



GMU - Faculty & Staff Profile Templet



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Websites

LinkedIn:

<https://www.linkedin.com/in/swaroop-kumaraswamy-0a1a4763/>

Google Scholar:

<https://scholar.google.com/citations?user=sxv-Ct4AAAAJ&hl=en>

Research Gate:

<https://www.researchgate.net/search.Search.html?query=&type=publication>

SCOPUS:

<https://www.scopus.com/home.uri>

Dr. Swaroop K

Associate Professor & Head, Department of Physics

Faculty

Faculty of Basic and Applied Sciences

School / Program

School of Mathematical and Physical Sciences/B.Sc & B.Tech.

Faculty Introduction

Dr. Swaroop K is an Associate Professor and Head, Department of Physics, and Associate Dean (Research) at GM University, Davanagere. He holds a Ph.D. in Physics from Mangalore University, specializing in gamma radiation-assisted synthesis of hydrogel nanocomposites. With over 18 years of teaching and research experience, his work spans radiation physics, Hydrogel nanocomposites, and biomedical applications. He has published extensively, filed multiple patents, and guided numerous student and funded research projects. Dr. Swaroop has also served as a coordinator for innovation initiatives and organized national and international conferences.

Qualifications

Ph.D. (Physics)

Mangalore University, Mangalore, Karnataka 2018

M.Sc. (Physics)

Jnanasahyadri, Kuvempu University, Shimoga, Karnataka 2008

B.Sc. (PME)

DRM Science College, Davanagere, Karnataka 2005

Experience

Teaching

- 3 Years at Government Science College, Chitradurga, Karnataka.
- 3 Years at GM Institute of Technology, Davanagere, Karnataka.
- 2 Years at GM University, Davanagere, Karnataka.

Industry

NA

Research

- 2 Years as JRF, BRNS Project
- 5 Years as SRF, BRNS Project
- 2 Years as RA, BRNS Project



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- 1 Year as Scientific Officer at Center for Application of Radioisotopes and Radiation Technology, Mangalore University.

Training Program Attended

- “Leadership Training” at GM University on 23rd August 2024.
- Training on ‘Design Thinking’ at Chennai on 12th and 13th March 2025.
- “Dose mapping of Gamma Chamber using Ceric-Cerous Dosimeters” organized by Board of Radioisotopes and Radiation Technology, Mumbai on 28th and 29th September 2015.
- “Radioimmunoassay and its applications”, organized by Board of Radiation and Isotope Technology, Mumbai in Association with, Centre for Application of Radioisotopes and Radiation Technology, Mangalore University, Mangalore, Karnataka, 4th to 9th Feb, 2013.
- “Carbon-14 Urea Breath Test for detecting Helicobacter pylori infection” organized by Centre for Application of Radioisotopes and Radiation Technology, Mangalore University, Mangalore, Karnataka, 29th April, 2012.
- “14C-Urea Breath Test”, conducted by BRIT, Mumbai, 7th Jan, 2011.
- “Radioimmunoassay Techniques and their Clinical Applications” Conducted by Radiopharmaceuticals Division, Radiochemistry and Isotope Group, BARC, 15th to 26th March, 2011.

Research Interest

- Radiation Physics
- Material Science
- Nanomaterials
- Polymer Composites
- Hydrogels

Awards & Achievements

- Design Patent No. 442973-001 granted on 1st March 2025 “Solar Powered Optical Pyrometer”.

Publication / Patents

- **Ph.D. Dissertation:**
“Gamma Radiation Assisted Synthesis and Characterization of Hydrogel Nanocomposites for Bio-Medical Applications”
- **Conferences:**
 - **K Swaroop**, SG Ashwini, MS Murari, CS Naveen, AK Vinayaka, BM Santhosh, BN Veerabhadraswamy, I Yashodhara, “pH Responsive Properties of Methyl Red/PVA Polymers for Smart Food Packaging Applications”, Third International Conference on Physics of Materials & Nanotechnology (ICPN-2023) held at Mangalore University, Mangalore during September 21-23, 2023.
 - BN Veerabhadraswamy, HK Pradeep, **K Swaroop**, KM Manoj, MV Dhanush Nadigar, MP Akash Patel, NP Bhagya, “Green synthesis and characterization of Zirconium Oxide with antimicrobial activities”, Third International Conference on Physics of Materials & Nanotechnology (ICPN-2023) held at Mangalore University, Mangalore during September 21-23, 2023.



