**RITA CRASTA**

**PERSONAL** **DETAILS**

Date of Birth: 03-09-1979,

Permanent Address: Palm House, Kavoor Post, Mangalore. 575015

**CONTACT INFORMATION**

Email: rita\_crasta@staloysius.edu.in, rita.crasta@gmail.com

Mobile: +91 9481961892

Address: Department of Post-Graduation Studies and Research in Physics,

Light House Hill Road,

St Aloysius College (Autonomous), Mangalore. 575003

**EDUCATION QUALIFICATION**

**2014:** PhD in Physics, Microtron Centre, Department of Physics, Mangalore University,

 Mangalagangothri, Konaje, India

 **Thesis Advisor**: Professor Ganesh Sanjeev, Professor, Mangalore University

 **Thesis Title**: Photon and neutron-induced Reaction Cross-section Measurement using

 Activation Technique.

**2002**: M Sc Physics, Department of Physics, Mangalore University, Mangalagangothri,

 Konaje, India

**2000**: B. Sc Physics, St. Philomena College, Philonagar Puttur.

**1997**: PUC, P U College, Bantwal Taluk, Dakshina Kannada District, Vittal

**1995**: SSLC, Vittal Girls High School, Bantwal Taluk, Dakshina Kannada District, Vittal

**RESPONSIBILITIES at SAU**

Member of NAAC Criterion 7

Member of AQAR Criterion 7

Member of Career Guidance cell

Member of Malpractice Enquiry Committee

President of PG Physics Phoenix Association

**TEACHING EXPERIENCE**

**2014-Till date:** Assistant Professor,Department of Postgraduate Studies & Research in

 Physics, St Aloysius College, Mangalore, India

**2003-2005**: Department of Physics, Capitanio Composite P.U College Mangalore, India

**2002-2003**: Department of Physics, Vijaya College, Mulki, India

**RESEARCH EXPERIENCE**

**2008-2014**: Microtron Centre, Department of Physics, Mangalore University,

 Mangalagangothri, Konaje, India,

 Research project sanctioned by the Department of Atomic Energy-Board of

 Research in Nuclear Science, Govt. of India

**AREA OF RESEARCH**

* Reaction cross-section measurements using activation technique
* Environmental Radioactivity

**VISIT TO INSTITUTIONS FOR SCIENTIFIC COLLABORATION**

 **Bhabha Atomic Research Centre (BARC) and their units**:

 Electron Beam Centre (EBC), Kharghar, Navi Mumbai

Tata Institute of Fundamental Research (TIFR) Pelletron Facility

**JOURNAL PUBLICATIONS**

1. Distribution of 210-Polonium activity and Soil Texture in Agricultural soil. Radiation Protection Dosimetry, 2024, 200(11–12), 1047–1051.
2. Analysis of radon concentrations in drinking water in coastal regions of Karnataka, South India. Radiation Protection Dosimetry, 2023, 199(20), 2475–2480.
3. Measurement of fission product yields in the quasi-mono-energetic neutron-induced fission of 238U. Nuclear Physics A, 941 16-37, 2015 (ISSN: 0375-9474).
4. Measurement of the 238U(n, γ)239U and 238U(n, 2n)237U reaction cross-sections using neutron activation technique at neutron energies of 8.04 and 11.9 MeV. Nuclear Science and Engineering 178, 66-75, 2014 (ISSN: 0029-5639)
5. Photo-neutron cross-section of 96Zr using bremsstrahlung radiation with end point energy of 10 and 12.5 MeV. Radiochimica Acta 102, 221-226, 2014 (ISSN: 2193-3405)
6. Mass distribution in the quasi-mono-energetic neutron- induced fission of 232Th. The European Physical Journal A 50, 1-11, 2014 ((ISSN: 1434-6001 (print version), ISSN: 1434-601X (electronic version)
7. Fission Product Yield in the neutron induced fission of 232Th with average energies of 5.42, 7.75 and 10.09 MeV. Nuclear Science and Engineering 176, 106-113, 2014 (ISSN: 0029-5639.
8. Measurement of bremsstrahlung-induced reaction cross-section for 93Nb using electron Linac. Radiochimi Acta 101, 541-546, 2013 (ISSN: 2193-3405)
9. Photo-neutron cross-section measurement in the 8 and 10 MeV bremsstrahlung induced reaction of 238U, J Radioanal Nucl Chem  298, 1065–1071, 2013 (ISSN: 0236-5731 (Print) 1588-2780
10. Measurement of the 232Th(n, γ)233Th and 232Th(n, 2n)231Th reaction cross-sections at neutron energies of 8.04±0.30 and 11.90±0.35 MeV. Annals of Nuclear Energy 47, 160–165, 2012   (ISSN: 0306-4549)
11. Measurement of the 232Th(n, γ) and 232Th(n, 2n) cross-sections at neutron energies of 13.5, 15.5 and 17.28 MeV using neutron activation techniques. Pramana 79, 249-262, 2012(ISSN: 0304-4289)
12. Photo-neutron cross-section of 100Mo. J Radioanal Nucl Chem 290, 367–373, 2011 (ISSN: 0236-5731 (Print) 1588-2780)

