



About Me

My scholarly work is centered on the graphs and their chemical applications. This is evidenced by a prolific publication record (90+ SCOPUS/WoS articles) and protected intellectual property (2 patents). I am committed to academic lineage and fostering the development of novel methodologies in the field.



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Areas of Research

- Graph Theory
- Combinatorics
- Mathematical Chemistry



Language

- English
- Kannada
- Hindi

Dr. Sunilkumar M. Hosamani

Associate Professor

Department of Mathematics

Rani Channamma University

Belagavi-591156

Karnataka



Education

(2008-2012)

KARNATAK UNIVERSITY, DHARWAD

Ph.D

*Under the guidance of
Prof. B. Basavanagoud*

(2006-2008)

KARNATAK UNIVERSITY, DHARWAD

Master of Science in Mathematics

(2003-2006)

KARNATAK UNIVERSITY, DHARWAD

Bachelor of Science



Experience

(2012 -2021)

ASSISTANT PROFESSOR

Department of Mathematics
Rani Channamma University
Belagavi

(2021 to Present)

ASSOCIATE PROFESSOR

Department of Mathematics
Rani Channamma University
Belagavi

RESEARCH PROJECTS COMPLETED

Title	Sponsoring Agency	Duration	Total Grant in Rs
A Study on equitable Domination and its related domination parameters in Graph	Science and Engineering Research Board, New Delhi	04 Years	14, 83,200/-
Applications of Fuzzy Molecular Descriptors In Prediction of Physico-Chemical Properties of Various Drugs	Rani Channamma University	01 year	75,000/-

Books Published

- Degree Equitable Domination and Topological Indices in Graphs, Lambert Academic Publishing, Co. Germany, ISBN: 978-613-9-92746-3.
- QSPR Analysis Through Topological Indices of Molecular Graphs, Lambert Academic Publishing, Co. Germany, ISBN: 978-6139940127.

Patents

- Device for Optimizing Mathematical Algorithms in Computational Geometry, Design No. : 412610-001, Serial No. : 171346 Date : 04/04/2024 , The Patent Office, Government of India
- Computer Device for Wireless Sensor Networks using Graph Theory, Design number: 6356925, Grant date: 23 April 2024, Registration date: 04 April 2024 Intellectual Property Office, United Kingdom

Invited talks / Special Lectures

- International Conference on Mathematical Analysis and Its Applications (ICMAA-2024) from 02nd to 04th AUGUST, 2024”, Organized by the Department of Mathematics, Karnatak University, Dharwad, in collaboration with Pavate Institute of Mathematical Sciences (PIMSci.) and Dharwad Regional Science Centre, K. U. Campus, Dharwad **(Invited Talk)**
- National Conference on Graph Theory and Allied Topics during 23-24 October, 2024 Organized by Department of Studies in Mathematics, University of Mysore, 6 Manasagangotri, Mysuru **(Invited Talk)**
- State Level Workshop on Research Methodology conducted by IQAC Basaveshwara Science College, Bagalakote on 4-7- 2024. **(Invited Talk)**
- International Conference on Multidisciplinary Research, 22nd - 24th November- 2022 Organized by Sharnbasva University Sharnbasveshwar Institutions Campus Kalburgi- 585103,Karnataka, India **(Invited Talk)**

Research Guidance

Name of the Candidate	Year of Registration	Current Status
Ravishankar L. Hutagi	2021	Submitted
Umesh S. Mujumdar	2021	under process
Parashuram B. H	2021	under process
Shivakumar Hiremath	2024	under process

Memberships of University Bodies/other organizations

- Life member, Academy of Discrete Mathematics and Applications (ADMA), India
- Life member, Indian Mathematical Society
- Life Member, Academia for Advanced Research in Mathematics (AARM), India
- Member, P G Teacher's Association, RCU-Belagavi
- Chairperson, Board of Examination (BOE), P G Department of Mathematics, RCU-Belagavi
- Member, Board of Studies (BOS), P G Department of Mathematics, RCU-Belagavi
- Member, Board of Examination (BOE), Akkamahadevi Women's University, Vijayapura
- Member(External), Doctoral Committee (DC), Sharanabasaveshwara University, Kalaburgi

Extension Activities

- Served as a Nodal Officer for SAKALA, Rani Channamma University, Belagavi
- Served as a Warden, Brhmaputra Hostel, Rani Channamma University, Belagavi

