

List of publications

List of peer-reviewed publications included in the present thesis

1. Cross sections for the (n, p) reaction of selenium isotopes within 10.5 to 19.81 MeV neutron energies
R. K. Singh, N. L. Singh, R. D. Chauhan, Mayur Mehta, S. V. Suryanarayana, Rajnikant Makwana, S. Mukherjee, B. K. Nayak, H. Naik, J. Varmuza, K. Katovsky
Eur. Phys. J. Plus (2021) 136:338 Impact Factor: 3.758
<https://doi.org/10.1140/epjp/s13360-021-01299-x>
2. Neutron induced reaction cross section of ^{51}V with covariance analysis
R. K. Singh, N. L. Singh, R. D. Chauhan, Mayur Mehta, S. V. Suryanarayana, Rajnikant Makwana, S. Mukherjee, B. K. Nayak, H. Naik, Tarak Nath Nag, J. Varmuza, K. Katovsky
Eur. Phys. J. A (2021) 57:337 Impact Factor: 3.131
<https://doi.org/10.1140/epja/s10050-021-00638-x>
3. Systematic study of the $(n, 2n)$ reaction cross section for ^{121}Sb and ^{123}Sb isotopes
R. K. Singh, N. L. Singh, R. D. Chauhan, Mayur Mehta, S. V. Suryanarayana, Rajnikant Makwana, B. K. Nayak, H. Naik, Tarak Nath Nag, J. Varmuza
Chin. Phys. C Vol. 46, No. 5 (2022) 054002 Impact Factor: 2.944
<https://doi.org/10.1088/1674-1137/ac4a5a>
4. Experimental and theoretical study of the $^{65}\text{Cu}(n, p)^{65}\text{Ni}$ reaction cross section from reaction threshold up to 25 MeV
R. K. Singh, N. L. Singh, Mayur Mehta, R. D. Chauhan, S. V. Suryanarayana, Rajnikant Makwana, B. K. Nayak, H. Naik, Tarak Nath Nag, J. Varmuza, K. Katovsky
Phys. Rev. C 107, 054607 (2023) Impact Factor: 3.199
<https://doi.org/10.1103/PhysRevC.107.054607>
5. Activation cross section for the $(n, 2n)$ and (n, p) reactions on ^{103}Rh , ^{48}Ti and ^{51}Cr from reaction threshold up to 25 MeV energy region
R. K. Singh, N. L. Singh, Mayur Mehta, R. D. Chauhan, S. V. Suryanarayana, Rajnikant Makwana, B. K. Nayak, H. Naik, Tarak Nath Nag, J. Varmuza, K. Katovsky
(Accepted in ARI journal)

Other publications in peer-reviewed journals

1. Systematic study of (p, n) and $(p, 2n)$ reactions on ^{110}Cd
Vibhuti Vashi, Rajnikant Makwana, B. Quintana, M.H. Mehta, **R.K. Singh**, B.K. Son , R. Chauhan, S. Mukherjee, M. Abhangi, S. Vala, N.L. Singh, G.B. Patel, S.V. Suryanarayana, B.K. Nayak, S.C. Sharma, T.N. Nag, Y. Kavun
Radiation Physics and Chemistry, Vol. 208, July 2023, 110933 Impact Factor: 2.776
<https://doi.org/10.1016/j.radphyschem.2023.110933>
2. Cross-section of $(n, 2n)$ reaction for niobium and strontium isotopes between 13.97 to 20.02 MeV neutron energies
Mayur Mehta, N. L. Singh, **Ratankumar Singh**, Rakesh Chauhan, Rajnikant Makwana, S. V. Suryanarayana, H. Naik, P. V. Subhash, S. Mukherjee, Jan Varmuza, Karel Katovsky
Applied Radiation and Isotopes, Vol. 182, April 2022, 110142 Impact Factor: 1.787
<https://doi.org/10.1016/j.apradiso.2022.110142>
3. Measurement of cross sections for flux monitor reactions using quasi-monoenergetic neutrons
Vibhuti Vashi, Rajnikant Makwana, S. Mukherjee, B. K. Soni, M. H. Mehta, S. Parashari, **R. K. Singh**, R. Chauhan, S. V. Suryanarayana, B. K. Nayak, S. C. Sharma, H. Naik, N. L. Singh, T. N. Nag
Eur. Phys. J. Plus (2021) 136:746 Impact Factor: 3.228
<https://doi.org/10.1140/epjp/s13360-021-01673-9>
4. Study of $(n, 2n)$ reaction cross sections for ^{107}Ag within the energy range of 9–22 MeV
Rakesh Chauhan, **R. K. Singh**, N. L. Singh, Mayur Mehta, Rajnikant Makwana, S. V. Suryanarayana, S. Mukherjee, B. K. Nayak, H. Naik, J. Varmuza, K. Katovsky
Eur. Phys. J. Plus (2021) 136:532 Impact Factor: 3.228
<https://doi.org/10.1140/epjp/s13360-021-01449-1>
5. Measurement of $^{90}\text{Zr}(n, 2n)^{89}\text{Zr}$ and $^{90}\text{Zr}(n, p)^{90\text{m}}\text{Y}$ reaction cross sections in the neutron energy range of 10.95 to 20.02 MeV

