientific Officer, CARER, Mangalore University	Teaching and Research; Postgraduate Medical Physics
2018–2021	CSIR-RA Postdoctoral Fellow, CARER, Mangalore University	Research and Teaching; Postgraduate Medical Physics
2017–2018	Assistant Professor, Regional Institute of Education (NCERT), Mysuru	Undergraduate and postgraduate teaching and research
2016–2017	Guest Faculty, Mangalore University	Physics teaching and practicals
2012–2016	Senior Research Fellow, Mangalore University–BARC	Research
2010–2012	Junior Research Fellow, Mangalore University–BARC	Research
2009–2010	Guest Faculty, Mangalore University	Physics teaching

RESEARCH AREAS

- Material Science
- Radiation protection, environmental radioactivity and radioecology
- Environmental and workplace radiation monitoring and mitigation
- Radon (^{222}Rn) and thoron (^{220}Rn) measurement, transport and mitigation
- Radiological impact assessment around nuclear facilities and mining regions
- Environmental transfer factors and transfer coefficients for radionuclides
- Medical Physics and health safety
- Application of radionuclides in environmental studies, including soil erosion, sedimentation, atmospheric mixing and related tracer studies

RESEARCH OUTCOME

Research paramter	Numbers
Journal publications	45
Conference/seminar papers	57
Newsletter/bulletin articles	1
Books / proceedings	4
Project reports	4
General / popular articles	4
Patents	3
Google Scholar citations	823
h-index	14
i10-index	21
ResearchGate Interest Score	545.5

RESEARCH PROJECTS

Research Project	Duration	Funding Agency	Grant
Study of ^{220}Rn adsorption in charcoal and vegetable oils for ^{220}Rn mitigation application in off-gas stream	2009–2014	BARC	₹38 lakh
Estimation of dose due to radon and thoron progeny and establishing the equilibrium factor distribution for the southern region of India	2014–2019	BRNS	₹55 lakh
Detailed radiological studies comprising baseline radiation levels and radionuclide concentrations in environmental matrices in and around Doddla Ullarhi, Challakere	2013–2015	BARC	₹32.7 lakh
National coordinated project for establishing gamma radiation levels using TLDs	2015–2018	BARC	₹12 lakh
Development of a method for the estimation of indoor air change rates through radon (^{222}Rn) time-series measurements	2018–2021	CSIR	₹17.5 lakh
Inter-Institutional Collaborative Project on site-specific environmental transfer factors for radionuclides around IGCAR, Kalpakkam	2020–2023	IGCAR	₹43 lakh
Monitoring and Predicting Radionuclide Uptake and Dynamics in Tropical Monsoonal Climate for Optimizing Remediation of Radioactive Contamination in Agriculture	2020–2023	IAEA, Austria	Collaborative project
Iodine aerosol facility for studies on generation, characterization, evolution and deposition in context of severe nuclear reactor accident	2023–2026	BRNS	₹47.3 lakh

TECHNOLOGY DEVELOPMENT & INNOVATION

- Developed thoron mitigation technology and a prototype system for application in thorium processing facilities; technology transferred to BARC, Mumbai in 2015.
- Contributed to development of a large radon calibration chamber in the Asia-Pacific region using innovative soil-gas harvesting as a stable radon source.
- Developed a ^{222}Rn -incremented method for rapid determination of air-exchange/ventilation rate using soil gas.

Ph.D. SUPERVISION

Name of the Ph.D student	Registration No.	Research Topic
Karunya A S	ENG24PFBS11	Development of a 6-axis extension board to upgrade existing 3-axis tables for effective head and neck cancer treatment
Padmanabha Patteri K P	ENG25PFBS17	Effect of gamma irradiation on the structural and functional properties of polyaniline composites