Courses Taught at PG Level

- Algebra
- Real Analysis
- Linear Algebra
- Discrete Mathematical Structures
- Statistics and Quantitative Techniques
- Measure Theory
- Topology
- Coding Theory
- Graph Theory
- Combinatorial Network Theory

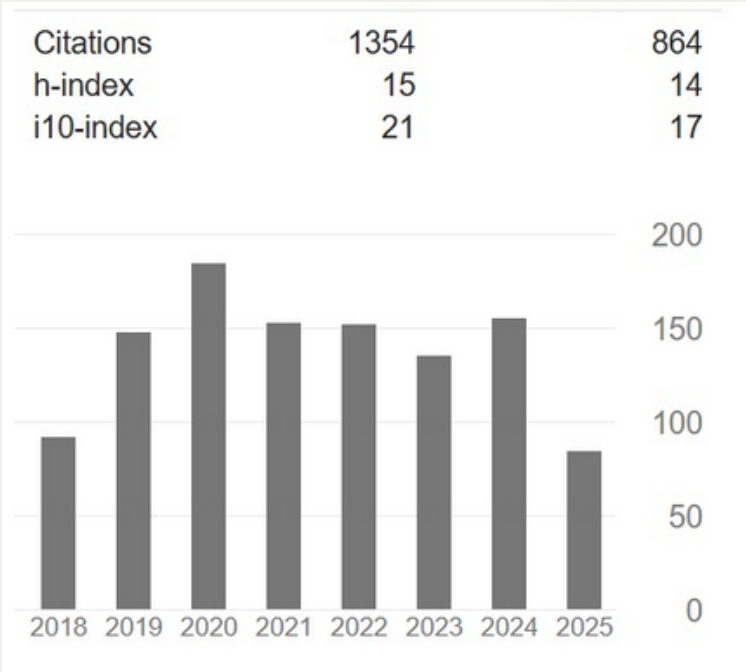
Research Collaborations

1. Prof. I. Gutman, Faculty of Science, University of Kragjevec, SERBIA
2. Prof. I. N. Cangul, Dean of Science and Arts, Uludag University, Istanbul, TURKEY
3. Dr. Marcin Krzykowski, University of Johansberg, SOUTH AFRICA
4. Dr. M. R. Farahani, Iran University of Science and Techonology, IRAN
5. Prof. Toufic Mansour, University of Haifa, Isrel
6. Prof. H. S. Ramane, Karnataka University, Dharwad, INDIA
7. Prof. V. Lokesha, S.K. University, Bellary, INDIA

Reviewer for National/International Journals

- Scientific Reports (NATURE)
- Journal of Applied Mathematics and Computing (Springer)
- Mathematical Science Letters, Natural Science Publications, USA
- MATCH communications in mathematical and in computer Chemistry(SCI Journal)
- Journal of Applied Mathematics and Informatics, Korea
- Discussiones Mathematicae Graph Theory