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- **Swaroop K**, Somashekarappa H M, “ Swelling and Mechanical Properties of ZnO/PVA Hydrogel Nanocomposites Synthesized using Gamma Irradiation Technique” International e-Conference on Recent Trends in Nanotechnology and Material Sciences (ICRTNM-2021) held at St. Joseph’s college for Women, Alappuzha, Kerala during 18-20 January, 2021.
- **Swaroop K**, Somashekarappa H M. “Drug Release Kinetics of radiolytically synthesised Au/PVA Hydrogel nanocomposites for Skin Care Applications”, Third International Conference on Material Science (ICMS2020)” organized by Department of Physics, Tripura University during 04-06 March, 2020.
- **Swaroop K**, Somashekarappa H M. “Swelling and cytocompatibility studies of Au/PVA hydrogel nanocomposites synthesized using gamma irradiation technique” International Conference on Physics of Materials and Nanotechnology (ICPN 2019) at Mangalore University, during September 19-21, 2019.
- **Swaroop K**, Somashekarappa H M. “Antibacterial Studies of Curcumin Loaded PVA Hydrogels Synthesised using Gamma Irradiation Technique” presented in “Future India: Science and Technology” and (ISCA), organized by Oxford College of Science, Bengaluru on October 10-11, 2018.
- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Evaluation of gamma shielding parameters of PbO-hematite (Fe_2O_3) filled EPDM composites” National Seminar on Applications of Radioisotopes and Radiation in Industry, Healthcare and Agriculture” St. Aloysius College (Autonomous), Mangaluru, from 10th to 11th September 2018.
- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Preparation and characterization of hematite and lead oxide based flexible EPDM composites for shielding gamma rays” (63rd DAE SSPS-2018) Guru Jambheshwar University of Science & Technology, Hisar, , from 18th to 22th December, 2018.
- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Studies on effect of magnetite (Fe_3O_4) on shielding properties of natural rubber composites for 662 keV gamma ray” International Conference on Recent Advances in Materials Science and Biophysics, Mangalore University, Mangalagangothri, India, from 23th to 25th January 2018.
- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Studies on effect of PbO-magnetite (Fe_3O_4) on shielding properties of EPDM composites for 662 keV gamma rays” National Conference on Radiation Physics” Bangalore University, Bangalore, India, from 23th to 24th November 2017.
- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Studies on effect of PbO-magnetite (Fe_3O_4) on shielding properties of EPDM composites for 123 keV gamma rays” National Conference on Recent Trends in Applied Science and



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Technology, Alliance College of Engineering and Design, Bangalore, India, from 26th to 27th October 2017.

- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Studies on effect of PbO-hematite (Fe_2O_3) on shielding properties of EPDM composites for 662 keV gamma rays” National Conference on Reaching the Unreached through Science and Technology, Mangalore University, Mangalagangothri, India, from 8th to 9th September 2017.
- Vinayak Anand Kamat, **K. Swaroop**, K. U. Kiran, & H. M. Somashekarappa, “Studies on effect of magnetite (Fe_3O_4) on shielding properties of natural rubber composites for 662 keV gamma ray,” National Conference on Particle Accelerators in Interdisciplinary Research”, Mangalore University, Mangalagangothri, India, from 11th to 13th April 2017.
- **Swaroop K.**, and Somashekarappa H. M., “Radiation Synthesis of ZnO/PVA Hydrogel Nanocomposites for Skin Care Applications”, “Recent Trends in Applied Science and Technology” (RTAST-2017)” Alliance College of Engineering and Design, Bangalore, Karnataka, India, on 26th and 27th of October 2017.
- Vinayak A.K., **Swaroop K.**, Kiran K.U. and Somashekarappa H.M., “Studies on Effect of PbO-Magnetite (Fe_3O_4) on Shielding Properties of EPDM Composites for 123 keV Gamma Rays”, “Recent Trends in Applied Science and Technology” (RTAST-2017)” Alliance College of Engineering and Design, Bangalore, Karnataka, India, on 26th and 27th of October 2017.
- **Swaroop K.**, Shrikant L Patil, and Somashekarappa H M, Swelling and mechanical characteristics of radiolytically synthesised Ag/PVA hydrogel nanocomposites, “National Conference on Reaching the Unreached Through Science and Technology” (NCRUTST-2017)” Mangalore University, Mangalore, Karnataka, India, on 8th and 9th of September 2017.
- Pushpanjali M G, **Swaroop K.**, Vinayak Anand Kamat, Sharmila K, and Somashekarappa H M, Impact of Gamma Irradiation on Ag/PVA Polymer Nanocomposites Synthesised Using Solvent Evaporation Method, “National Conference on Reaching the Unreached Through Science and Technology” (NCRUTST-2017)” Mangalore University, Mangalore, Karnataka, India, on 8th and 9th of September 2017.
- Vinayak Anand Kamat, **Swaroop K.**, Kiran K U, Pushpanjali M G, Sharmila K, and Somashekarappa H M., Studies on effect of PbO-Hematite (Fe_2O_3) on shielding properties of EPDM composites for 662 keV gamma rays, “National Conference on Reaching the Unreached Through Science and Technology” (NCRUTST-2017)” Mangalore University, Mangalore, Karnataka, India, on 8th and 9th of September 2017.
- **Swaroop K.**, Shrikant L. Patil, and Somashekarappa H. M., “Swelling and Mechanical Characteristics of Radiolytically Synthesised Ag/PVA Hydrogel Nanocomposites”, National Conference on “Reaching the Unreached through Science and Technology” Mangalore University