JOURNAL PUBLICATIONS

2026

1. Yashodhara, I., **Sudeep Kumara, K.**, Mahendra, K., & Karunakara, N. (2026). Radon in groundwater and associated dose to the public in a uranium-mineralised region of India. *Environmental Geochemistry and Health*, 48, 350. DOI: 10.1007/s10653-026-03204-w.
2. **Sudeep Kumara, K.**, Yashodhara, I., Mahendra, K., Nagaraja, B. S., Shenoy, V. R., Dsouza, S., Lakshmanan, M., Jose, J., & Karunakara, N. (2026). Assessment of natural radioactivity and radiation dose distribution in the Western Ghats region of Karnataka, India. *Environmental Monitoring and Assessment*, 198, 653. DOI: 10.1007/s10661-026-15495-8.
3. Ramesh Babu, U. J., Mahendra, K., Yashodhara, I., Pattar, J., Megha, G., & **Sudeep Kumara, K.** (2026). Charge-engineered nitrogen and phosphorus-doped ZnO/g-C3N4 nanorods for rapid photocatalytic purification of water from harmful effluents. *Journal of Nanoparticle Research*, 28, 147. DOI: 10.1007/s11051-026-06676-0.
4. Pattar, J., Sarvesh Chandra, S., Sreekanth, R., Srinivas, M., Mahendra, K., Madihally, N., Yashodhara, I., & **Sudeep Kumara, K.** (2026). Interfacial polarization-driven charge transport in polyaniline/NiS nanocomposites. *Materials Science and Engineering: B*, 329, 119470.

2025

5. **Sudeep Kumara, K.**, Karunakara, N., Mayya, Y. S., & Pratim Biswas. (2025). Assessment of health risk due to the inhalation of respiratory particulate matter generated in the community kitchens. *Environmental Monitoring and Assessment*, 197, 266. DOI: 10.1007/s10661-025-13688-1.
6. K. V. Reshma, K. Sandeep, Anish K. Warriar, Srinivas Bikkina, Jithin Jose, G. H. Aravind, A. S. Yamuna, S. J. Gayathri, Rajveer Sharma, Reji Srinivas, N. Karunakara, K. **Sudeep Kumara K.** (2025). Paleorainfall during the past two millennia in the Western Ghats, south-western India: Evidence from a multi-proxy lacustrine sedimentary record. *Quaternary International*, 725–726, 109740. DOI: 10.1016/j.quaint.2025.109740.

2024

7. A. P. Vijith, N. Karunakara, Rosaline Mishra, B. K. Sahoo, Mirosław Janik, **Sudeep Kumara**, B. K. Sapra, Shinji Tokonami, Chutima Kranrod, S. Chandrasekaran, N. Chitra, Seon hong, Juhee Yoo, Chao Zhao, Bo Chen, Hong-Gi Kim, Jin-il Kim, Josef Holecek, Le Dinh Cuong. (2024). International intercomparison and quality assessment of passive and active ²²²Rn measuring devices in the Asia-Pacific region. *Radiation Measurements*, 178, 107295. DOI: 10.1016/j.radmeas.2024.107295.
8. Srinivasan Ramaswamiah, S. A. Pandit, Manoj Kumar Jindal, Gowrisankar Ganesan, Kavitha Devi Ramkumar, Karunakara Naregundi, Jean Riotte, **K. Sudeep Kumara**, Hemant Moger. (2024). Sustainable solution for drinking water supply in rural India affected by groundwater pollution. *Current Science*, 127(6), 719–728. DOI: 10.18520/cs/v127/i6/719-728.
9. Anu David Raj, Suresh Kumar, Justin George K. Sooryamol K. R., & **Sudeep Kumara K.** (2024). Soil redistribution rates along the forested and cultivated steep hillslope in the mid-Himalayas using fallout-¹³⁷Cs and RUSLE model. *Land Degradation & Development*. DOI: 10.1002/ldr.5258.
10. Sandeep, G. H. Aravind, A. K. Rafaz, Anish K. Warriar, A. V. Sijinkumar, Firoz Badesab, Rajveer Sharma, B. S. Mahesh, N. Karunakara, **K. Sudeep Kumara**, R. J. Prakash, J. S. Karthika, S. M. Anagha, P. K. Vishnu. (2024). A multi-proxy lacustrine sedimentary record of sub-decadal to decadal scale variability of monsoon during the late Holocene in southern India. *Journal of Asian Earth Sciences*, 270, 106196. DOI: 10.1016/j.jseae.2024.106196.

