

काशी हिन्दू  
विश्वविद्यालय



BANARAS HINDU  
UNIVERSITY

An Institution of National Importance established by an Act of Parliament

# JOURNAL OF SCIENTIFIC RESEARCH

of

THE BANARAS HINDU UNIVERSITY

ISSN No. 0447-9483

Volume 66, Issue 5

October 2022

[www.bhu.ac.in/research\\_pub/jsr/](http://www.bhu.ac.in/research_pub/jsr/)



**The Editorial Board  
of  
JOURNAL OF SCIENTIFIC RESEARCH  
ISSN NO. 0447-9483  
Institute of Science  
Banaras Hindu University, Varanasi – 221005, India  
www.bhu.ac.in/research\_pub/jsr/**

---

**CHIEF EDITORS**

**Director**

Institute of Science, BHU Varanasi, India

**&**

**Dean**

Faculty of Science, BHU Varanasi, India

**EXECUTIVE EDITOR**

**Prof. Maya Shankar Singh, FNA, FASc, FNASc**

Department of Chemistry, Institute of Science, BHU Varanasi, India

E-Mail: mayashankarbhu@gmail.com; mssingh@bhu.ac.in

**EDITORS**

<b>Prof. A. M. Kayastha</b>	School of Biotechnology	kayasthabhu@gmail.com
<b>Prof. K. K. Upadhyay</b>	Dept. of Chemistry	drkaushalbhu@yahoo.co.in
<b>Prof. P. K. Singh</b>	Dept. of Geology	prakashbhu@rediffmail.com
<b>Prof. G. Narayan</b>	Dept. of MHG	gnarayan@bhu.ac.in
<b>Prof. S. K. Dubey</b>	Dept. of Botany	skdubey@bhu.ac.in
<b>Prof. B. K. Singh</b>	Dept. of Physics	bksingh@bhu.ac.in
<b>Prof. Rajnikant Mishra</b>	Dept. of Zoology	rmishraa@bhu.ac.in
<b>Prof. Rajesh Singh</b>	Dept. of Statistics	rsinghstat@gmail.com
<b>Prof. R. K. Singh</b>	Dept. of Biochemistry	rakesh_bc@bhu.ac.in
<b>Dr. Anupam Priyadarshi</b>	Dept. of Mathematics	anupampriya@bhu.ac.in
<b>Dr. Anshul Verma</b>	Dept. of Computer Science	anshul.verma@bhu.ac.in



# Volume 66, Issue 5 – October 2022

## Table of Contents

### Section-A: Earth Sciences

1. **Spectroscopy of Gossans and associated lithology and its implication in geo exploration- A Case Study in the Parts of Rajpura-Dariba Group, Rajasthan, India** 1-08  
*Anantha Rao D, Joji V S, Arindam Guha, Vinod Kumar K and Dhananjaya Rao E*  
<http://dx.doi.org/10.37398/JSR.2022.660501>
2. **An Appraisal of Soil Erosion in Dehradun Valley** 09-11  
*Alok Kumar Pandey, Sharad Kumar Tripathi and Avijit Mahala*  
<http://dx.doi.org/10.37398/JSR.2022.660502>
3. **Landslide susceptibility zonation using analytical hierarchy process and GIS for the Nandakini River Valley, Central Himalaya** 12-15  
*Alok Kumar Pandey and Avijit Mahala*  
<http://dx.doi.org/10.37398/JSR.2022.660503>