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and ISCA, Mangalore, Karnataka, India, on 8th and 9th September of 2017.

- **Swaroop K.** and Somashekarappa H. M., “In vitro biocompatibility of gamma ray crosslinked ZnO/PVA hydrogel nanocomposites”. Presented a paper in International Conference on “Smart Engineering Materials (ICSEM-2016)” R V College of Engineering, Bangalore, India, from 20th to 22nd October 2016.
- **Swaroop K.** and Somashekarappa H. M., “Swelling Characteristics and Drug Release Kinetics of Ag/PVA Hydrogel Nanocomposites”, Presented a paper in 61st DAE Solid state Physics Symposium, (DAE-SSPS-2016), KIIT, Bhubaneswar, Odissa, India, 26th to 30th Dec, 2016.
- **Swaroop K.**, Pushpanjali M G, Somashekarappa H M, “Gamma Irradiation synthesis of Ag/PVA Hydrogel Nanocomposites for Wound dressing Applications”, presented at National Seminar and Workshop on Functional Nanomaterials, Mangalore University, Mangalore, Karnataka, India, 21-22, 2016.
- Vinayaka Anand Kamat, **Swaroop K.**, Somashekarappa H M, “Comparison of Properties of Magnetite Nanoparticles Synthesised using Co-precipitation method with different Composition of Precursors”, presented at National Seminar and Workshop on Functional Nanomaterials, Mangalore University, Mangalore, Karnataka, India, 21-22, 2016.
- **Swaroop K.**, Sanju Francis, and Somashekarappa H. M., “Gamma irradiation synthesis of Ag/PVA hydrogels and its antibacterial activity”. Presented a paper in International Conference on “Recent Advances in Nano Science and Technology (RAINSAT-2015)” held at Sathyabama University, Chennai, India, 14th - 17th December 2015.
- **Swaroop K.**, Sanju Francis, and Somashekarappa H. M., “Study on gamma irradiation assisted synthesis of zinc oxide nanocomposite hydrogels and its antibacterial properties”. Presented a paper in International Conference on “Nanoscience, Nanotechnology and Advanced Materials (NANOS-2015)” held at GITAM University, Visakhapatnam, India, 8th - 10th July, 2015.
- **Swaroop K.**, Jayachandran, K. Bhaskar Shenoy, and H. M. Somashekarappa, “Prevalence of H pylori infection using 14C Urea Breath Test in Soraba region of Shimoga district” Presented in National conference on Recent Advances in Animal Sciences, Mangalore, Feb 13-15, 2015.
- **Swaroop K.**, Jayachandran, and H M Somashekarappa, “Age factor analysis of Helicobacter pylori infection in coastal Karnataka region using 14C Urea Breath Test”, Presented in national conference of Radiation and Environment, Puttur, Feb 5-6, 2015.
- **Swaroop K.**, Naveen C. S., Jayanna H. S. and Somashekarappa H. M., “Effect Of Gamma Irradiation On dc Electrical Conductivity Of ZnO Nanoparticles”. Presented a Poster in “59th DAE Solid State Physics Symposium (59th DAE-SSPS)”, held at VIT University, Vellore, 16th - 20th December, 2014.



