

# Curriculum Vitae

## **Contact Address:**

### **Office:**

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### **Residence**

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## **Permanent Address:**

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Telangana, INDIA.



## **Working at Dept. of Physics, IIT Roorkee since 3<sup>rd</sup> January 2011**

Also, associated with the Centre of Space Science and Technology (CSST), IIT Roorkee as a joint faculty since May 2023 and with Centre of Excellence in Disaster Mitigation and Management as an associated member since 2017

## **Research interests**

- **Experimental Nuclear Physics:** Growth and characterization of scintillation detectors for different applications; Development of GEANT4 Monte Carlo simulation codes for understanding the response of radiation detectors
- Nuclear Astrophysics
- Nuclear radiation-induced effects on materials
- Environmental radioactivity
- Promotion of Sanskrit language and Indian knowledge Systems (IKS)

## **Education**

<ul style="list-style-type: none"><li>• <b>Ph. D.</b> in Nuclear Physics (March 2002- June 2006) at Indian Institute of Technology, Kharagpur, India <u>Degree awarded in 2008</u></li></ul>	<b>Thesis Title:</b> <i>“Some studies on important aspects of charged particle spectroscopy with ionization detectors and some aspects of alpha induced fusion reactions with <sup>27</sup>Al”</i> under the supervision of Prof. S. L. Sharma.
<ul style="list-style-type: none"><li>• <b>M. Tech.</b> in Solid State Technology (Jul. 2000- Jan. 2002) at Indian Institute of Technology, Kharagpur, India</li></ul>	<b>Project Title:</b> <i>“Simulation of detector response for energetic heavy ions”</i> under the supervision of Prof. S. L. Sharma  CGPA: <b>8.91</b> (in a scale of <b>10</b> )

<ul style="list-style-type: none"> <li>• <b>M. Sc. in Physics</b> (July 1996-July 1998) Kakatiya University, Warangal, Andhra Pradesh, India</li> </ul>	Percentage of marks: <b>75%</b>
<ul style="list-style-type: none"> <li>• <b>B. Sc. in Mathematics, Physics and Chemistry</b> (July 1993- April 1996) Kakatiya University, Warangal, Andhra Pradesh, India</li> </ul>	Percentage of marks: <b>75%</b>

## **Professional Experience**

- ✓ Currently working as Associate Professor in the Department of Physics, Indian Institute of Technology Roorkee since 22<sup>nd</sup> December 2018.
- ✓ Worked as Assistant Professor from 23<sup>rd</sup> October 2012 to 21<sup>st</sup> December 2018 in the Department of Physics, Indian Institute of Technology Roorkee.
- ✓ Worked as Assistant Professor (On contract) from 3<sup>rd</sup> January 2011 to 22<sup>nd</sup> October 2012 in the Department of Physics, Indian Institute of Technology Roorkee.
- ✓ 5 months experience (16<sup>th</sup> July 2010 to 15<sup>th</sup> December 2010) as a lecturer in Physics at National Institute of Technology, Warangal, Telangana, India.
- ✓ Two years experience (July 1998 – June 2000) as a lecturer in physics at Chaitanya Degree and Post Graduate College, Hanamkonda, Telangana. I have also conducted laboratory classes for undergraduate students during this period.

## **Research Experience**

**Post Doctoral Fellow at Institute of Nuclear Physics, Krakow, Poland**  
**(worked with Prof. Adam Maj) (30<sup>th</sup> September 2009 – 28<sup>th</sup> September 2010):**

- ✓ Detailed GEANT4 simulations of PARIS (Photon Array for studies with Radioactive Ion and Stable beams) array which will be one of the new important detectors for the pan-European facility SPIRAL2, to be located in France.
- ✓ Testing of performance of LaBr<sub>3</sub>:Ce detectors of different sizes
- ✓ Participation in experiments at Heavy Ion Laboratory, Warsaw, Poland
- ✓ Participated in first AGATA experiment at Legnaro National Laboratory, Italy.

