

Dr. Vishnu C V

Assistant Professor

Department of Physics

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Dr. Vishnu C. V is a passionate researcher in the field of Nuclear Physics, with a strong academic foundation and six years of focused research experience. He earned his B.Sc. degree in Physics from Sree Kerala Varma College, under the University of Calicut, Kerala. He completed his M.Sc. in Physics at Baselius College, Kottayam, affiliated with Mahatma Gandhi University. He was awarded a Ph.D. in Physics by the University of Calicut in 2025 for his doctoral thesis titled *"Investigations on the Natural Radioactivity and Gamma Attenuation Properties of Building Materials."* His research interests lie primarily in natural radioactivity measurements in soil and rock samples, development and analysis of gamma-ray shielding materials, and heavy metal contamination assessment in environmental samples.

Dr. Vishnu has published over six research articles in reputed national and international journals and continues to contribute actively to the field of radiation physics and environmental radioactivity.

EDUCATION

Qualification	Institution	Year
Ph.D. in Physics	University of Calicut, Kerala, India	2017–2024
M.Phil. in Physics	University of Calicut, Kerala, India	2016–2017
M.Sc. in Physics	Mahatma Gandhi University, Kottayam, Kerala, India	2011–2013
B.Sc. in Physics	University of Calicut, Kerala, India	2008–2011

TOPICS OF RESEARCH

Natural radioactivity, Gamma attenuation, Gamma ray Shielding materials, Heavy Metal contamination

TITLE OF PH. D THESIS

"Investigations on the Natural Radioactivity and Gamma Attenuation Properties of Building Materials."

TECHNICAL KNOWLEDGE:

- Advanced knowledge of Radioactivity measurements and Gamma Spectrometric Analysis.
- Data analysis in XRD, EDXRF and ICPMS.
- Expertise in programming languages like C++, C, PYTHON and FORTRAN.

LIST OF PUBLICATIONS

- **As First Author**

1. **Vishnu C V** and Antony Joseph, Determination of natural radioactivity, hazard parameters and physico-chemical properties of soils from Palakkad-Thrissur district, Kerala, India. Materials Today: Proceedings, 55(2022), 127–134. <https://doi.org/10.1016/j.matpr.2021.12.548>.
2. **Vishnu C V** and Antony Joseph. Evaluation of Natural Radioactivity Levels and Exhalation rate of ^{222}Rn and ^{220}Rn in the Soil Samples from the Kuthiran Hills, Kerala, India. Journal of Nuclear Physics, Material Sciences, Radiation and Applications, 9(2), (2022) 229–239. <https://doi.org/10.15415/jnp.2022.92034>.
3. **Vishnu, C. V.**, Antony Joseph., Anju, K. (2023). Evaluation of the gamma radiation shielding characteristics of epoxy wall paint modified with micro sized Bi_2O_3 and WO_3 . Materials Today: Proceedings, xxxx. <https://doi.org/10.1016/j.matpr.2023.03.309>.
4. **Vishnu C. V** and Antony Joseph. Gamma-ray shielding analysis on natural rubber composites fortified with barium tungstate (BaWO_4). Radiation Physics and Chemistry, 216 (October 2024), 111389. <https://doi.org/10.1016/j.radphyschem.2023.111389>.
5. **Vishnu C V.** Antony Joseph, Vineethkumar V and Shimod K P, The dissemination of naturally occurring radionuclides in soil samples from urban regions along the National Highway in Kerala, India. (Accepted in the Journal of Discover applied Physics).
6. **Vishnu C. V** and Antony Joseph, Assessment of natural radioactivity and monitoring of radiological hazards in construction materials from Kerala, India. Indian Journal of Pure & Applied Physics. Vol. 62, August 2024, pp. 700-711. DOI: 10.56042/ijpap.v62i8.7746.

- **As a Co-author**

1. P.V. Thulasi, Antony Joseph, K.M. Varier, Somashekarappa H.M., Vinayak Anand Kamat, **Vishnu C.V.**, Coherent scattering cross sections of some rare earth compounds at small angles below 10° for 59.54 keV gamma rays. Radiation Physics and Chemistry, Vol. 202, 2023,110539, ISSN 0969-806X, <https://doi.org/10.1016/j.radphyschem.2022.110539>.
2. Nafeesa Baby, T., Vineethkumar, V., Shimod, K., **Vishnu C.V**, and Jayadevan, S. (2022). Heavy metal contamination in water sources of Thaliparamba municipality, Kerala, India. Radiation Protection and Environment, 45(1), 54. https://doi.org/10.4103/rpe.rpe_25_21.
3. Shimod, K. P., Vineethkumar, V., Prasad, T. K., Jayapal, G., and **Vishnu, C. V.** (2022). Radiological threat to the human in the context of alarming urbanization: a geographical enquiry on concentration of radionuclides in building materials used in Kannur district, Kerala, India. Journal of Radioanalytical and Nuclear Chemistry, 331(10), 4323–4333. <https://doi.org/10.1007/s10967-022-08488-7>.
4. Vinodkumar, T.; Vineethkumar, V.; **Vishnu C. V.**; Sayooj, V. V.; Prakash, V., Assessment of heavy metal enrichment and contamination in the wetlands of Kannur district, Kerala. Radiation Protection and Environment 44(3&4):p 152-160, Jul–Dec 2021. | DOI: 10.4103/rpe.rpe_22_21.