11. Deepika D. N., Ambika M. R., Karunakara N., **Sudeep Kumara K.**, Vinodh Kumar, Nagaiah N. (2024). Studies on Uranium Concentration in Groundwater Samples and its associated health hazards to the residents of surrounding regions of Manchanabele Reservoir, Bengaluru, Karnataka, India. *Radiation Protection Dosimetry*, 200, 1084–1089. DOI: 10.1093/rpd/ncae044.
12. Yashodhara I., **Sudeep Kumara K.**, & Karunakara N. (2024). 226Ra, 210Pb and 210Po in soil of a prospective uranium mining region of North Karnataka, India. *Journal of Radioanalytical and Nuclear Chemistry*, 334, 303–314. DOI: 10.1007/s10967-024-09880-1.

2023

13. **Sudeep Kumara, K.**, Karunakara, N., & Mayya, Y. S. (2023). Development of a ²²²Rn incremented method for the rapid determination of air exchange rate using soil gas. *Journal of Environmental Radioactivity*, 257, 107076. DOI: 10.1016/j.jenvrad.2022.107076.
14. Srinivasan, R., Pandit, S. A., Ganesh Khatei, Karunakara, N., **Sudeep Kumara, K.**, Jean Riotte, Hemant Moger, P. Amala David, Manoj Jindal, G. Gowri Sankar, Kavitha Devi Ramkumar. (2023). Reverse osmosis units in groundwater based public water supply system in rural eastern Karnataka: an analysis. *Current Science*, 123(12), 1493–1498. DOI: 10.18520/cs/v123/i12/1493-1498.
15. Girish Gopinath, T. R. Resmi, N. Karunakara, P. Manjula, N. P. Jesiya, **K. Sudeep Kumara**, Reji Srinivas. (2023). How Long a Tropical Mountainous Lake Can Survive? Inferences from Geochemistry and Radiometric Measurements of Pookode Lake, Kerala, India. *Journal of the Geological Society of India*, 99, 840–846. DOI: 10.1007/s12594-023-2391-0.
16. Manoj Kumar Jindal, S. A. Pandit, N. Karunakara, M. S. Chandrashekara, **Sudeep Kumara**, Vipin Kumar, Deepak Salim, R. Srinivasan. (2023). High uranium dose from the groundwater in a granitic terrain in the eastern part of Karnataka, India. *Journal of Radioanalytical and Nuclear Chemistry*. DOI: 10.1007/s10967-023-09053-6.
17. Vimal Mehta, Amit Kumar, Deep Shikha, Chandan Kapil, Sunita Dahiya, **Sudeep Kumara**, N. Karunakara. (2023). Assessment of concentration of radium, thorium, and potassium in soils of Rohtak and Jind districts of Haryana. *Journal of Radioanalytical and Nuclear Chemistry*. DOI: 10.1007/s10967-023-09175-x.

2022

18. Debajit Chaudhury, Utsav Sen, Bijay Kumar Sahoo, Nagesh N. Bhat, **Sudeep Kumara, K.** Karunakara, Siddhartha Biswas, Sudheer Shenoy, Bipasha Bose. (2022). Thorium promotes lung, liver and kidney damage in BALB/c mouse via alterations in antioxidant systems. *Chemico-Biological Interactions*, 363, 109977. DOI: 10.1016/j.cbi.2022.109977.
19. Ujwal P., Yashodhara I., **Sudeep Kumara K.**, Ravi P. M., & Karunakara N. (2022). Evaluation of soil to grass transfer factor (Fv) and grass to cow milk transfer coefficient (Fm) for strontium for equilibrium condition in a tropical monsoonal climate region of the Indian subcontinent. *Scientific Reports*, 12, 7528. DOI: 10.1038/s41598-022-11388-1.
20. Srinivasan R., Pandit S. A., Ganesh Khatei, Karunakara N., **Sudeep Kumara K.**, Jean Riotte, Hemant Moger, P. Amala David, Manoj Jindal, G. Gowri Sankar, Kavitha Devi Ramkumar. (2022). Reverse osmosis units in groundwater based public water supply system in rural eastern Karnataka: an analysis. *Current Science*, 123(12), 1493–1498. DOI: 10.18520/cs/v123/i12/1493-1498.

