Department of Mathematics

Sl. No.	Name of the faculty member	Details
1.	Dr. Raju B. Jummannaver	
2.	Area of Research	Graph Theory
3.	Research Publications	32
4.	Projects	-----
5.	Ph. D. Degree(Awarded/Pursuing)	-----
6.	Citations	190 h-index 09 i10-index 09

List of Publications:

1. **R. B. Jummannaver,** I. Gutman, R. K. Mundewadi, "On Zagreb Indices and Coindices of Cluster Graphs", *Bull. Int. Math. Virtual Inst*, *8*(3) (2018), 477-485. DOI: 10.7251/BIMVI1803477J

2. **R. B. Jummannaver**, S. D. Shindhe, B. Deshpande, "Modeling Physico-Chemical Properties of Benzenoid Hydrocarbons Using Topological Indices of Molecular Graphs", Advances *and Applications in Mathematical Sciences*, 20(10) (2021), 2299 – 2311.

3. **R. B. Jummannaver,** R. A. Mundewadi, A. S. Yalnaik, B. S. Hadimani, V. Bhandge, "Numerical Solution of Singular Lane-Emden Type Equations using Clique Polynomial", *Engineering Letters,* 32(5) (2024), 904-918.

4. H. S. Boregowda, **R. B. Jummannaver**, "Neighbors degree sum energy of graphs", *J. Appl. Math. Comput.* (2021). https://doi.org/10.1007/s12190-020-01480-y(Springer).

5. **R. B. Jummannaver**, K. Narayankar and D. Selvan, "Zagreb Index and Coindex of kth Generalized Transformation Graphs", *Bull. Int. Math. Virtual Inst*, *10*(2) (2020), 389-402. DOI: 10.7251/BIMVI2002389J

6. **R. B. Jummannaver**, P. R. Yatnalli, A. S. Yalnaik, S. Butte, "Neighbors degree sum exponent polynomial and neighbors degree sum exponent energy of graphs", *Annals of Mathematics and Computer Science*, *17* (2023), 50-55.

7. H. S. Ramane, V. B. Joshi, **R. B. Jummannaver**, S. D.Shindhe, "Relationship Between Randić Index, Sum-Connectivity Index, Harmonic Index and π-Electron

Energy for Benzenoid Hydrocarbons", *National Academy Science Letters,* 42(6) (2019), 519-524, https://doi.org/10.1007/s40009-019-0782-y (Springer)

8. H. S. Ramane, **R. B. Jummannaver**, "Note on the forgotten topological index of molecular graphs in drugs", *Applied Mathematics and Nonlinear Science*, 1(2) (2016),369–374.(Spain) https://doi.org/10.21042/amns.2016.2.00032

9. H. S. Ramane, **R. B. Jummannaver**, "Harary spectra and Harary energy of line graphs of regular graphs", *Gulf Journal of Mathematics*, 4(1) (2016),39–46. ISSN: 2309-4966.

10. H. S. Ramane, K. S. Pise, **R. B. Jummannaver**, D. D. Patil, "Applications of neighbors degree sum of a vertex on Zagreb indices", MATCH Commun. Math. Comput. Chem., 85(2) (2021), 329-348.

11. R. A. Mundewadi, **R. B. Jummannaver,** "A novel approach for the numerical solution of nonlinear Fredholm integral equations using Hosoya polynomial method", *International Journal of Mathematics and Computer in Engineering*, (2024).

12. H. S. Ramane, **R. B. Jummannaver**, S. Sedghi, "Some degree based topological indices of generalized transformation graphs and of their complements", *International Journal of Pure and Applied Mathematics*, 109(3) (2016), 493 – 508. (Bulgaria) https://doi.org/10.12732/ijpam.v109i3.2

13. A. S. Yalnaik, S. Butte, **R. B. Jummannaver**, B. Hadimani, V. Bhandage, "The RR, RRR And RM_2 Indices of Generalized Transformation Graphs G^{xy}," *Global & Stochastic Analysis*, 11(1) (2024).

14. H. S. Ramane, **R. B. Jummannaver**, V. K. Kyalkonda, "Randić index of some class of trees with an algorithm", *International Journal of Computer Applications TechnologyandResearch*,5(9) (2016), 590-594. https://doi.org/10.7753/ijcatr0509.1006

15. H. S. Ramane, **R. B. Jummannaver**, I. Gutman, "Seidel Laplacian energy of graphs", Int. J. Appl. Graph Theory, 2(2017), 74-82.