**PUBLICATIONS IN PROCEEDINGS**

1. Assessment of Radon Concentration in Groundwater using Emanometry Techniques: A Study in Dakshina Kannada District. Proceedings of National Conference on energy harvesting technologies: Tapping the power of nature, Page 52-55, ISBN-978-81-963171-6-4. (2024)
2. Estimation of 55Fe reaction cross-section from threshold to 20 MeV, Proceedings of National Conference on energy harvesting technologies : Tapping the power of nature, Page 48-51, ISBN-978-81-963171-6-4 (2024).
3. “Radon activity measurements in ground water samples” Proceedings of the twenty third national symposium on radiation physics: innovations in radiation physics, I**SBN** 978-81-952150-1-0 (2023).
4. Distribution of 210-Polonium activity and Soil Texture in Agricultural soil, Proceedings of the twenty third national symposium on radiation physics: innovations in radiation physics, I**SBN** 978-81-952150-1-0 (2023). [**https://inis.iaea.org/records/22kvv-m4532**](https://inis.iaea.org/records/22kvv-m4532)
5. Crasta Rita, Sanjeev, Ganesh,Naik H, Goswami A,Suryanarayana S. V, Bhagwat P. V, Mohanty A. K,Shivashankar B. S,Prajapati P. M. (n, γ) cross-section for 238U at neutron energy of 11.90 MeV, Conference Proceedings of the DAE-BRNS symposium on nuclear physics. V. 57, Delhi (India), 3-7 Dec 2012, TRN: IN1301631090167, 456-457. [**https://inis.iaea.org/records/1j4q7-s9698**](https://inis.iaea.org/records/1j4q7-s9698)
6. Crasta Rita, Sanjeev, Ganesh,Naik H, Goswami A,Suryanarayana S. V, Bhagwat P. V, Mohanty A. K,Shivashankar B. S,Prajapati P. M., Measurement of cross-section for 238U(n, γ) reaction at an average neutron energy of 8.04 MeV, Conference: NSRP-19, 19th National symposium on radiation physics, Mamallapuram (India), 12-14 Dec 2012; TRN: IN1301175072062, 43-45. [**https://inis.iaea.org/records/wg5vv-2mw52**](https://inis.iaea.org/records/wg5vv-2mw52)
7. Crasta Rita, Sanjeev, Ganesh,Naik H, Goswami A,Suryanarayana S. V, Sharma S C, Mohanty A K, Bhagwat P V,Shivashankar B S,Mulik V K,Prajapati P M, Ganesan S. Measurement of the 232Th(n, γ)233Th and 232Th(n,2n)231Th reaction cross sections at neutron energy of 8.04 MeV. Conference: IInd International workshop on accelerator-driven sub-critical systems and thorium utilization, Mumbai (India), 11-14 Dec 2011; , TRN: IN1300448027649, 18. [**https://inis.iaea.org/records/gvtmj-egb25**](https://inis.iaea.org/records/gvtmj-egb25)
8. Crasta Rita, Sanjeev Ganesh, Hareesh K,Naik H, Goswami A,Suryanarayana S V, Bhagwat P V. Neutron induced cross section measurement on uranium, Conference: ISNS 2013: IInd International symposium on neutron scattering, Mumbai (India), 14-17 Jan 2013, TRN: IN1300772043817, 120-121.
9. Crasta Rita, Sanjeev Ganesh, Hareesh K, Chethan P, Naik H, Goswami A, Suryanarayana S.V, Shivashankar B.S, Raj Prakash H.G, Karunakara N, Somashekarappa H.M.Measurement of photo-neutron cross section of 238U, Proceedings of the DAE-BRNS symposium on nuclear and radiochemistry, 159-160, NUCAR 2013, <https://inis.iaea.org/records/1xbmf-83d33>

**Book Chapter**

A book chapter entitled “Spintronics: Bridging the gap between Magnetism and quantum computation” published in “Decadal Odyssey in Physics: A Chronicle of the PPK Endowment Lecture Series”, Publishers St Aloysius Prakashana, ISBN 978-81-963171-9-5.