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- **Swaroop K.**, H. M. Somashekarappa. “Effect of pH values on surface morphology and particle size variation in ZnO nanoparticles synthesised by co-precipitation method” Presented a Poster in “4th International Science Congress (ISC-2014)”, held at Pacific University, Udaipur, Rajasthan, India, on 8th and 9th December, 2014.
- Sana Skeik, **Swaroop K.**, Chandrashekar K R, and Somashekarappa H M, “Biodegradation of Gamma irradiated LDPE by and Endophytic fungus Lasiodiplodia theobromae form an Endemic plant psychotria flavida Talbot of Western Ghats” Presented a Poster in “4th International Science Congress (ISC-2014)”, held at Pacific University, Udaipur, Rajasthan, India, on 8th and 9th December, 2014.
- **Swaroop K.**, Jayachandran, N. Sivaprasad, H. M. Somashekarappa , “Prevalence studies of Helicobacter pylori infection by 14C urea breath test in randomly selected population of coastal Karnataka region”, Presented in International Conference of Radiation Biology, Delhi, Nov 10-14, 2014.
- **Swaroop K.**, Jayachandran, Rajashekar K Patil, K Bhaskar Shenoy, H M Somashekarappa, “A study on Helicobacter pylori infection in different parts of Karnataka using 14C Urea Breath Test”, Presented in 5th Symposium on Nuclear Analytical Chemistry, Mumbai, Jan 20-24, 2014.
- **Swaroop K.**, Jayachandran and H M Somashekarappa, Age and gender specific studies on Helicobacter pylori infection in costal Karnataka region using 14C Urea Breath Test ; Presented in 6th anual KSTA conference on Science and Technology for promoting inovative research and development, Bangalore, December 2013.
- Udayaraj S, **Swaroop K** and Somashekarappa H M, “Effect of gamma irradiation on zinc oxide nanoparticles synthesized by co-precipitation method”, Presented in National Conference on Condensed Matter Physics and Application-2013, Manipal, Dec 27-28, 2013.
- Trilochana shetty, **Swaroop K** and Somashekarappa H M, “Synthesis of ZnO nanoflowers using hydrothermal technique”, Presented in National Conference on Condensed Matter Physics and Application-2013, Manipal, Dec 27-28, 2013.
- Prashantha Krishna M C, Pavitra, **Swaroop K** and Somahsekarappa H M, “Studies on gamma irradiation effect on polyethylene and polypropylene”, Presented in National Conference on Condensed Matter Physics and Application-2013, Manipal, Dec 27-28, 2013.
- **Swaroop K.**, Rajashekhar K Patil, Shrikant L Patil, Jayachandran and H M Somashekarappa, “Epidemiological studies on Helicobacter pylori : urbanization and lifestyles” ; Presented in National Conference On Environmental Sciences and Health Hazards. Dharwad, November 2012.
- **Swaroop K.**, Srikanth L Patil, and H M Somashekarappa, “Helicobacter pylori infection studies using 14C UBT method” ; Presented in 30th IARP conference, Mangalore, March 2012..
- **Swaroop K.**, H M Somashekarappa, Rajashekar K Patil, “Studies on prevalence of Helicobacter pylori infection employing 14C Urea breath

test method”; Presented at NAHSM National conference, Tumkur, Feb 2012.

- **Swaroop K**, HM Somashekarappa, Jayachandran, N Sivaprasad, Khamar Jaha Banu, 14C Urea Breath Test as a diagnostic tool in Helicobacter pylori infection studies(2011); Presented in CSSNMI, Chennai.