2021

21. Srinivasan R., Pandit S. A., Karunakara N., Deepak Salim, **Sudeep Kumara K.**, Rajesh Kumar M., Ganesh Khatei, Kavitha Devi Ramkumar. (2021). High uranium concentration in groundwater used for drinking in parts of Eastern Karnataka State, India. *Current Science*, 121(11), 1459–1469. DOI: 10.18520/cs/v121/i11/1459-1469.

2020

22. Primal V. Pinto, **Sudeep Kumara K.**, & Karunakara N. (2020). Mass exhalation rates, emanation coefficients and enrichment pattern of radon, thoron in various grain size fractions of monazite rich beach placers. *Radiation Measurements*, 130, 106220. DOI: 10.1016/j.radmeas.2019.106220.

23. S. Trilochana, H. M. Somashekarappa, **K. Sudeep Kumara**, Y. S. Mayya, N. Karunakara. (2020). CFD-based simulation and experimental verification of ^{222}Rn distribution in a walk-in type calibration chamber. *Journal of Radioanalytical and Nuclear Chemistry*, 323, 507–513. DOI: 10.1007/s10967-019-06957-0.
24. Tarun Kumar Agarwal, Jitendra J. Gaware, Bijay Kumar Sahoo, Balvinder Sapra, Trilochana Shetty, D. Datta, **Sudeep Kumara K.**, Karunakara Naregundi. (2020). Numerical simulation of ^{222}Rn profiling in an experimental chamber using CFD technique. *Journal of Environmental Radioactivity*, 220–221, 106298. DOI: 10.1016/j.jenvrad.2020.106298.
25. Trilochana Shetty, Y. S. Mayya, **K. Sudeep Kumara**, B. K. Sahoo, B. K. Sapra & N. Karunakara. (2020). A periodic pumping technique of soil gas for ^{222}Rn stabilization in large calibration chambers: Part 2 – theoretical formulation and experimental validation. *Scientific Reports*, 10, 16548. DOI: 10.1038/s41598-020-71872-4.
26. N. Karunakara, Trilochana Shetty, B. K. Sahoo, **K. Sudeep Kumara**, B. K. Sapra, Y. S. Mayya. (2020). An innovative technique of harvesting soil gas as a highly efficient source of ^{222}Rn for calibration applications in a walk-in type chamber: part-1. *Scientific Reports*, 10, 16547. DOI: 10.1038/s41598-020-73320-9.