**Post Doctoral Fellow at Tata Institute of Fundamental Research, Mumbai, India**  
**(worked with Prof. Indranil Mazumdar) (9<sup>th</sup> May 2007 – 29<sup>th</sup> September 2009):**

- ✓ Response of new 4 $\pi$  sum-spin spectrometer consisting of 32 conical NaI(Tl) detectors, 14 NaI(Tl) detectors packed in castle geometry, 7 NaI(Tl) detectors in honeycomb configuration: Experimental measurements and GEANT4 simulations.
- ✓ True coincidence summing correction for large arrays of NaI(Tl) detectors and for a LaBr<sub>3</sub>(Ce) detector: Experimental measurements and GEANT4 simulations.
- ✓ Experimental studies on a LaBr<sub>3</sub>(Ce)-NaI(Tl) phoswich detector for X-ray and low energy  $\gamma$ -ray astronomy.
- ✓ Fold to multiplicity calculations for detector arrays in different configurations.

- ✓ Participated in two experiments
  1. Study of giant dipole resonance decay from hot rotating  $^{192}\text{Pt}$ .
  2. High spin structure of nuclei with  $A \sim 130$ .
- ✓ Augmentation of plastic scintillator for cosmic ray shielding using optical fiber.
- ✓ Participated in extensive testing of NaI(Tl) detectors of different sizes, different shapes and related electronics.

**Ph. D. student at Indian Institute of Technology (I. I. T.), Kharagpur**  
**(Supervisor: Prof. S. L. Sharma) (March 2002 – July 2006):**

- ✓ Development of Monte Carlo codes for simulations of response of gas-filled ionization chambers and silicon surface barrier detectors for heavy ions.
- ✓ Computations of ballistic deficits for ionization chamber pulses for CR-RC<sup>n</sup> (n=1-6) shaping network, sine<sup>n</sup> network, ORTEC 472 spectroscopic amplifier, etc.
- ✓ Experiments with a gas-filled ionization chamber and a silicon surface barrier detector in Nuclear Physics Division, Bhabha Atomic Research Center, Mumbai.
- ✓ Low energy alpha induced fusion reactions with 3 MV Pelletron accelerator at Institute of Physics, Bhubaneswar and the data analysis.
- ✓ Experimental studies on gamma radiation induced effects in structural, electrical, optical properties of TeO<sub>2</sub> thin films for radiation sensor and dosimetric applications.

**Collaborations**

1. BARC, Mumbai
2. TIFR, Mumbai

**Awards and Honors**

- ✓ Shortlisted in the top 15 faculty members at the institute level for outstanding teacher award, in 2018, 2019, 2020, and 2021, based on student feedback scores. The best faculty score obtained till now is 4.59/5 (For UG 1<sup>st</sup> year course of 177 students).
- ✓ Representing India in the World Water Forum to be held in Indonesia-2024.
- ✓ Designated by Atomic Energy Regulatory Board, Govt. of India as Radiation safety officer (RSO) for Gamma Chamber after attending a course followed by written exam and viva.
- ✓ Recipient of the *Samskruta Vrat* award in August 2022 on the occasion of World Sanskrit Day organized by Central Sanskrit University, New Delhi.
- ✓ Member of a committee to prepare “Road Map for Indian Knowledge Systems (IKS)/ Sanskrit in Technical Institute for Next Five Years”. The workshop was held at VNIT, Nagpur in collaboration with Central Sanskrit University, New Delhi in March 2023.

**Reviewer of journals:**

1. IEEE Transactions on Nuclear Science
2. Journal of Applied Physics
3. Nuclear Instruments and Methods in Physics Research–A
4. Review of Scientific Instruments
5. Nuclear Engineering and Design
6. Journal of Radio Analytical and Nuclear Chemistry
7. Pramana-Journal of Physics

**Sponsored Research Projects:**

<b>S.No.</b>	<b>Title of Project</b>	<b>Funding Agency</b>	<b>Financial Outlay</b>	<b>Year of start &amp; total period</b>	<b>Name of P.I. and other investigators</b>	<b>Status</b>
1	Studies with new scintillation detectors	DST	21 lakhs	2012 (3)	Self as PI	Completed
2	Studies on coincidence summing effects in scintillation detectors	IIT Roorkee	4.9 lakhs	2012 (3)	Self as PI	Completed
3	Mapping the low temperature and low spin phase diagram of atomic nuclei	DST Indo-polish	13 lakhs	2015 (3)	Prof. Arumugam (P.I.) Self (Co-P.I.) Prof. I. Mazumdar (Co-P.I.), TIFR, Mumbai	Completed
4	Development of study material on Sanskrit based knowledge systems.	IKS Division, Ministry of Education	7.5 lakhs	October 2022 (6 months)	Self (PI) with 5 Co-PIs	Completed
5	Development of Sanskrit Translator using Neural Machine Translation	IKS Division, Ministry of Education	10 lakhs	April 2022 (2 years)	Self (PI) Two Co-PIs	Ongoing
6	Development of the textbook material and supplementary material on Sanskrit-based Knowledge Systems for higher secondary and undergraduate students	AICTE	12.5 lakhs	June 2023	Self PI and 14 Co-PIs	Ongoing
7	Algorithm and software development for alpha continuous air monitor (ALCAM) along with synthesis	DRDO	9.9 lakhs	July 2023	Self as PI	Approved