- **Journal Papers:**

- Shivananda C S, Lakshmeesha Rao B, **Swaroop K**, “Tuning of optical properties of multifunctional silk fibroin films patterned by silver nanoparticles”, Next Materials, 8, 2025, 100834.
- **K Swaroop**, SG Ashwini, MS Murari, CS Naveen, AK Vinayaka, BM Santhosh, BN Veerabhadraswamy, I Yashodhara, “pH Responsive Properties of Methyl Red/PVA Polymers for Smart Food Packaging Applications”, IOP Conference Series: Materials Science and Engineering, 1300, 012016 (2024).
- BN Veerabhadraswamy, HK Pradeep, **K Swaroop**, KM Manoj, MV Dhanush Nadigar, MP Akash Patel, NP Bhagya, “Green synthesis and characterization of Zirconium Oxide with antimicrobial activities”, IOP Conference Series: Materials Science and Engineering, 1300, 012036 (2024).
- Samartharama BN, N Nagaiah, Ambika MR, **Swaroop K**, “Preparation and opto-electrical characterization of poly (ethylene oxide) based polymer blends for electrochemical applications”, International Journal of Polymer Analysis and Characterization, 29(3), 157-171 (2024).
- Kankanady Sharmila, Nimitha S Prabhu, Sudha D Kamath, Vinayak A Kamat, **K Swaroop**, Hiriyur M Somashekarappa, “Thermoluminescence properties of copper-doped TiO₂ nanoparticles synthesised using co-precipitation method for high-dose gamma dosimetry”, Radiation Protection Dosimetry, 199 (20), 2464-2468 (2024).
- HV Kiranakumar, CS Naveen, R Thejas, GD Prasanna, G Nagaraju, **K Swaroop**, MV Murugendrappa, “A Study on Structural, Electrical and Ethanol Sensing Properties of RGO Substituted SnO₂ Nanoparticles”, Journal of Mines, Metals & Fuels, 71 (8), 1074–1080 (2023).
- R Thejas, T L Soundarya, G Nagaraju, **Swaroop K**, S C Prashantha, “Effect of cation concentration on structural, morphology, optical properties of Zinc-Nickel ferrite nanoparticles”, Materials Letters: X, 15, 100156 (2022).
- T Ramakrishnaiah, P G Dhananjaya, C V Sainagesh, S Reddy, **Swaroop K**, “A review: electrical and gas sensing properties of polyaniline/ferrite nanocomposites”, Sensor Review, 42, 164-175 (2022).
- K Thirumalesh, SP Raju, HM Somashekarappa, **Swaroop K**, “Shock tube data processing tools using open source hardware and software platforms”, Engineering Reports, 3, e12353 (2021).
- N S Prabhu, K Sharmila, **Swaroop K**, HM Somashekarappa, “An examination of the radiation-induced defects and thermoluminescence

- characteristics of Sm₂O₃ doped BaO–ZnO–LiF–B₂O₃ glass system for γ -dosimetry application”, Optical Materials, 118, 111252 (2021).
- V A Kamat, **Swaroop K**, K U Kiran, K M Eshwarappa, H M Somashekarappa, Studies on the effects of Fe₃O₄-PbO combinations in peroxide vulcanisation of EPDM and shielding 59.54 kev gamma rays, Radiation Effects and Defects in Solids, 176, 690-703 (2021).
 - **Swaroop K**, L P Shrikant, H M Somashekarappa, Swelling Studies of PVA/Gelatin Hydrogels Synthesized Using Gamma Irradiation Technique, Current Perspectives on Chemical Sciences, 9, 125-131 (2021).
 - M G Pushpanjali, H M Somashekarappa, **Swaroop K**, N Prashantha, C Sharath, Studies on Synthesis and Characterization of Silver/Polyvinyl Alcohol/Polyvinylpyrrolidone (Ag/PVA/PVP) Nanocomposite Films and Antibacterial Activity, Journal of Advanced Scientific Research, 11, 292-296.
 - **Swaroop K.**, Shrikant L Patil, Somashekarappa H. M., “In vitro biocompatibility evaluation of radiolytically synthesised Ag/PVA hydrogel nanocomposites for wound dressing applications” Journal of Bioactive and Compatible Polymers, DOI:10.1177/0883911520944428
 - Thirumalesh, Raju S. P., **Swaroop K**, Somashekarappa H. M., “Study on effects of shockwave treatment on PVA films in view of electrical property changes”, Mater. Res. Express, (2020), Vol 7, 015344.
 - **Swaroop K.**, Shrikant L. P., Somashekarappa H. M., "Swelling and Cytocompatibility Studies of Au/PVA Hydrogel Nanocomposites Synthesized using Gamma Irradiation Technique", AIP Conf. Proc., 2244, 020005 (2020).
 - Vinayak Kamat, **Swaroop K**, Kiran K U, Somashekarappa H M. “Optimization of PbO/Fe₃O₄/EPDM Flexible Composites for Gamma Shielding Applications", AIP Conf. Proc., 2244, 040004 (2020).
 - Sharmila K, Vinayak A. K., **Swaroop K.**, Somashekarappa H. M., “Thermoluminescence Properties of Li Doped TiO₂ Nanoparticles Synthesized using Co-precipitation Method", AIP Conf. Proc., 2244, 090003 (2020)
 - **Swaroop K.**, Gaana M. J., Shruthi. S. S., Shrinidhi, Shrikant L. P., Vinayak A. K., Somashekarappa H. M., “ Studies on swelling behavior of radiolytically synthesized PVA/ gelatin hydrogels”, AIP Conf. Proc., Vol. 2115, 030050. (2019)
 - Vinayak Anand Kamat, **Swaroop K.**, Kiran K. U., Somashekarappa H. M., “Preparation and characterization of hematite and lead oxide based flexible EPDM composites for shielding gamma rays”, AIP Conf. Proc., Vol 2115, 030047. (2019)
 - **Swaroop K.** and Somashekarappa H. M., (2018) “In vitro Biocompatibility and Antibacterial Activity of Gamma Ray Crosslinked ZnO/PVA Hydrogel Nanocomposites”, Materials Today: Proceedings, 5(10), 21314-21321
 - Vinayak A. K., **Swaroop K.**, Somashekarappa H. M., (2018) Studies on the effect of PbO-magnetite (Fe₃O₄) on shielding properties of