2019

27. Mirosław Janik, Shinji Tokonami, Kazuki Iwaoka, Naregundi Karunakara, Shetty Trilochana, Mandya Purushotham Mohan, **Sudeep Kumara**, Indaje Yashodhara, Weihai Zhuo, Chao Zhao, Fangdong Tang, Supitcha Chanyotha, Chutima Kranrod, Darwish Al-Azmi, Osamu Kurihara. (2019). Comparison of Radon and Thoron Concentration Measuring Systems Among Asian Countries. *International Journal of Environmental Research and Public Health*, 16(24), 5019. DOI: 10.3390/ijerph16245019.
28. Trilochana S., Somashekarappa H. M., **Sudeep Kumara K.**, Mohan M. P., Rashmi Nayak S., Renita Shiny D'Souza, Srinivas S. Kamath, B. K. Sahoo, J. J. Gaware, B. K. Sapra, Mirosław Janik, Darwish Al-Azmi, Y. S. Mayya. (2019). A walk-in type calibration chamber facility for ^{222}Rn and progeny measuring devices and inter-comparison measurements. *Radiation Protection Dosimetry*, 187(4), 466–481. DOI: 10.1093/rpd/ncz188.
29. Darwish Al-Azmi, **Sudeep Kumara**, M. P. Mohan, N. Karunakara. (2019). Gamma dose rates in the high background radiation area of Mangalore region, India. *Radiation Protection Dosimetry*, 184(3–4). DOI: 10.1093/rpd/ncz063.
30. S. Rashmi Nayak, Renita Shiny D'Souza, S. Srinivas Kamath, M. P. Mohan, S. Bharath, Trilochana Shetty, **K. Sudeep Kumara**, B. Narayana, B. N. Dileep, P. M. Ravi, N. Karunakara. (2019). Organically bound tritium: optimization of measurements in environmental matrices by combustion method and liquid scintillation spectrometry. *Journal of Radioanalytical and Nuclear Chemistry*, 319, 917–926. DOI: 10.1007/s10967-018-6395-y.
31. M. P. Mohan, Renita Shiny D'Souza, S. Rashmi Nayak, Srinivas S. Kamath, Trilochana Shetty, **K. Sudeep Kumara**, Y. S. Mayya, N. Karunakara. (2019). Influence of rainfall on atmospheric deposition fluxes of ^7Be and ^{210}Pb in Mangaluru (Mangalore) at the Southwest Coast of India. *Atmospheric Environment*, 202, 281–295. DOI: 10.1016/j.atmosenv.2019.01.034.

2018

32. N. Karunakara, P. Ujwal, I. Yashodhara, **K. Sudeep Kumara**, M. P. Mohan, K. Bhaskar Shenoy, P. V. Geetha, B. N. Dileep, Joshi P. James, P. M. Ravi. (2018). Estimation of Air to Grass Mass Interception Factors for Iodine. *Journal of Environmental Radioactivity*, 186, 71–77. DOI: 10.1016/j.jenvrad.2017.06.018.
33. M. P. Mohan, Renita Shiny D'Souza, Rashmi S. Nayak, Srinivas S. Kamath, Trilochana Shetty, **K. Sudeep Kumara**, Yashodhara I., Y. S. Mayya, N. Karunakara. (2018). Temporal variations of ^7Be and ^{210}Pb in South West Coast of India. *Journal of Environmental Radioactivity*, 192, 194–207. DOI: 10.1016/j.jenvrad.2018.06.018.

2017

34. Sahoo, B.K., **Sudeep Kumara, K.**, Karunakara N., Gaware, J.J., Sapra, B.K., Mayya, Y.S. (2017). Thoron Mitigation System based on charcoal bed for applications in thorium fuel cycle facilities (part 1): Development of theoretical models for design considerations. *Journal of Environmental Radioactivity*, 172, 237–248. DOI: 10.1016/j.jenvrad.2017.03.015.
35. **Sudeep Kumara, K.**, B.K. Sahoo, J.J. Gaware, B.K. Sapra, Y.S. Mayya, Karunakara N. (2017). Thoron Mitigation System based on charcoal bed for applications in thorium fuel cycle facilities (part 2): Development,

characterization, and performance evaluation. *Journal of Environmental Radioactivity*, 172, 249–260. DOI: 10.1016/j.jenvrad.2017.03.016.

2015

36. Karunakara N., **Sudeep Kumara, K.**, Yashodhara I., Sahoo B.K., Gaware J.J., Sapra B.K., Sahoo B.K., Mayya Y.S. (2015). Evaluation of radon adsorption characteristics of a coconut shell-based activated charcoal system for radon and thoron removal applications. *Journal of Environmental Radioactivity*, 142, 87–95. DOI: 10.1016/j.jenvrad.2014.12.017.
37. Geetha P.V., Ujwal Prabhu, Yashodhara I., **Sudeep Kumara K.**, Rupali Karpe, Ravi P.M., Nicy Ajith, Swain K.K., Karunakara N. (2015). Grass to cow milk transfer coefficient (Fm) for Iodine for equilibrium and emergency conditions. *Journal of Radiation Protection and Environment*, 37(1), 14–20.