	of indigenous detector					
8	Novel perovskite scintillators for high-resolution gamma spectroscopy and neutron-gamma discrimination	DST	69 Lakhs	March 2023	Self PI and one Co-PI	Under review
9	Biokinetic modelling of uranium in potable groundwater of Haridwar district in Uttarakhand state of India	UCOST	9.3 lakhs	June 2023	Self as PI and one Co-PI	Under review
10	3D-printed custom radiation shielding for onboard electronics in satellites	ISRO-STC	35 lakhs	July 2023	Self as PI and one Co-PI	Under Review

### **Teaching, Guidance and Mentorship**

1. Taught EM theory, Special theory of relativity, Nuclear Physics and its Applications, Modern Physics, Nuclear Astrophysics, Reactor Physics, Advanced Characterization Techniques, and Introduction to Sanskrit Knowledge Systems (IHS-325 as one of 8 faculty members)) at IIT Roorkee at UG, PG and PhD levels.
2. Developed 8-week NPTEL course “Nuclear Astrophysics” in January – April 2022 session. This is offered again in January – April 2023 session as well.
3. Mentored one National Post Doctoral Fellow (Dr. Mukesh Prasad) during 2017-18 and one institute postdoctoral fellow (Dr. Ashish Kumar) from August 2021 to February 2023.
4. First PhD student (Monalisha Dhibar) received PhD degree in October 2018. The title of her thesis was “Studies in nuclear structure and big bang nucleosynthesis using proton beams”. Her co-guide is Prof. Indranil Mazumdar, TIFR.
5. Second PhD student (Sheetal Rawat) received PhD degree in October 2019. The title of her thesis was “Studies on Pulse Shape Discrimination and Efficiency of GGAG:Ce Scintillators”. Her co-guide is Prof. S. C. Gadkari, BARC, Mumbai.
6. Third PhD student (Kalyani) received degree in 2023. The title of her thesis was “Growth And Characterization Of Scintillators For Thermal Neutron Detection”. Her co-guide is Dr. M. Tyagi, BARC, Mumbai.
7. Fourth PhD student (Shikha Panwar) received provisional degree in May 2023. The title of her thesis was “Measurements of total cross sections and astrophysical S factors for proton induced reactions on  $^{10,11}\text{B}$  isotopes”. Her co-guide is Prof. Indranil Mazumdar, TIFR.
8. Currently guiding, 6 Ph.D. students (5 as sole supervisor and one with co-supervisor) and one PhD student from IIT Kanpur as co-guide, and 1 M. Tech. student.
9. Guided 11 M. Tech. and 20 M.Sc. and 21 B. Tech. students in their dissertation work.
10. Mentored 3 students of IIT Kharagpur as part of the Alumni Mentorship program.
11. Mentored 2 students as part of SPARK scheme