H-Index and Citation Database: Source Google Scholar



List of Publications

1	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud) The middle dominating graph of a graph , Int. J. Contemp. Math. Sciences, Vol. 5(55) (2010), 2709-2715 Refereed Journal with Impact Factor 0.221) (Bulgeria).
2	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud and S. H. Malghan), Domination in Semitotal-point graphs , J. Comp and Math. Sci, Vol. 1(5) (2010), 598-605. (Refereed Journal With Impact Factor 1.91) (Bhopal, India).
3	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud and S. H. Malghan), Maximal domination in Semitotal-point graphs , Ultra-Scientist, Vol. 22(3)M (2010), 711-718. (Refereed Journal With Impact Factor 1.5) (Bhopal, India).
4	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud and S. H. Malghan), Entire semitotal-point domination in graphs , International J. Math. Combin, Vo. 4 (2010), 79-85. (China).
5	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud and S.H.Malghan), Edge semitotal-point domination in graphs , International J. of Math. Sci & Engg. Appls. (IJMSEA), Vol. 5(I) (2011), 53-60 (Refereed Journal With Impact Factor 0.1752)(Pune, India).
6	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud) Connected semitotal-point domination in graphs , International Journal of Advances in Science and Technology, Vol.2 (4) (2011), 117-125 (U.K).
7	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud), Miscellaneous properties of total minimal dominating graph , Journal of Analysis and Computation, Vol. 7(1) (2011), 1-7 (India).
8	<i>Sunilkumar Hosamani</i> (with B. Basavanagoud), Mediate dominating graph of a graph , International Journal of Mathematical Combinatorics, Vol.3 (2011), 68-75 (China).
9	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud), Complete cototal domination number of a graph , J.Sci.Res.3(3), (2011), 547-555 (Refereed Journal With Impact Factor 0.184).
10	<i>Sunilkumar M. Hosamani</i> (with B. Basavanagoud and P.V. Patil) Domination in degree splitting graphs , Journal of Analysis and Computation, Vol. 8(1), 1-8 (2012). (India).
11	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud and S. H. Malghan), Complementary edge Semitotal-point domination in graphs , International J. of Math. Sci & Engg. Appls. (IJMSEA), Vol. 6(4), 211-221(2012) (ISSN 0973-9424 Refereed Journal With Impact Factor 0.1752)(Pune, India).
12	<i>Sunilkumar M Hosamani</i> (with B. Basavanagoud) Connected cototal domination number of a graph , Transactions on Combinatorics, Vol. 01 (2), 17-25 (2012) ISSN (on-line): 2251-8665 .
13	<i>Sunilkumar M. Hosamani</i> (with B. Basavanagoud and P. V. Patil), Cototal domination in semitotal-point graph , International Journal of Advances in Science and Technology , Vol. 4, No 4, 109 to 114 (2012).
14	<i>Sunilkumar Hosamani</i> (with B. Basavanagoud), Edge dominating graph of a graph , Tamakang Journal of Mathematics, 43(4) , 603-608 December 2012 (Refereed Journal With Impact Factor 0.67)
15	<i>Sunilkumar Hosamani</i> (with B. Basavanagoud), Degree equitable edge domination in graphs , Vishwa International Publications, Editor: V. R. Kulli., 101-110 (2012).

16	Sunilkumar Hosamani(with B. Basavanagoud), Degree equitable connected domination in graphs, ADMS, 5(1). 1-11 (2013).
17	Sunilkumar Hosamani(with B. Basavanagoud), A note on minimal dominating and common minimal dominating graphs, Bulletin Of The International Mathematical Virtual Institute, Vol. 3, 99-101 (2013) (Refereed Journal With Impact Factor 0.9501).
18	Sunilkumar Hosamani(with B. Basavanagoud and V. V. Teli), Semientire domination in graphs, J. Comp. & Math. Sci. Vol.4 (5), 376-380 (2013) (Refereed Journal With Impact Factor 1.91).
19	Sunilkumar Hosamani(with I. Gutman), Zagreb indices of Transformation graphs and total transformation graphs, Applied Mathematics and Computation, 247, 1156-1160 (2014)(Elsevier Journal With Impact Factor 1.345).
20	Sunilkumar Hosamani(with B. Basavanagoud), New Upper Bounds for the first Zagreb index, MATCH communications in mathematical and in computer chemistry, 74(1):97-101 (2015) (Refereed Journal With Impact Factor 3.858).
21	Sunilkumar Hosamani(with S. H. Malghan and I. N. Cangul), The First Geometric-Arithmetic Index Of Graph Operations, Advances and Applications in Mathematical Sciences, 155-163(2015) (Refereed Journal)
22	Sunilkumar Hosamani(with P. V. Patil), Bounds for the minimum covering energy of a graph, Jamal academic research journal, 93-96 (2016) (Refereed Journal).
23	Sunilkumar Hosamani(with M. R. Farahani, Rajesh Khanna), On The Second Zagreb Eccentricity Index Of Linear Polycene Parallelogram Of Benzenoid $P(N,N)$, Journal of Environmental Science, Computer Science and Engineering and Technology, 55(22):1-6 (2016) (Refereed Journal With Impact Factor 5.857).
24	Sunilkumar Hosamani(with M. R. Farahani, M. K. Jamil and Rajesh Khanna), The Wiener Index And Hosoya Polynomial Of The Subdivision Graph Of The Wheel $S(W_n)$ And The Line Graph Subdivision Graph Of The Wheel $L(S(W_n))$, Applied mathematics, 6(2), 21-24 (2016) (Refereed Journal).
25	Sunilkumar Hosamani, An Improved proof for the Wiener index when $\text{diam}(G) \leq 2$, Mathematical Science Letters, 5, No. 2, 1-2 (2016) (Refereed Journal With Impact Factor 2.316).
26	Sunilkumar Hosamani(with M. R. Farahani, Rajesh Khanna and Pradeep Kumar), The Edge Zagreb Indices Of Circumcoronene Series Of Benzenoid, International Journal of Mathematics and its Applications, 4(1), 69-74 (2016) (Refereed Journal With Impact Factor 0.564).
27	Sunilkumar Hosamani, Computing Sanskruti index of certain nanostructures, Journal of Applied Mathematics and Computing, 1-9 (2016) (Springer).
28	Sunilkumar Hosamani(with H. S. Ramane), On Degree-Sum Energy of a Graph, European Journal of Pure and Applied Mathematics, 9(3), 340-345 (2016) (Refereed Journal With Impact Factor 2.12).
29	Sunilkumar Hosamani(with H. S. Ramane and M. M. Gundlur), Seidel equienergetic graphs, Bulletin of Mathematical Sciences and Applications, 16, 62-69 (2016) (Refereed Journal).
30	Sunilkumar Hosamani, Correlation of domination parameters with physico-chemical properties of octane isomers, Applied Mathematics and Nonlinear Sciences 1(2) (2016) 345-352 (Refereed Journal).