2014

38. Karunakara N., Yashodhara I., **Sudeep Kumara K.**, Tripathi R.M., Menon N. Sanjeev, Kadam Sonal, Chougankar M.P. (2014). Assessment of Ambient Gamma Dose Rate around a Prospective Uranium Mining Area of South India - A Comparative Study of Dose by Direct Methods and by Soil Radioactivity. *Results in Physics*, 4, 20–27. DOI: 10.1016/j.rinp.2014.02.001.
39. **Sudeep Kumara K.**, Karunakara N., Yashodhara I., Sapra B.K., Sahoo B.K., Gaware J.J., Kanse S.D., Mayya Y.S. (2014). Effect of humidity on thoron adsorption in charcoal bed. *Journal of Radiation Protection and Environment*, 37(2), 77–79.

2013

40. Karunakara N., Ujwal P., Yashodhara I., Chetan Rao, **Sudeep Kumara K.**, Dileep B.N., Ravi P.M. (2013). Studies on soil to grass transfer factor (Fv) and grass to milk transfer coefficient (Fm) for cesium in Kaiga region. *Journal of Environmental Radioactivity*, 124, 101–112. DOI: 10.1016/j.jenvrad.2013.03.008.
41. N. Karunakara, Chetan Rao, P. Ujwal, I. Yashodhara, **Sudeep Kumara K.**, P.M. Ravi. (2013). Soil to rice transfer factors for ²²⁶Ra, ²²⁸Ra, ²¹⁰Pb, ⁴⁰K and ¹³⁷Cs: a study on rice grown in India. *Journal of Environmental Radioactivity*, 118, 80–92. DOI: 10.1016/j.jenvrad.2012.11.002.

2012

42. Primal D'Cunha, Y. Narayana, N. Karunakara, I. Yashodhara, **Sudeep Kumara K.** (2012). Concentration of ²²²Rn in drinking water along coastal Kerala and evaluation of ingestion doses. *Journal of Radiation Protection and Environment*, 34(3), 197–200.
43. P. Ujwal, N. Karunakara, I. Yashodhara, Chetan Rao, **Sudeep Kumara K.**, B.N. Dileep, P.D. Nayak, P.M. Ravi. (2012). Estimation of grass to milk transfer coefficient for cesium for emergency situations. *Journal of Radiation Protection and Environment*, 34(3), 210–212.

2011

44. Yashodhara I., Karunakara N., **Sudeep Kumara K.**, Rudramurthy, Tripathi R.M. (2011). Radiation levels and radionuclide distributions in soils of Gogi region, a proposed uranium mining region in North Karnataka. *Journal of Radiation Protection and Environment*, 34(4), 267–269.

MANUSCRIPTS UNDER REVIEW

45. Swaroop K., I. Yashodhara, C. S. Naveen, M. S. Murari, C. S. Shivanand, **K. Sudeep Kumara**, H. M. Somashekarappa, N. Karunakara (2025). Controlled Drug Release and Biocompatibility Analysis of Radiolytically Synthesised Curcumin-Infused PVA/Gelatin Hydrogels. *Journal of Pharmaceutical Sciences (Elsevier)*. Under Review.
46. Karanjit Leiphrakpam, **Sudeep Kumara K.**, Karunakara Naregundi, & Mamata Maisnam (2025). Studies of soil and rice samples from regions of Imphal Valley, Manipur using HPGe Gamma spectroscopy. *Journal of Radioanalytical and Nuclear Chemistry (Springer)*. Under Review.