Mayur Mehta, N. L. Singh, **R. K. Singh**, Siddharth Parashari, P. V. Subhash, H. Naik, R. D. Chauhan, R. Makwana, S. V. Suryanarayana, S. Mukherjee, A. Gandhi, J. Varmuza, K. Katovsky

Journal of Radioanalytical and Nuclear Chemistry (2021) 328:71–81

Impact Factor: 1.754

<https://doi.org/10.1007/s10967-021-07625-y>

6. Measurement of (n, γ) reaction cross section of ^{186}W isotope at neutron energy of 20.02 ± 0.58 MeV

Mayur Mehta, N. L. Singh, R. Makwana, P. V. Subhash, S. V. Suryanarayana, S. Parashari, Rakesh Chauhan, **R. K. Singh**, H. Naik, S. Mukherjee, B. Soni, S. Khirwadkar, J. Varmuza & K. Katovsky

Indian Journal of Pure & Applied Physics Vol. 58, May 2020, 392-396

Impact Factor: 0.653

<http://nopr.niscair.res.in/handle/123456789/54746>

7. Measurement of neutron induced $^{86}\text{Sr}(n, 2n)^{85}\text{Sr}$ reaction cross sections at different neutron energies

Nidhi Shetty, Rajnikant Makwana, Mayur Mehta, S. Mukherjee, N. L. Singh, S. V. Suryanarayana, S. Parashari, **R. Singh**, H. Naik, S. C. Sharma, S. Ayyala, B. Soni, R. Chauhan

Applied Radiation and Isotopes 154 (2019) 108866

Impact Factor: 1.787

<https://doi.org/10.1016/j.apradiso.2019.108866>

8. Elastic scattering for $^6\text{Li} + ^{51}\text{V}$ and systematic study of breakup threshold anomaly

H. Kumawat, C. Joshi, V. V. Parkar, V. Jha, B. J. Roy, Y. S. Sawant, P. C. Rout, E. T. Mirgule, **R. K. Singh**, N. L. Singh, B. K. Nayak, S. Kailas

Nuclear Physics A, Vol. 1002, October 2020, 121973 Impact Factor: 1.695

<https://doi.org/10.1016/j.nuclphysa.2020.121973>

9. Exploring breakup coupling effect in $^7\text{Li} + ^{92,100}\text{Mo}$ elastic scattering around Coulomb barrier energies

C. Joshi, H. Kumawat, **R. K. Singh**, N. L. Singh, D. Patel, B. K. Nayak, J. Acharya, A. Parihari, K. Rani, S. D. Sharma, G. Kaur, I. Ahmed, K. S. Golda, N. Saneesh, M. Kumar, A. Jhingan, P. Sugathan

Eur. Phys. J. A (2022) 58:40

Impact Factor: 3.043

<https://doi.org/10.1140/epja/s10050-022-00690-1>

10. Cross-section measurement of the $^{114}\text{Cd}(p, \gamma)^{115\text{m}}\text{In}$ reaction for nuclear reactor and astrophysical applications

Vibhuti Vashi, Rajnikant Makwana, B. Quintana, M. H. Mehta, B. K. Soni, S. Mukherjee, **R. K. Singh**, R. Chauhan, P. M. Prajapati, M. Abhangi, S. Vala, N. L. Singh, G. B. Patel, S. V. Suryanarayana, B. K. Nayak, S. C. Sharma, T. N. Nag, and Y. Kavun

Phys. Rev. C 105, 044613 (2022)

Impact Factor: 3.199

<https://doi.org/10.1103/PhysRevC.105.044613>

11. Inclusive α production for the $^6\text{Li} + ^{51}\text{V}$ system

C. Joshi, H. Kumawat, V. V. Parkar, D. Dutta, S. V. Suryanarayana, V. Jha, **R. K. Singh**, N. L. Singh, and S. Kailas

Phys. Rev. C 105, 034615 (2022)

Impact Factor: 3.199

<https://doi.org/10.1103/PhysRevC.105.034615>

Publications in National/International Conference Proceedings

1. Measurement of reaction cross-section for $^{197}\text{Au}(n, 2n)^{196}\text{Au}$ reaction

Vibhuti Vashi, R. Makwana, S. Mukherjee, B. Soni, M. H. Mehta, S. Parashari, **R. K. Singh**, S. V. Suryanarayana, B. K. Nayak, S. C. Sharma, H. Naik, Tarak Nath
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 64, B31-381 (2019).

2. Neutron nuclear data of $(n, 2n)$ reaction for Sb Isotopes

R. K. Singh, R. D. Chauhan, S. V. Suryanarayana, Rajnikant Makwana, S. K. Mukherjee, Mayur Mehta, Tarak Nath, Bhargav Soni
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 64, B123-565 (2019).

3. Measurement of $^{100}\text{Mo}(n, 2n)^{99}\text{Mo}$ reaction cross sections using 10-20 MeV quasi-monoenergetic neutrons

19th International Scientific Conference on Electric Power Engineering (EPE) 2018.