31	Sunilkumar M. Hosamani and Marcin Krzywkowski, On the difference of Zagreb coindices of graph operation, Gulf Journal of Mathematics, 4(3)(2016), 36-41
32	Sunilkumar M. Hosamani, Ashwini index of a graph, Int. J.Industrial Mathematics, 8(4)(2016), 377-384.
33	Sunilkumar M. Hosamani(with V. Loksha, In. N. Cangul), On certain topological indices of the derivred graphs of subdivision graphs, TWMS J. App. Eng. Math. V.6, N.2, 2016, pp. 324-332.
34	Sunilkumar M. Hosamani(with Wie Gao and M.R. Farhani), Experimental study of air-steam gasification of municipal solid wastes (MSW) using Ni-Cu/Al ₂ O ₃ nano catalysts, Energy Sources Part A Recovery Utilization and Environmental Effects, March (2017)1-5(Taylor and Francis group)
35	Sunilkumar M. Hosamani(with Mehdi Rezaei Mohammad Reza Farahani Muhammad Kamran Jamil), On the terminal Wiener index and Zagreb indices of Kragujevac trees, International Journal of Pure and Applied Mathematics 113(5)(2017):617-625
36	Sunilkumar M. Hosamani(with Wie Gao and M.R. Farhani), Distance learning techniques for ontology similarity measuring and ontology mapping, 20 (May 2017) 959-968(SPRINGER)
37	Sunilkumar M. Hosamani(With Vijay Gadag and Bhagyashri Kulkarni), QSPR Analysis of Certain Graph theoretical matrices and their corrsponding energy, Applied Mathematics and Nonlinear Sciences 2(1) (2017) 131-150
38	Sunilkumar M. Hosamani(With Shaohui Wang and M.R.FARAHANI), The Schultz Polynomial, Modified Schultz Polynomial And Their Indices For The Jahangir Graphs J ₄ M, Pacific Journal of Applied Mathematics 8(3) (2017) 157-165
39	Sunilkumar M. Hosamani(With De-Xun Li, Jia-Bao Liu and M.R.FARAHANI), Zagreb indices of Semi-total(total) Block Graphs of Bridge and Chain Graphs, Journal of Computational and Theoretical Nanoscience 14(6):2692-2695 · June 2017
40	Sunilkumar M. Hosamani(With Wie Gao and M.R.FARAHANI), Experimental and modeling study of oxy-fuel combustion of coal particles for heat and power generation, Energy Sources Part A Recovery Utilization and Environmental Effects, (2017) https://doi.org/10.1080/15567036.2016.1249808 (Taylor and Francis group)
41	Sunilkumar M. Hosamani(With De-Xun Li, Jia-Bao Liu and M.R.FARAHANI), Computation of K-Indices for Certain Nanostructures, Journal of Computational and Theoretical Nanoscience 14(4):1784-1787, June 2017
42	Sunilkumar Hosamani(with S. H. Malghan and P. V. Patil), A Note On The Minimum Dominating Energy Of A Graph , Palestine Journal of Mathematics 6(1):1-4,June 2017)
43	Sunilkumar Hosamani(with Deepa Perigidad and Sharada gavade), QSPR Analysis of Certain Degree Based Topological Indices, J. Stat. Appl. Pro. 6, No. 2, 1-11 (2017)
44	Sunilkumar Hosamani, On topological properties of the line graphs of subdivision graphs of certain nanostructures-II, GJSCR, 17(4), 2017
45	Sunilkumar M. Hosamani(with S. H. Malghan and P. V. Patil) First Zagreb Coindex of hamiltonian Graphs, Journal of Information and Optimization Sciences, 38:3-4, 417-422