### **Contributions at Institutional level and Departmental at IIT Roorkee (since 2011):**

- Convener, G-20 committee at the institute level from February 2023
- Convener of the Indian Knowledge Systems committee at the institute level since December 2023.
- Associate Dean of Students' Welfare (Students' Activities) from 4<sup>th</sup> January 2021 to 3<sup>rd</sup> January 2023.
- Convener, Institute Lecture Series Committee (January 2014-December 2021). Took lead role in organizing about 100 institute lectures.
- Faculty coordinator, Sanskrit club, IIT Roorkee (January 2015- ongoing). Organized 7 guest lectures and 3 workshops. Overall coordinator "Subhashitam Samskirtam", a 5-level online spoken Sanskrit course in association with Samskrita Bharati. Participants were from 30 countries.
- Member, Advisory Committee, Educational Multimedia Research Centre (EMRC), Roorkee (since 2019)
- Worked as Chief warden of married hostels and Khosla International House from August 2019 to January 2021.
- Member, ABN school management committee (2015- 2018 and July 2021-ongoing)
- Member of IPR Chair on Scientific Validation of Traditional Knowledge at IIT Roorkee
- Faculty Advisor, Electronics Section, Hobbies Club (2016-17)
- Program officer, National Service Scheme (2014-15)
- Overall coordinator of a workshop on "Introduction to Research" for students of IIT Roorkee: Course instructor was Prof. Shreepad Karmalkar, IIT Madras. Date: 12<sup>th</sup> October 2019
- Secretary, Indian Physics Association, Roorkee chapter (2011-14 and 2016-2022). Organized 17 guest lectures by faculty members and 24 seminars by PhD students.
- Chairman, Write-off committee, Dept, of Physics since January 2023.
- O.C., Radiation Detectors and Spectroscopy research lab since 2013
- O.C., Nuclear Physics teaching lab several times.

### **Contributions to Sanskrit promotion and to Indian Knowledge Systems as a faculty coordinator of Sanskrit club, IIT Roorkee (at the institution level)**

- As a convener, I organized the National Youth Conference on Indian Knowledge Systems-2023 as part of G-20 University Connect Program with about 500 participants ([www.iitr.ac.in/nyciks](http://www.iitr.ac.in/nyciks)). The organizing committee comprised 26 faculty members from 12 departments.
- Working as a faculty coordinator of the Sanskrit club, IIT Roorkee since 2016.
- Organized 2-day workshops on (1) Ancient Indian Astronomy by Prof. R. N. Iyengar in 2016 (2) How to study Indic sources by Prof. Shrinivasa Varakhedi in 2017 (3) Indic Reasoning and Debating by SVS Pune in 2018.
- Initiated the live performance of Vedic chanting by students during the beginning of annual convocation at IIT Roorkee (since 2017).
- Established library in Sanskrit club with about 60 books on Sanskrit and IKS.

- Organized 6 ten-day spoken Sanskrit classes in association with Samskrita Bharati for the students and faculty of IIT Roorkee.
- Organized 8 guest lectures by eminent academicians on topics related to Sanskrit and IKS.
- Coordinated the events as part of celebration of Sanskrit week since 2016.
- Overall coordinator of **Subhashitam Samskritam**, a 5-level online Sanskrit course from July 2020 to January 2021 in association of with Samskrita Bharati. Around 5100 participants from 30 countries have cleared the level-1. Honorable Minister of Education (then MHRD) has graced the occasion as a chief guest during the concluding ceremony of level-1. The age group of participants was from 8 to 90 years. About 2400 participants continued up to level-5 and cleared level-5. Received an appreciation letter from Honorable Prime Minister Shri Narendra Modi who lauded the efforts of IIT Roorkee in promoting Sanskrit through subhashitams. Several participants offered guru dakshina to IIT Roorkee after the completion of course.
- Currently, the YouTube channel of Sanskrit club has more than 20,600 subscribers, 15 lakhs views and 263 videos.
- After the completion of Subhashitam Samskritam in January 2020, organized a teacher training camp in February 2021 in association with Samskrita Bharati. Around 500 participants were trained to teach Samskritam in various places.
- Played instrumental role in creating SAMARPANAM (acronym for SAMskritaaya ARPANAM), a group of students and faculty from institutions of national importance to promote Sanskrit and coordinated the first ever conclave on Sanskrit organized in September 2020. Currently, the members are from 7 IITs, IISER Pune and IIIT Hyderabad.
- Arranged summer and winter internships for more than 20 B. Tech students and 1 M. Tech student of IIT Roorkee at different IITs and IISc Bengaluru who worked in the fields of Sanskrit and IKS.
- Organized first ever Hackathon in Sanskrit in November 2020 in association with Students Technical Council of IIT Roorkee.
- In October 2020, initiated a project on Sanskrit translator in association with Prof. Ganesh Ramakrishnan, IIT Bombay.
- Member of IPR Chair on Scientific Validation of Traditional Knowledge at IIT Roorkee 2016-17.