<https://doi.org/10.1109/EPE.2018.8395960>

4. Production cross-section of the $^{99\text{m}}\text{Tc}$ medical isotope by using the $^{\text{nat}}\text{Mo}(p, 2n)$ reaction

Siddharth Parashari, S. Mukherjee, S. V. Suryanarayana, R. Makwana, B. K. Nayak, **Ratan K. Singh**, S. C. Sharma, M. Mehta, N. L. Singh, H. Naik
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B42-464 (2018).

5. Measurement of the $^{115}\text{In}(n, 2n)^{114\text{m}}\text{In}$ reaction cross-section using the quasi-monoenergetic neutrons
 Bhargav K. Soni, Siddharth Parashari, S. Mukherjee, S. V. Suryanarayana, R. Makwana, B. K. Nayak, **Ratan K. Singh**, S. C. Sharma, M. Mehta, N. L. Singh, and H. Naik
 Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B43-466 (2018).
6. Measurement of neutron induced reaction cross-sections for ^{86}Sr at different neutron energies
 Nidhi Shetty, Rajnikant Makwana, Mayur Mehta, N. L. Singh, S. Mukherjee, S. V. Suryanarayana, Siddharth Parashari, **Ratan Kumar**, Sai Akhil Ayyala, Chandni Menpara
 Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B108-596 (2018).
7. Measurements of cross section of $^{160}\text{Gd}(n, 2n)^{159}\text{Gd}$ reaction at energies of 10.72, 14.72 and 18.72 MeV
 Rakesh Chauhan, **Ratan Kumar Singh**, Rajnikant Makwana, N. L. Singh, S. Mukherjee, H. Naik, Mayur Mehta, B. K. Soni, S.V. Suryanarayana
 Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B138-656 (2018).
8. Entrance Channel Dependence of fusion-fission Dynamics in mass ~ 200 region
 Golda K. S., H Singh, C. Yadav, Mohit Kumar, N. Saneesh, A. Jhingan, Kavita Chouhan, **R. Kumar**, R. R. Dubey, Abhishek Yadav, Neeraj Kumar, A. Banerjee, Anjali Rani, Kavita Rani, J. R. Acharya, Ratan, S. Noor, S. K. Duggi, P. Sugathan
 Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B150-680 (2018).
9. Measurement of $^{78}\text{Se}(n, p)^{78}\text{As}$ reaction cross-sections at different neutron energies
Ratankumar Singh, Rakesh Chauhan, N. L. Singh, S. V. Suryanarayana, Siddharth Parashari, Rajnikant Makwana, S. K. Mukherjee, Mayur Mehta, Sai Akhil Ayyala, S. C. Sharma
 Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B159-698 (2018).
10. Measurement of $^{93}\text{Nb}(n, 2n)^{92}\text{Nb}$ cross-section at different neutron energies
 Mayur Mehta, N. L. Singh, P.V. Subhash, Rajnikant Makwana, Rakesh Chauhan, **Ratankumar Singh**, H. Naik, S. Mukherjee, S. V. Suryanarayana, Vibha Vansola, Y. Santhi Sheela, Mitul Abhangi, Sudhirsingh Vala, Naveen Agrawal, Nidhi Shetty, R. Acharya
 Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B163-706 (2018).

11. Reaction dynamics of weakly bound stable projectile for system ${}^6\text{Li}+{}^{51}\text{V}$
C. Joshi, H. Kumawat, V. V. Parkar, V Jha, B. J. Roy, Y. S. Sawant, P. C. Rout, E. T. Mirgule, R. Tripathi, **R. K. Singh**, N. L. Singh, B. K. Nayak
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 63, B169-718 (2018).
12. Measurement of ${}^{100}\text{Mo}(n, 2n){}^{99}\text{Mo}$ reaction cross-sections
Siddharth Parashari, S. Mukherjee, H. Naik, S.V. Suryanarayana, Rajnikant Makwana, Mayur Mehta, **Ratan Kumar**, N. L. Singh, Sai Akhil Ayyala
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 62, B20-400 (2017).
13. Measurement of the cross-section ${}^{107}\text{Ag}(n, 2n){}^{106\text{m}}\text{Ag}$ reaction on neutron energy 13 MeV and 22 MeV
Chhavi Joshi, **Ratan K. Singh**, Siddharth Parashari, Mayur Mehta, Rakesh Chauhan, Rajnikant Makwana, S. K. Mukherjee, N. L. Singh
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 62, B125-610 (2017).
14. Cross-section measurement of the ${}^{103}\text{Rh}(n, 2n){}^{102}\text{Rh}$ reaction at 22 MeV Energy
Ratan Kumar Singh, Parasari Siddharth, N. L. Singh, Rajnikant Makwana, S. K. Mukherjee, Mayur Mehta, Sai Akhil, Chhavi Joshi
Proceedings of the DAE Symp. On Nucl. Phys. Vol. 62, B135-630 (2017).
Proceedings of the DAE Symposium on Nuclear Physics
<http://www.sympnp.org/proceedings/>