46	Sunilkumar M. Hosamani(with Shailaja Shankar Shirkol, Shobha V Patil) , Acharya Polynomial Of Some Graph Transformations, Bulletin Mathematics and Statistics Research, 5(3) 75-82(2017)
47	Sunilkumar M Hosamani (with Mohammad Reza Farahani, Y. Y. Gao and Muhammad Shoaib Sardar), Computing Sanskruti Index Of Turc4c8(S) Nanotube, International Journal of Pharmaceutical Sciences and Research 8(10):4423-4425(2017)
48	Sunilkumar M. Hosamani(with V. Lokesha and Shruti R) Operations On Gear Graph With Topological Indices, IJMMS , Vol. 13, No. 2, (July-December 2017) : 379-387.
49	Sunilkumar M. Hosamani (with E. Suresh, T. Mansour and M. A. Rastomi), More on inverse degree and topological indices of graphs, Filomat, 32(1):165-178 (2018)
50	Sunilkumar M. Hosamani, Degree Equitable regular set domination in graphs, national AcademyScience Letters (Springer), Doi. 10.1007/s40009-018-0651-0, 2018
51	Sunilkumar M. Hosamani(with Shailaja Shankar Shirkol, Shobha V Patil), On Hyper Terminal Index of Graph, International Journal of Mathematical Archive, 09(10), 13-19 (2018).
52	Sunilkumar M. Hosamani(with Rachanna Kanabur), Some Numerical Invariants Associated with V-phenylenic Nanotube and Nanotori, Eng. Appl. Sci. Letters, Vol. 1(2018), Issue 1, pp. 01-09.
53	Sunilkumar M. Hosamani(with B. Basavanagouda and S.T. Timmanaikar), The Accurate Independent Dominating Energy of a Graph, International Journal of Applied Engineering Research, Volume 13, Number 22 (2018) pp. 15539-15543.
54	Sunilkumar M. Hosamani(with Shailaja Shankar Shirkol, Shobha V Patil), Degree based topological indices of Penta chains, IOSR Journal of Applied Chemistry 14(04):26-37 (2018)
55	Sunilkumar M. Hosamani(with B. Basavanagouda and Anand P. Barangi), First Neighbourhood Zagreb Index of Some Nanostructures, PROCEEDINGS OF IAM, 7(2), 178-193 (2018).
56	Sunilkumar M. Hosamani, Degree Equitable Regular Set Domination in Graphs. Natl. Acad. Sci. Lett. 41, 379-383 (2018). https://doi.org/10.1007/s40009-018-0651-0
57	Sunilkumar M. Hosamani(with Kanabu, Rachanna) (2018) <i>Some Numerical Invariants Associated with V-phenylenic Nanotube and Nanotori</i> . Engineering and Applied Science Letters, 1(2018 (1). pp. 1-9. ISSN 26179695
58	Sunilkumar M. Hosamani(with V. B. Awati and R. M. Honmore), On graphs with equal dominating and c-dominating energy, Applied Mathematics and Nonlinear Sciences 4(2) (2019) 503-512
59	Sunilkumar M. Hosamani (with Shailaja Shirakol and Manjula Kalyanshetti), QSPR analysis of certain distance based topological indices, Applied Mathematics and Nonlinear Sciences 4(2) (2019) 371-386
60	Sunilkumar M. Hosamani (Veerebradiah Lokesha, K. M. Devendraiah, Mohammed Reza Farahani, and Ismail Naci Cangul), On the Sanskruti index of certain line graphs of subdivision graphs, Advances in Mathematical Sciences and Applications Vol. 28, No. 1 (2019), pp. 115-121.
61	Sunilkumar M. Hosamani (with B. S. Durgi and Sachin Mekkalike), Applications of Eccentricity Based Topological Indices in QSPR Studies, Journal of Xi'an University of Architecture & Technology, Volume XII, Issue IV, 2020, 5691-5705