EPDM composites for 662 keV gamma rays, Ind. J. Pure. App. Phy, 56, 639-642.

- Vinayak A. K., **Swaroop K.**, Kiran K. U., Somashekarappa H. M., Effects of Hematite-Lead Oxide Combination in ethylene-propylene-diene-monomer on Shielding 59.54 keV Gamma Rays, Rad. Phy. Chem., 256, 50-57 (2018)
- Vinayak A. K., **Swaroop K.**, Kiran K. U., Somashekarappa H. M., (2018) “ Studies on effect of magnetite (Fe₃O₄) on shielding properties of natural rubber composites for 662 keV gamma rays”, International conference on recent advances in material sciences and biophysics, ISBN 978-93-5291-953-6, 145-148.
- **Swaroop K.** and Somashekarappa H. M., (2017) “Swelling Characteristics and Drug Release Kinetics of Ag/PVA Hydrogel Nanocomposites”, AIP Conf. Proc., 1832, 140025.
- Shrikant L. Patil, Tanhaji Ghodke, Shilpa M. Patil, **Swaroop K.**, H. M. Somashekarappa, (2017), “Cytoprotective Potential of Rutin and Quercetin in Swiss Mice Exposed to Gamma Radiation”, Int. J. Life. Sci. Scienti. Res. 3, 1322-1328.
- Shrikant L. Patil, **K. Swaroop**, Nilesh Kakde, H. M. Somashekarappa, (2017), “In vitro Protective Effect of Rutin and Quercetin against Radiation-induced Genetic Damage in Human Lymphocytes”, Indian J. Nucl. Med., 122, 189-195.
- **Swaroop K.**, Gangadhar B., Vishalakshi B., Somashekarappa H. M., “Gamma irradiation synthesis and in vitro drug release studies of ZnO/PVA hydrogel nanocomposites”, Advanced Material Letters., 8, 2-7, 2017. DOI: 10.5185/amlett.2016.6819.
- **Swaroop K.** and Somashekarappa H. M., “Swelling and Mechanical Properties of Radiation Crosslinked Au/PVA Hydrogel Nanocomposites”, Radiat. Eff. Defects Solids., Vol 171, pp. 1-10, 2016.
- **Swaroop K.**, Sanju Francis, and Somashekarappa H. M., “Gamma irradiation synthesis of Ag/PVA hydrogels and its antibacterial activity”, Materials Today: Proceedings, Vol. 3, pp. 1792–1798, 2016.
- **Swaroop K.**, Sana Sheikh, Chandrashekar K. R., and Somashekarappa H. M., “Antibacterial Studies of Gamma Irradiated Zinc Oxide Nanoparticles on Klebsiella pneumonia and Pseudomonas aeruginosa”, IOSR Journal of Applied Physics, Vol 7, 58-63, 2015.
- **Swaroop K.** and H. M. Somashekarappa., “Effect of pH values on surface morphology and particle size variation in ZnO nanoparticles synthesised by co-precipitation method”, Research Journal of Recent Sciences, Vol. 4, pp. 197-201, 2015.
- **Swaroop K.**, Naveen C. S., Jayanna H. S. and Somashekarappa H. M., “Effect of Gamma Irradiation on dc Electrical Conductivity of ZnO Nanoparticles”, AIP Conf. Proc., Vol. 1665, pp. 050100-1–050100-3, 2015.
- Sana Sheik, K.R. Chandrashekar, **K. Swaroop**, H.M. Somashekarappa, “Biodegradation of gamma irradiated low density polyethylene and



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polypropylene by endophytic fungi”, International Biodeterioration & Biodegradation, 105, (2015), 21-29.