**ORAL PRESENTATION**

1. Presented a paper entitled “ಗಾಮಾ ವಿಕಿರಣಗಳ ಸಹಾಯದಿಂದ ರೈತೋಪಯೋಗಿ ನ್ಯಾನೋ ಅರೆ ಘನರೂಪಿ ದ್ರಾವಣಗಳು”,

16th Kannada Vijnana Sammelana organized by Karnataka Science Congress on September 15-17, 2021.

1. Measurement of Cross-section for 238U(n, γ) reaction at an average neutron energy of 8.04 MeV,

19th National Symposium on Radiation Physics (NSRP-19) at Mamallapuram, Chennai, December. 12-14, 2012

1. Photon and Neutron induced Reaction Cross-section Measurement,

NDPCI-BRNS School on Nuclear Reactions and Applications- NRA-2016, at Bhabha Atomic Research Centre, Mumbai, November 2-12, 2016

**RESEARCH GRANTS**

1. Research Grants for Scientists /Faculty (RGS/F) under Vision Group on Science and Technology, Govt. of Karnataka for the project entitled " Natural Radioactivity Concentration in Medicinal Plants and Environmental Matrices in Coastal Regions" of Rs 5.00 Lakhs.
2. Research grant from Mangalore Jesuit Educational Society (MJES) for the project entitled “Distribution of Polonium-210 in Environmental Samples” of Rs 1.5 Lakhs.

**AWARDS**

* Young Researcher Award by Indian Society for Radiation Physics
* Nucleonix Researcher’s Award-2015 for the paper “Measurement of Photo-neutron Cross-section for 238U, 96Zr, 93Nb and 100Mo” in NSRP-20 organized by Mangalore University on October 28-30, 2015

**SHORT-TERM COURSES**

1. Attended science Academic Lecture workshop on Ever Young Topics in Physical and Chemical Sciences at St Aloysius (Deemed to be University), Mangalore on 17-18, February, 2025.
2. Participated one weak faculty development programme - Next-generation technologies: green hydrogen and carbon capture for a sustainable future, organised by department of Physics, SGR Krishnammal college for women in Association with SEPA, Coimbatore from 09.12.2024 to14.12.2024.
3. Short-term course NEP on Orientation and Sensitization programme-Malaviya Mission Teacher Training Center, UGC-HRDC, Bangalore University on 11-19, December 2023.
4. Two-day National Workshop on “Nuclear Radiation: Experiments and Instrumentation” at St Philomena College, Puttur on 19-20, May, 2022.
5. IUAC School on Nuclear Reactions 2021 (online) on November 15 - 20, 2021, organized by, Inter-University Accelerator Centre (IUAC), New Delhi.
6. One day online workshop on “Magnetoelectric Composites”, organized by Dept of Physics, Vidyavardhaka College of Engineering, Mysuru on June 23, 2021.
7. Short term course on “Journey from Semiconductor Physics to Smart Devices to Intelligent Automation”, organised by National Institute of Technology Srinagar and Semiconductor Society of India from 1, May- 5, May, 2021
8. One Week Online Faculty Development Program on Implementation of New Education Policy 2020: Role of Faculty Members of HEIs, organized by Teaching Learning Centre, Central University of Rajasthan 0n 4th - 8th Nov, 2020.
9. 6 weeks online non-credit course authorized by The University of Tokyo and offered through Coursera on the topic “From the Big Bang to Dark Energy” completed on October 31, 2020.
10. “Introduction to Differential Equations” a course of study offered by MITx, an online learning initiative of the Massachusetts Institute of Technology, completed on September 18, 2020.
11. “Particle Physics: an Introduction” 8 weeks online non-credit course authorized by University of Geneva and offered through Coursera completed on September 6, 2020.
12. Global Initiative of Academic Networks (GIAN) Short Term Course on “Advanced Direct Reading radon, Thoron and Progeny Sensors” on April 22-27, 2019 at Center for Advanced Research in Environmental Radioactivity (CARER), Mangalore University, Mangalagangothri
13. 21 days refresher course on “Degree College Teachers Training Programme in Physics”, conducted by Indian Institute of Science, Challakere Campus at Kudapura, Chitradurga, approved by MHRD, Govt. of India, from 25th November to 15th December 2017.
14. NDPCI-BRNS School on Nuclear Reactions and Applications- NRA-2016, at Bhabha Atomic Research Centre, Mumbai from 2-12, November 2016
15. Theme Meeting on Nuclear Reaction Data Evaluation, Homi Bhabha National Institute, Anushaktinagar, Feb. 13-17, 2012
16. The 4th DAE-BRNS Theme Meeting on EXFOR Compilation of nuclear data, Department of Physics, Panjab University, Chandigarh, April 4-8, 2011