PATENTS / PATENT APPLICATIONS

- Sathyamoorthy, B., Sudeep Kumara, K., Lakshmanan, M., & Sripan, C. (2026). Self-adjusting crop cutting blade assembly responsive to stem resistance. Indian Patent Application; filed 28 April 2026; published 24 July 2026. Applicant: Dayananda Sagar University.
- M. Lakshmanan et al., including Sudeep Kumara, K. (2026). A soil breath analyzer probe for real-time soil health and nutrient loss prediction. Indian Patent Application No. 202641061581 A; published 26 June 2026.
- Chaitra, B. V. et al., including Sudeep Kumara, K. (2026). Carbon-adaptive consensus controlled IoT network with energy-aware blockchain validation. Indian Patent Application No. 202641090618 A; published 31 July 2026.

AWARDS & HONOURS

- ISRP-NUCLEONIX Award – Best Experimental Research Award, 20th National Symposium on Radiation Physics (NSRP-20), 2015.
- Best Paper Award – National Conference on Radiation Awareness and Detection in Natural Environment (RADNET-I), 2015.
- Best Paper Award – 5th BRNS-DAE Symposium on Nuclear Analytical Chemistry-V, 2014.
- Best Paper Award – Indian Association for Radiation Protection Conference, 2014.

ACADEMIC LEADERSHIP, COORDINATION & SERVICE

- First-Year B.Tech Timetable Coordinator at Dayananda Sagar University.
- Subject Coordinator for Engineering Physics, Dayananda Sagar University.
- Introduced the open elective 'Medical Physics for Engineers' for B.Tech students at DSU.
- Coordinator, Dr. Chandramma Dayananda Sagar Distinguished Lecture Series on Nobel Prizes – 2023 in Engineering Sciences, DSU (2024).
- Organizing committee member for national and international conferences at Mangalore University, including NSRP-20, INCO-PoPb-2013 and IARP National Conference.
- Served as resource person/faculty in national training programmes, workshops and courses related to radiation, radioisotopes, environmental radioactivity and instrumentation.
- Contributed to NAAC SSR preparation at Mangalore University and served as Secretarial Assistant to IQAC in CARER.
- Reviewer for manuscripts for international journals including Radiation Protection and Dosimetry, Journal of Hazardous Materials, Journal of Environmental Radioactivity, Journal of Radioanalytical and Nuclear Chemistry, Results in Physics and related journals.

PROFESSIONAL FELLOWSHIPS & MEMBERSHIPS

- CSIR-RA Postdoctoral Fellowship, Council of Scientific & Industrial Research, Government of India.
- Junior Research Fellowship and Senior Research Fellowship, Bhabha Atomic Research Centre, Mumbai.
- Life Member, Indian Society for Radiation Physics (ISRP).
- Life Member, Indian Association for Radiation Protection (IARP), L.M. No. 1427.
- Life Member, Nuclear Track Society of India (NTSI), L.M. No. 413.
- Life Member, National Radon Network Society (NRNS).
- Life Member, Mangalore University Alumni Association.

INTERNATIONAL & NATIONAL RESEARCH COLLABORATIONS

International collaborations include institutions in Japan, Kuwait, China, Thailand, Qatar and the USA, including NIRS, University of Hiroaki, Fudan University, Shanghai Institute of Measurement and Testing Technology, Chulalongkorn University, Texas A&M University-Qatar, Washington University in St. Louis and University of Miami. National collaborations include BARC, IGCAR, nuclear power plant Environmental Survey Laboratories, IISc, IIT Bombay, JNU, ICAR institutes, IIRS and other universities/institutes.

SELECTED INVITED TALKS / ORAL PRESENTATIONS

- Basics of Radiation and Radioisotopes and their Applications – Sree Siddaganga College of Arts, Science and Commerce, Tumkur (2018).
- Activated Charcoal Adsorber Bed as a ^{222}Rn Hold-Up System for Application in Uranium Mining Industries – IARPNC-2018.
- Design, development and characterization of a charcoal-based thoron mitigation system for application in thorium processing facilities – NSRP-20 (2015).
- Experimental and theoretical considerations for designing an optimal activated charcoal bed for ^{220}Rn mitigation – RADNET-I (2015).
- Studies on radon and thoron mitigation using charcoal-based systems – NSRP-19 (2012).