- **Swaroop K**, HM Somashekarappa, Jayachandran, N Sivaprasad, Khamar Jaha Banu, 14C Urea Breath Test as a diagnostic tool in Helicobacter pylori infection studies; Indian Journal of Nuclear Medicine (Abstract), vol. 26, s 22-23, 2011.
- **Swaroop K**, Jayachandran, Srikanth L Patil, H M Somashekarappa, “A study of Helicobacter pylori infection using the 14C UBT method”, Radiation Protection and Environment, (2011); Vol.34; 206-209.

Patents:

- “pH-Responsive Smart Polymer Films for Sustainable Food Packaging”
- “Development of Hydrogel Based Facial Care Masks Synthesised from Agricultural Extracts”
- “EcoPack: Innovative Packaging Solutions from Arecanut Leaf Sheaths (ALS)”
- “Portable Electrochemical Sensing Device For On-Site Detection Of Pesticide Residues In Fruits And Vegetables”
- “An Analysis of Sugarcane Cultivation to Improve its Productivity”
- “Solar Powered Optical Pyrometer”

Professional Membership

- Indian Association for Radiation Protection (IARP)-Life Member
- Indian Science Congress Association (ISCA)- Life Member
- National Association for Applications of Radioisotopes and Radiation in Industry (NAARRI)- Life Member

Awards & Recognitions

- Best oral presentation award at “Future India: Science and Technology” and (ISCA), organized by Oxford College of Science, Bengaluru on Oct. 2018.
- Best poster presentation award at 31st IARP conference held in Mangalore University on March 2012

Administrative Responsibilities

- Head, Department of Physics (Nov 2024 to Present)
- Associate Dean- Research (Jan 2024 to Present)
- IPR Coordinator-GMIT (2020 to 2023)
- Chief Coordinator-Anti Ragging- GMIT (2020 to 2022)
- College Coordinator- KTech NAIN Projects

Workshops / FDPs / Seminars Attended

- Participated in the National workshop on “Radiation Safety and Measurements” organized by A J Institute of Medical Sciences and Research Centre, Mangalore, Karnataka, on 2nd April 2017.
- Participated in the National workshop on “Emerging targets and Biomarkers in Cancer Therapy” organized by CARRT, Mangalore University, Mangalore, Karnataka, from 16th to 18th May, 2016.



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- Participated in training programme on “Dose Mapping Studies of Gamma Chamber” at Board of Radiation and Isotope Technology, Navi Mumbai, on 28th and 29th Sept, 2015.
- Participated in the National workshop on “Blood Irradiation and its Application in Transfusion Medicine” organized by CARRT/NAARRI, Mangalore University, Mangalore, Karnataka, on 17th Oct, 2015.
- Participated in the interaction meeting of Bioresource Users for Research “Biological Diversity Act-2002” organized by Karnataka Biodiversity Board in association with Mangalore University, Mangalore, Karnataka, 31st Jan, 2015.
- Participated in Orientation Workshop on “Radiation-Its Application in Physical, Chemical and Life Sciences” organized by Dept. of Physics, Mangalore University and UGC-DAE Consortium for Scientific Research, Kolkata Centre, on 24th and 25th June, 2015.
- Participated in the National workshop on “Blood Irradiation: Technology and Applications” organized by Yenepoya Research Centre, Yenepoya University, Mangalore, Karnataka, on 26th May 2015.
- Participated in seminar on “National environment Awareness Campaign: 2013-14” organized by Ministry of Environment, Forests and Climate Change, Mangalore university, Mangalore, Karnataka, on 28th Nov, 2014.
- Participated in Pre-Conference Workshop on “Recent Advances in Research Methodologies in Biological Sciences” organized by Dept. of Biochemistry, Mangalore University, Mangalore, Karnataka, on 17th Nov, 2014.
- Participated in National Seminar on “Radiation and Radioisotopes: Tool for Scientific Research” organized by CARRT/NAARRI, Mangalore University, Mangalore, Karnataka, 28th April, 2014.
- Participated in National workshop on “Nano Science and Technology” organized by Mangalore Institute of Technology and Engineering, Moodabidiri, Mangalore, Karnataka, on 18th and 19th Oct, 2013.
- Participated in 2nd international Conference on “Po and Radioactive Pb Isotopes (INCO-PoPb-2013)” organized by University Science Instrumentation Centre, Mangalore University, Karnataka, 10-13th Feb, 2013.
- Attended a hands on Trainers Training Course on “Radioimmunoassay and its applications”, organized by Board of Radiation and Isotope Technology, Mumbai in Association with, Centre for Application of Radioisotopes and Radiation Technology, Mangalore University, Mangalore, Karnataka, 4th to 9th Feb, 2013.
- Participated in National workshop on “Nuclear Technology for Human Welfare” organized by CARRT/BRNS, Mangalore University, Mangalore, Karnataka, on 28th April, 2012.
- Participated in hands on training programme on “Carbon-14 Urea Breath Test for detecting Helicobacter pylori infection” organized by Centre for Application of Radioisotopes and Radiation Technology, Mangalore University, Mangalore, Karnataka, 29th April, 2012.
- Participated in 4th annual workshop on “Vignana matthu tantragnnada hosa diganthagalu: avakashagalu matthu savalugalu” organized by KSTA, Mangalore University, Mangalore, Karnataka, on 28-29th April, 2012.