### **Invited Talks**

- 1) On “Advanced Scintillations Detectors for environmental radioactivity” during the first international conference on “Radiation Awareness and Detection in Natural Environment” held at Dehradun, Uttarakhand on March 4, 2023.
- 2) On “Scintillation detectors: Needs and trends” in online mode during 1<sup>st</sup> Nuclear Physics Workshop conducted by SVNIT, Surat on 16<sup>th</sup> April 2022
- 3) On "Inorganic scintillators: Recent advances and Trends", at Faculty Development Program in DAV College, Amritsar, India on 19<sup>th</sup> July 2021.
- 4) On "Measurement Techniques using Inorganic Scintillation Detectors", in online workshop on “Nuclear Energy and Measurement” under the Scheme for Promotion of Academic and Research Collaboration (SPARC) program, Government of India conducted by NIT, Trichy on 23<sup>rd</sup> September 2021.



### Monograph/book chapters

Contributed a chapter on “Measurement techniques using inorganic scintillation detectors” for the proposed monograph under SPARC project “Nuclear Energy and Measurement”. Co-authors are my PhD students Virender Ranga and Shikha Panwar

### Additional Information

- ✓ Senior Member of Institute of Electrical and Electronics Engineers (IEEE, 90447186)
- ✓ Secretary, Indian Physics Association (Roorkee Chapter)
- ✓ Life member of the International Radiation Physics Society (IRPS)
- ✓ Life member of the Indian Physical Society
- ✓ Life member of the Indian Physics Association (LM-12299)
- ✓ Life member of the Indian Nuclear Society
- ✓ Life member of the Indian Association for Physics Teachers (L6796)
- ✓ Life member of the Materials Research Society of India (L0839)
- ✓ Member, Member, Board of Directors, South Asia Alliance of Disaster Research Institutes (SAADRI)

### List of Publications in refereed journals

1. R.S. Aswal, Mukesh Prasad, Narendra Kumar Patel, A.L. Srivastav, **G. Anil Kumar**, R.C. Ramola, Johnbosco C. Egbueri, “Occurrences, sources and health hazard estimation of potentially toxic elements in the groundwater of Garhwal Himalaya, India”, *Nature Scientific Reports*, 13 (2023) 13069.
2. Mukesh K Meena, Thallada Bhaskar, **Anil K Gourishetty** and Deepak K Ojha, "Ionizing radiation as a pretreatment technique on the valorization of rice straw", *International Journal of Green Energy*, 2023. (DOI: 10.1080/15435075.2023.2234988 )
3. Annesha Karmakar, Anikesh Pal, **G. Anil Kumar**, Bhavika, V. Anand, Mohit Tyagi, "Deep Neural Network-based Pulse Shape Discrimination of Neutrons and  $\gamma$ -rays in organic scintillation detectors", *Pramana-Journal of Physics*, 97 (2023) 157.
4. Pallavi Aggarwal, Prashant Bisht, Abhishek Ghosh, **Anil Kumar Gourishetty**, Edward Yi Chang, Bodh Raj Mehta, and Rajendra Singh, "Gamma Ray Induced Surface Charge Redistribution and Change of Surface Morphology in Monolayer WS<sub>2</sub>", *ACS Applied Nanomaterials*, 6 (2023) 7404-7413.
5. V. Ranga, A. K. Rhine Kumar, I. Mazumdar, S. P. Weppner, S. Panwar, R. Saryal, S. M. Patel, P. B. Chavan, A. K. Rhine Kumar, **G. Anil Kumar**, "Measurements of absolute  $\gamma$ -ray cross sections for  $^{16}\text{O}(p,p'\gamma)^{16}\text{O}$  reaction", *Acta Physica Polonica B Proceedings Supplement*, 16, 4-A6 (2023)
6. Asit Srivastava, Rahul Chauhan, **G. Anil Kumar**, I. Mazumdar, "A Mathematical Approach to Calculate the Absolute Total Detection Efficiency of a  $4\pi$  NaI(Tl) Sum Spin Spectrometer", *Nucl. Instr. and Meth. in Phys. Res. – A* 1050 (2023) 168142.
7. Ashish Kumar, **G. Anil Kumar**, "Modification of lignin properties using alpha particles and gamma-rays for diverse applications", *Radiation Physics and Chemistry*, 202 (2023) 110562.
8. Mukesh Prasad, R.S. Aswa, Abhishek Joshi, **G. Anil Kumar**, R.C. Ramola, "A systematic study on occurrence, risk estimation and health implications of heavy metals in potable