62	Sunilkumar M. Hosamani (with B. S. Durgi and Sachin Mekkalike), On the modified Weiner index and its chemical applicability, <i>Advances in Mathematics: Scientific Journal</i> 9 (2020), no.9, 7689–7698
63	Sunilkumar M. Hosamani (with B. Chaluvvaraju and S A. Diwakar), Graph Theoretic Parameters Associated With PBIB Design via Partial Geometries Of Generalized Polygon. <i>South East Asian Journal of Mathematics & Mathematical Sciences</i> , 2020, Vol 16, Issue 1, p157
64	Sunilkumar M. Hosamani (with V. Loksha and Shobha V Patil), On Plick Graphs with Point-outercoarseness Number One, On Plick Graphs with Point-outercoarseness Number One. (2020). <i>European Journal of Pure and Applied Mathematics</i> , 13(5), 1300–1305. https://doi.org/10.29020/nybg.ejpam.v13i5.3716
65	Sunilkumar M. Hosamani (with Shailaja S. Shirakol and Shobha V. Patil), Hyper Terminal Wiener Index of Some Dendrimer Graphs and Detour Saturated Trees, <i>Palestine Journal of Mathematics</i> Vol. 9(2)(2020) , 740–748
66	Sunilkumar M Hosamani (with S. Prabhu, G. Murugan, Jia-Bao Liu, M. Arulperumjothi) On the Sanskruti Index of Certain Silicate and Its Derived Structures, <i>Advances in Electrical and Computer Technologies: Select Proceedings of ICAECT 2020</i> , 2021.
67	Sunilkumar M Hosamani (with Shailaja Shirkol, Preeti B. Jinagouda, Marcin Krzywkowski) Degree equitable restrained double domination in graphs, <i>Electronic Journal of Graph Theory and Applications</i> , Vol. 9, No. 1, (2021).
68	Sunilkumar M Hosamani (with Shobha V. Patil, Shailaja S. Shirkol, Murat Cancan) Degree distance based topological indices of some graph transforms, <i>Journal of Discrete Mathematical Sciences & Cryptography</i> , (2022).
69	Sunilkumar M Hosamani (with Shobha V. Patil, Shailaja S. Shirkol, Mohammad Reza Farahani, Mehdi Alaeiyan, Murat Cancan) On the Acharya Index for Characterization of Chemical Graphs, <i>Mathematical Statistician and Engineering Applications</i> , Vol. 71, No. 383, (2022).
70	Sunilkumar M Hosamani (with Bhakti S. Bhadre, Jaishri B. Veeragoudar) Properties of Partial Complement Mycielskian Graph , <i>Annals of Pure and Applied Mathematics</i> , Vol. 28, No. 2, (2023).
71	Sunilkumar M Hosamani (with Hanumantha Reddy D T, M V Chakradhara Rao) Sombor Index of Fuzzy Graphs and its Applications, <i>TuijinJishu/Journal of Propulsion Technology</i> , Vol. 44, No.6, (2023).
72	Sunilkumar M Hosamani (with Hanumantha Reddy D T, M V Chakradhara Rao) On the Modified First Zagreb Index of Generalized Fuzzy Transformation Graphs, <i>TuijinJishu/Journal of Propulsion Technology</i> , Vol. 44, No.6, (2023).
73	Sunilkumar M Hosamani (with Sakander Hayat, Sunilkumar M. Hosamani, Asad Khan, Ravishankar L. Hutagi, Umesh S. Mujumdar, Mohammed J. F. Alenazi) A novel edge-weighted matrix of a graph and its spectral properties with potential applications, <i>AIMS Mathematics</i> , Vol.9, No. 9, (2024).
74	Sunilkumar M Hosamani (with Sujata T. Timmanaiakar, Sakander Hayat, Shabana Banu) Structure-property modeling of coumarins and coumarin-related compounds in pharmacotherapy of cancer by employing graphical topological indices, <i>The European Physical Journal E</i> , (2024).
75	Sunilkumar M. Hosamani (with Ravishankar L. Hutagi and Umesh Mujumdar), Python-Based Computation of NSo (G) Energy: Bounds and QSPR Analysis on COVID-19 Drugs, <i>Journal of Dynamics and Control</i> Vol. 01 Issue 01. (2025) 8 1 - 9 2