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- Participated in workshop on “Nano Medicine” organized by K S Hegde Medical Academy, Mangalore, Karnataka, 12-13 Oct, 2012.
- Participated in hands on training on “¹⁴C-Urea Breath Test”, conducted by BRIT, Mumbai, 7th Jan, 2011.
- Attended a Training course on “Radioimmunoassay Techniques and their Clinical Applications” Conducted by Radiopharmaceuticals Division, Radiochemistry and Isotope Group, BARC, 15th to 26th March, 2011.

Workshops / FDPs / Seminars Organized

- Organized I-STEM SAMAVESHA-7.0 on 26th November 2024.
- Organized ‘Two-Days Research Symposium’ on Ethics, Methodology, and Emerging Trends in Research on 26th and 27th of September 2024.
- Organized Project Exhibition for final year projects for 2023-24 on 22nd May 2024 & for 2024-25
- Convenor for National level Workshop on “Conceptual Foundations of Quantum Mechanics” held on 14th & 15th Sept 2021.
- 2nd International Conference on “Emerging Trends in Science, Engineering and Management”, held on 15th and 16th July 2021.

Projects Guided

- **UG Projects**
 - “Development of hydrogel based facial care masks synthesised from agricultural extracts”- for final year BT students of 2024-25 batch.
 - “pH Sensitive Smart Food Packaging Polymer Materials”- for Students of MANTHAN participants of 2023-24 batch.
- **PG Projects**
 - “Effect of Gamma Irradiation on ZnO nanoparticles” for PG Students of Mangalore University of 2018-19 Batch.
 - “Studies on Gamma Irradiation Effect on Polyethylene and Polypropylene” for PG Students of Mangalore University of 2015-16 Batch.

Funded Projects / Grants Received

- “Development of hydrogel based facial care masks synthesized from agricultural extracts”, Swaroop K (Principal Investigator), KTech-NAIN, Govt. of Karnataka. Amount Sanctioned Rs. 2,72,000/-, AY 2024-25.
- ‘Silver Doped Zinc Oxide Nanoparticles for Dye Degradation Application’ Swaroop K (Co-Investigator) under ‘GM University Seed grant’, Amount Sanctioned Rs. 15,000/-, AY- 2024-25.

Any Other Contributions

- **Recourse Person**
 - Workshop on “Protecting Intellectual Property Rights for IP Management for Start-ups” held at GMIPSR, on 13th August 2025.
 - Leadership Training for faculty members of GM University Jun-Aug 2025.
 - “Synthesis of Hydrogel Nanocomposites by Radiation Assistance for Biomedical Applications” 2nd International Conference on Recent



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Trends in Materials Science & Devices 2023 at Sat Kabir Institute of Technology & Management Bahadurgarh, Haryana held during 29-31 December, 2023.

- “Gamma Radiation Assisted Synthesis of Hydrogels and its Applications”, DST-STUTI Training Programme on Application of Radiation and Radioisotopes in Physical, Material, Chemical, and Biological Science Research at Mangalore University held during 10-16 October, 2022.
- “¹⁴C Urea Breath Test as a diagnostic tool in Helicobacter pylori infection” DST-STUTI Training Programme on Application of Radiation and Radioisotopes in Physical, Material, Chemical, and Biological Science Research at Mangalore University held during 10-16 October, 2022.
- “Radiation Assisted Hydrogel nanocomposites for Biomedical Applications” National Conference on Recent Trends in Applied Aspects of Biological Sciences 2021 (NCRTAABS 2021) held on 19th -20th March at PSG college of Arts and Science, Coimbatore.