### Section-B: Life Sciences

4. **Biomass Energy Resource – Future of Global Power Production** 16-23  
*Susmita Mukherjee, Camellia Mazumder, Aditi Biswas, Aratrik Roy, Ananya Chatterjee and Sonali Paul*  
<http://dx.doi.org/10.37398/JSR.2022.660504>
5. **Analysis of mutational spectra in SARS-CoV-2 spike protein and its course of evolution to predict the ‘Alarming Variants’ for the upcoming wave of pandemic** 24-33  
*Shuvam Banerjee, Sreejita Dutta, Shrinjana Dhar and Pritha Bhattacharjee*  
<http://dx.doi.org/10.37398/JSR.2022.660505>
6. **Prevalence of anaemia in pregnant women among rural population of Kurhani block, Muzaffarpur district Bihar: A cross-sectional Primary Health Center based study** 34-39  
*Kumar Abhishek, Md Zahid Ansari, Roshan Kamal Topno, (Major) Madhukar, Debjani Ram Purakayastha, Hemant Mahajan, Rakesh Bihari Verma, Sanjay Kumar Chaturvedi, Dharmendra Kumar, VidyaNand Rabi Das, Sanjay Kumar Sinha, Kundan Kunal, Chandra Shekhar Lal and Krishna Pandey*  
<http://dx.doi.org/10.37398/JSR.2022.660506>
7. **Secretory acetylcholinesterase activities in fresh *Ascaridia galli* adult (Nematoda), excretory/secretory products, post-secretory parasite and gastrointestinal tissue of host *Gallus gallus domesticus*: A preliminary** 40-47

**comparative study in host-parasite relationship**

*Sulagna Maity, Subhoshree Mondal, Arup Kumar Ghosh and Ipsit Chakrabarti*

<http://dx.doi.org/10.37398/JSR.2022.660507>

- 8. Next Generation Antivenoms and Their Neutralizing Efficacy against Snakebite Envenoming 48-59**

*Pradip Bhattacharjee, Sanjukta Manna and Subir Chandra Dasgupta*

<http://dx.doi.org/10.37398/JSR.2022.660508>

- 9. Causes And Consequences of Sex Ratio Distortion 60-69**

*Pragya Dubey and A. K. Singh*

<http://dx.doi.org/10.37398/JSR.2022.660509>

**Section-B: Physical Sciences**

- 10. Investigation of Cosmological Models using EoS parameter in Modified theory of Gravity 70-74**

*M.R. Ugale and S.B. Deshmukh*

<http://dx.doi.org/10.37398/JSR.2022.660510>

- 11. A Rician Noise Prediction and Removal Model for MRI Head Scans using wavelet based Non-Local Median Filter 75-87**

*T. Kalaiselvi, T. Anitha1 and Sriramakrishnan*

<http://dx.doi.org/10.37398/JSR.2022.660511>

- 12. Development of Airport Terminology based Synthetic Animated Indian Sign Language Dictionary 88-94**

*Rakesh Kumar Attar, Vishal Goyal and Lalit Goyal*

<http://dx.doi.org/10.37398/JSR.2022.660512>

- 13. A statistical analysis of X- class solar flares and their association with the super active regions during solar cycles 23- 24 95-102**

*Abha Singh, Anurag Chaudhary, V. S. Rathore and A. K. Singh*

<http://dx.doi.org/10.37398/JSR.2022.660513>

- 14. Cationic and Anionic Substitutions in the Antibacterial and Biocompatibility Properties of Sol-Gel Derived Hydroxyapatite Nanocomposites 103-119**

*H. Sirajunisha, A. Krishnaveni, D. Sellathamil Selvaraj and T. Balakrishnan*

<http://dx.doi.org/10.37398/JSR.2022.660514>

- 15. A Bayes Estimation for the Parameters of Misclassified Size-biased Poisson Lindley Distribution and its Application 120-131**

*B. S. Trivedi, M. N. Patel, D. R. Barot*

<http://dx.doi.org/10.37398/JSR.2022.660515>

- 16. Decipher Multi-Objectives gathering with liberate Dates Problem 132-136**

*Tanveer A. Tarray, Zahoor A. Ganie and Mohd. Khalid*

<http://dx.doi.org/10.37398/JSR.2022.660516>

- 17. Control chart using bootstrap method for logistic-exponential percentiles 137-143**

*Mahendra Saha, Abhimanyu Singh Yadav, G. Srinivasa Rao, Sanku Dey and Bipul Sarkar*

<http://dx.doi.org/10.37398/JSR.2022.660517>

- 18. A study on multipole mixing ratio of  $\gamma$ -transitions from unfavoured to favoured signature partner of the  $\pi_{h11/2}$  band in  $^{129}\text{Cs}$  144-148**

*S. Chakraborty*

<http://dx.doi.org/10.37398/JSR.2022.660518>

\*\*\*