**RESEARCH PRESENTATIONS IN CONFERENCES/ SYMPOSIA/SEMINAR**

1. Presented a paper at 23rd National Symposium On Radiation Physics (NSRP-23) entitled “Radon activity measurements in ground water samples” held at Mysore University on January 19 – 21, 2023 (ISBN no 978-81-952150-1-0)
2. Presented a paper at 23rd National Symposium On Radiation Physics (NSRP-23) entitled “Distribution of 210-Polonium activity and Soil Texture in Agricultural soil” held at Mysore University on January 19 – 21, 2023 (ISBN no 978-81-952150-1-0)
3. Presented a research paper to the 2nd National Conference on Radiation Physics ( NCRP 2022), entitled “Analysis of Radon Concentrations in Drinking Water in Coastal Regions of Karnataka, South India” at Bangalore University on December 15-16, 2022.
4. Assessment of indoor 22Rn and 220 Rn concentration in the coastal regions of Mangalore and Udupi, National Conference on Novel Materials and Devices for Future Applications, at St Aloysius College (Autonomous), Mangalore on 18, February 2020.
5. Neutron induced Reaction Cross-section Measurements, Two day National Conference on “Reaching the Unreached through Science and Technology” at Mangalore University on 8-9, September 2017.
6. Photon and Neutron induced Reaction Cross-section Measurement at NDPCI-BRNS School on Nuclear Reactions and Applications- NRA-2016, at Bhabha Atomic Research Centre, Mumbai from 2-12, November 2016.
7. Measurement of Photo-neutron Cross-section for 238U, 96Zr, 93Nb and 100Mo at the National Symposium on Radiation Physics (NSRP-20) organized by Mangalore University on October 28-30, 2015
8. Study of γ induced reactions and their applications at BRNS theme meeting on utilization of accelerators at electron beam centre, June 6, 2013
9. Neutron induced cross section measurement on Uranium at International Symposium on Neutron Scattering, Bhabha Atomic Research Centre, Mumbai, Jan. 14-17, 2013
10. Measurement of Cross-section for 238U(n, γ) reaction at an average neutron energy of 8.04 MeV,  Proceedings of the 19th National Symposium on Radiation Physics (NSRP-19) at Mamallapuram, Chennai, Dec. 12-14, 2012
11. (n, γ) cross-section for 238U at neutron energy of 11.90 MeV, Proceedings of the DAE Symposium on Nuclear Physics (SNP-2012), Department of Physics and Astrophysics, University of Delhi, Dec. 3-7, Volume 57, 456-457 2012
12. Measurement of (n, 2n) reaction cross-section on 232Th, National Seminar on advances in Materials Science, Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, Jan. 23-24, 2012
13. Measurement of photo-neutron reaction cross-section of 93Nb at end point bremsstrahlung energy of 10 MeV, Proceedings of the DAE Symposium on Nuclear Physics (SNP-2011), Andhra University Visakhapatnam Dec. 26-30, Volume 56, 1032-1033, 2011
14. Measurement of 232Th(n, γ)233Th and 232Th(n, 2n)231Th reaction cross sections at neutron energy of  8.04 MeV, 2nd International Workshop on Accelerator-driven sub-critical systems & thorium utilization, BARC, Mumbai, Dec. 11- 14, 2011
15. Photo-neutron cross-section of 96Zr using bremsstrahlung radiation with end point energy of 10 and 12.5 MeV, International Conference on Accelerator Radiation Safety, Bhabha Atomic Research Centre, Mumbai, November 16-18, 2011

**Google Scholar Link**

<https://scholar.google.com/citations?user=6T81W04AAAAJ&hl=en&authuser=1>