16. H. S. Ramane, V. B. Joshi, **R. B. Jummannaver**, V. V. Manjalapur, S. C. Patil, S. D. Shindhe, V. S. Hadimani, V. K. Kyalkonda, B. C. Baddi, "Hamming index of a graph generated by an edge-vertex incidence matrix", *International Journal of Mathematical Sciences and Engineering Applications*, 9(1) (2015), 93– 103.

17. H. S. Ramane, **R. B. Jummannaver**, V. S. Hadimani, "Relationship of molecular weight with Randic index, Harmonic index and pi-electron energies of some benzenoid hydrocarbons", Journal of Basic and Applied Research International, 22(1) (2017), 36-42.

18. H. S. Ramane, M. M. Gundloor, **R. B. Jummannaver**, "Third Zagreb index and forgotten index of some cluster graphs", 21(4) (2017), 210-216.

19. Anjum Khan, **R. B. Jummannaver**, "Arithmatic-Geometric index of generalized transformation graphs", *Asian Journal of Mathematics and Computer Research*, 25(1) (2018), 1-7.

20. H. S. Ramane, I. Gutman, J. B. Patil and **R. B. Jummannaver**, "Seidel signless Laplacian energy of graphs", Mathematics Interdisciplinary Research, 2(2017),181-192.

21. S. C. Shiralashetti, H. S. Ramane, R. A. Mundewadi, **R. B. Jummannaver,** "A Comparative Study on Haar Wavelet and Hosaya Polynomial for the numerical solution of Fredholm integral equations", *Applied Mathematics and Nonlinear Science*, 3(2) (2018), 447–458. https://doi.org/10.21042/amns.2018.2.00035

22. H. S. Ramane, G. A. Gudodagi and **R. B. Jummannaver**, "On Terminal Hosoya Polynomial of Some Thorn Graphs", *International J. Math. Combin.*,4(2017),103-109.

23. H. S. Ramane, **R. B. Jummannaver**, "Computation of Zagreb indices and forgotten index of Aztec Diamond", *Aryabhata Journal of Mathematics & Informatics*, 9(1) (2017).

24. H. S. Ramane, B. Basavanagoud, and **R. B. Jummannaver**, "Harmonic index and Randi\'{c} index of generalized transformation graphs", *Journal of the Nigerian Mathematical Society*, 37(2) (2018), 57-69.

25. H. S. Ramane, S. C. Shiralashetti, R. A. Mundewadi, **R. B. Jummannaver,** "Numerical solution of Fredholm integral equations using Hosoya polynomial of path graphs", *American journal of numerical analysis*, 5(1) (2017), 11–15.

26. S. Kumbinarasaiah, H. S. Ramane, R. A. Mundewadi, **R. B. Jummannaver,** "Solutions of differential equations using linearly independent Hosoya polynomials of trees", *International Journal of Mathematics and Computer in Engineering*, 2(1) (2024), 13–22.

27. A. S. Yalnaik, M. S. Ranganath, V. Lokesha, **R. B. Jummannaver,** "Computation of topological indices of linear chains of perylene and coronene using M-polynomial", *J. App. Math.*, 2(3) (2024), 563.

28. H. S. Ramane, I. B. Baidari, **R. B. Jummannaver**, V. V. Manjalapur, G. A. Gudodagi, A. S. Yalnaik, "Hamming index of a graph with respect to incidence matrix", *Indonesian Journal of Combinatorics*, 6(2) (2022), 120–129.

29. H. S. Ramane, K. S. Pise, **R. B. Jummannaver**, "Symmetric division deg index and coindex of derived graphs", *J. Adv. Math. Stud.*, 16(2) (2023), 203– 208.

30. H. S. Ramane, K. S. Pise, **R. B. Jummannaver**, D. Patil, "On Neighborhood Zagreb indices and coindices of graphs", *Bulletin of the international mathematical virtual institute*, 13(1) (2023), 155–168.

31. R. A. Mundewadi, H. S. Ramane, **R. B. Jummannaver,** "Numerical solution of first order delay differential equations using Hosoya polynomial method", *Indian J. Discrete Math,* 4(1) (2018), 1-11.

32. H. S. Ramane, H. N. Maraddi, **R. B. Jummannaver,** "Degree Subtraction Adjacency Eigenvalues and Energy of Graphs*", Journal of Computer and Mathematical Sciences,* 9(11) (2018), 1661-1670.