- water from different sources of Garhwal Himalaya, India", *Nature Scientific Reports*, 12 (2022) 20419.
9. S. Rawat, Neeraj Kumar, V. Ranga, **G. Anil Kumar**, "Energy Response and Pulse Shape Discrimination studies of a 3- inch Liquid Scintillator", *Materials Today: Proceedings*, 67 (2022) 858-862.
  10. Kalyani, Mohit Tyagi, A. K. Singh, Sonu and **G. Anil Kumar**, "Growth, luminescence, defects and scintillation properties of Sr co-doped LiI:Eu single crystal scintillator", *Materials Today Communications*, 29 (2021) 103011.
  11. Kalyani, Mohit Tyagi, Sheetal Rawat and **G. Anil Kumar**, Performance studies of compact GGAG:Ce,B thermal neutron detector coupled to Si-based photosensors, *Pramana-Journal of Physics*, 95 (2021) 211.
  12. Sanjeet S. Kaintura, V. Ranga, S. Panwar, Kalyani, P. Sehgal, **G. Anil Kumar**, "Energy Resolution of Compton Electrons in LaCl<sub>3</sub>:Ce using Compact Digitizer", *Journal of Radioanalytical and Nuclear Chemistry*, 330 (2021) 1527-1531.
  13. R. Sariyal, I. Mazumdar, Y. M. Sharma, S. M. Patel, P. B. Chavan, V. Ranga, S. Panwar, **A. K. Gourishetty**, S. Dubey, "Characterisation of a small volume (1" x 1") CeBr<sub>3</sub> crystal for  $\gamma$ -ray measurements up to 4.4 MeV", *Journal of Instrumentation*, 16 (2021) T01004
  14. Kalyani, Mohit Tyagi, A. K. Singh, Tarun Patel, P. S. Sarkar, S. S. Desai, **G. Anil Kumar**, "Thermal neutron discrimination using a novel phoswich detector of Gd<sub>3</sub>Ga<sub>3</sub>Al<sub>2</sub>O<sub>12</sub>:Ce,B and CsI:Tl single crystals", *IEEE Trans. on Nucl. Sci.*, 67 (2020) 2415-2420.
  15. S. Panwar, I. Mazumdar, R. Sariyal, V. Ranga, S. M. Patel, P. B. Chavan, **A. K. Gourishetty**, "Characterization of a Sr co-doped LaBr<sub>3</sub>:(Ce) detector for gamma-ray spectroscopy", *Nucl. Instr. and Meth. in Phys. Res. – A* 982 (2020) 164567.
  16. M. Tyagi, S. Rawat, **G. Anil Kumar**, S. C. Gadkari, "A novel versatile phoswich detector consisting of single crystal scintillators", *Nucl. Instr. and Meth. in Phys. Res. – A*, 951 (2020) 162982.
  17. Mukesh Prasad, V. Ranga, **G. Anil Kumar**, R. C. Ramola, "Radiological impact assessment of soil and groundwater of Himalayan regions in Uttarakhand, India", *Journal of Radioanalytical and Nuclear Chemistry*, 323 (2020) 1269-1282.
  18. S. Rawat, Mohit Tyagi, **G. Anil Kumar**, S. C. Gadkari, and Hong Joo Kim, "The effect of co-doping on pulse-shape discrimination properties of Gd<sub>3</sub>Ga<sub>3</sub>Al<sub>2</sub>O<sub>12</sub>:Ce single crystals", *IEEE Trans. on Nucl. Sci.* 66 (2019) 244-2445.
  19. I. Mazumdar, M. Dhibar, S.P. Weppner, **G. Anil Kumar**, A.K. Rhine Kumar, S.M. Patel, P.B. Chavan, C.D. Bagdia, L.C. Tribedi, "Studies in nuclear structure and big bang nucleosynthesis using proton beams", *Acta Physica Polonica B* 50 (March 2019) 377-384.
  20. Mukesh Prasad, **G. Anil Kumar**, S. K. Sahoo, R. C. Ramola, "Health risks associated with the exposure to uranium and heavy metals through potable groundwater in Uttarakhand state of India", *Journal of Radioanalytical and Nuclear Chemistry*, 319 (2019) 13-21.
  21. M. Narsimhulu, **G. Anil Kumar**, G. Bhargavi, B. Srinivas, K. A. Hussain, "Synthesis, crystal structure, thermal, photoluminescent and magnetic properties of a new material: Na<sub>2</sub>[Ni(C<sub>2</sub>O<sub>4</sub>)<sub>2</sub>(H<sub>2</sub>O)<sub>2</sub>].6H<sub>2</sub>O", *Journal of Molecular Structure*, 1178 (2019) 155-161.
  22. S. Rawat, M. Tyagi, **G. Anil Kumar**, S. C. Gadkari, "Efficiency studies on Gd<sub>3</sub>Ga<sub>3</sub>Al<sub>2</sub>O<sub>12</sub>:Ce scintillators: Simulations and measurements", *IEEE Trans. on Nucl. Sci.*, 65 (2018) 2109-2113.