CONFERENCE PROCEEDINGS

1. **Vishnu C V** and Antony Joseph, Assessment of environmental radioactivity levels and associated radiogenic heat production in rock samples at locations spread along Thrissur-Palakkad highway region, Kerala, India. Proceedings of the DAE Symp. on Nucl. Phys. 65 (2021).
2. **Vishnu C V**, Antony Joseph, T A Sajith, and Sabu Thomas, Design of Flexible Gamma Ray Shielding Material Composite of Natural Rubber with Coconut Shell/Clay Powder. Proceedings of the DAE Symp. on Nucl. Phys. 64 (2019).
3. **Vishnu C V** and Antony Joseph, Gamma ray attenuation studies of cement pastes modified with naturally available additives. Proceedings of the DAE Symp. on Nucl. Phys. V. 63 (2018).

LIST OF SEMINARS/ WORKSHOPS/ SCHOOLS ATTENDED:

1. Vishnu C V. and Antony Joseph, The Gamma ray attenuation studies on concrete reinforced with coconut Shells, in the 62nd DAE-BRNS symposium on Nuclear Physics held at Thapar institute of Engineering and Technology, Patiala, Punjab Dec.15,2017.
2. Vishnu C V and Antony Joseph, Gamma Ray Attenuation Studies of Cement Pastes Modified with Naturally Available Additives, in the 63rd DAE-BRNS symposium held on Nuclear Physics. BARC Mumbai, Maharashtra. Dec.6, 2018.

3. Vishnu C V. and Antony Joseph, Utilization of Perlite and Vermiculite in Cement composites for gamma ray shielding applications, in the 31st Kerala Science Congress, held at Fathima College, Kollam, Kerala. Jan.13, 2019.
4. Vishnu C V, Antony Joseph, Sabu Thomas and Sajith T S, Design of Flexible Gamma Ray Shielding Material Composite of Natural Rubber with Coconut Shell/Clay Powder, in 64th DAE-BRNS symposium on Nuclear Physics Lucknow, Uttar Pradesh, Dec.13, 2019.
5. Vishnu C V., Antony Joseph, Sabu Thomas and Sajith T S, Influence of coconut shell powder contents on mechanical and gamma ray attenuation properties on natural rubber composites, In the International conference on Theoretical and experimental Physics (ICTEP-2020), held at Farook college, Kerala on January 13, 2020.
6. Vishnu C V and Antony Joseph, Determination of Natural Radioactivity, Hazard Parameters and Physico-Chemical Properties of Soils from Palakkad Thrissur District, Kerala, India., in the 9th National Conference on Condensed Matter Physics and Applications (CMPA-2021). Department Of Physics, Manipal Institute of Technology, Manipal, Karnataka, Dec 27, 2021.
7. Vishnu C V. and Antony Joseph, Evaluation of Natural Radioactivity Levels and Exhalation rate of ^{222}Rn and ^{220}Rn in the soil samples from the Kuthiran Hills, Kerala, India, in the Online International Conference on Recent Trends in Nuclear Physics. Chitkara University, Dharamshala, Himachal Pradesh. Oct 13-16, 2022.
8. Vishnu C V. and Antony Joseph, Assessment of Environmental radioactivity levels and associated radiogenic heat production in rock samples at locations spread along Thrissur-Palakkad highway region, Kerala, India., Held on the 65th DAE-BRNS symposium on Nuclear Physics, DAE Convention Centre, Anushaktinagar, Mumbai, Maharashtra. Dec. 18-23, 2022.
9. Vishnu C V. and Antony Joseph, Assessment of natural radioactivity levels in rocks of Kuthiran Tunnel and hills, Kerala, India. in the 34th Kerala Science Congress, KSCSTE, Thiruvananthapuram, Kerala, Dec.27-29, 2022.
10. Vishnu C V., Antony Joseph, Vineethkumar V and Shimod K P., Radiological assessment of urban soil in the National highway zone (NH-66) corridor of Kerala state, India., in the 23rd National Symposium on Radiation Physics (NSRP), Mysuru University January 19-21, 2023.