23. Mukesh Prasad, **G. Anil Kumar**, B. K. Sahoo, R. C. Ramola, "A comprehensive study of radon levels and associated radiation doses in Himalayan groundwater", *Acta Geophysica*, 66 (October 2018) 1223-1231.
24. Mukesh Prasad, Peter Bossew, **G. Anil Kumar**, Rosaline Mishra, R. C. Ramola, "Dose assessment from the exposure to attached and unattached progeny of radon and thoron in indoor environment", *Acta Geophysica*, 66 (October 2018) 1187-1194.
25. V. Ranga, S. Rawat, Snigdha Sharma, Mukesh Prasad, S. Panwar, K. Thakur, M. Dhibar, **G. Anil Kumar**, "Intrinsic resolution of Compton electrons in CeBr<sub>3</sub> scintillator using compact CCT". *IEEE Transactions on Nuclear Science* 65 (January 2018) 616-620.
26. M. Dhibar, I. Mazumdar, P. B. Chavan, S. M. Patel, **G. Anil Kumar**, "Characterization of a  $2 \times 2$  array of large square bars of LaBr<sub>3</sub>:Ce detectors with gamma-rays up to 22.5 MeV", *Nucl. Instr. and Meth. in Phys. Res. – A* 883 (2018) 183.
27. S. Rawat, Mohit Tyagi, P. K. Netrakanti, V. K. S. Kashyap, A. Mitra, A. K. Singh, D. G. Desai, **G. Anil Kumar**, S. C. Gadkari, "Pulse shape discrimination properties of Gd<sub>3</sub>Ga<sub>3</sub>Al<sub>2</sub>O<sub>12</sub>:Ce single crystal in comparison with CsI:TI", *Nucl. Instr. and Meth. in Phys. Res. – A* 840 (December 2016) 186-191.
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### **In Conferences/Symposia**

1. *Optical photon transport simulations for SiPM based PET scanner*, Davinder Siwal and **G. Anil Kumar**, Accepted for presentation in 6th National Conference on Advanced Materials and Radiation Physics (AMRP-2023) to be held during May 18-19, 2023 in Punjab.
2. *A systematic study on occurrence and hazard assessment of uranium in groundwater sources of Garhwal Himalaya, India*, Mukesh Prasad, R.S. Aswal, **G. Anil Kumar**, Tushar Kandari, V. Anand, Bhavika, Ishwar Dutt, Ajay Sharma, R.C. Ramola, presented (oral) in First International Conference on Radiation Awareness and Detection in Natural Environment (RADNET-2023) during March 2-4, 2023 in Dehradun, Uttarakhand.
3. *A comprehensive study of natural radioactivity in soil, water and air of KunjaBahadurpur, Roorkee*, Kumar Sourabh, **G. Anil Kumar**, S. K. Saini and Mukesh Prasad, presented (poster) in First International Conference on Radiation Awareness and Detection in Natural Environment (RADNET-2023) during March 2-4, 2023 in Dehradun, Uttarakhand.
4. *Attempts to understand the image reconstruction algorithms used in medical X-ray computed tomography*, Davinder Siwal, **G. Anil Kumar**, Proceedings of DAE Symposium on Nuclear Physics (Govt. of India), Vol. 66 (2022) 1170.
5. *Studies on the effect of digital data acquisition parameters on the neutron-gamma discrimination*, V. Anand, Bhavika, and **G. Anil Kumar**, Proceedings of DAE Symposium on Nuclear Physics (Govt. of India), Vol. 66 (2022) 1194.
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