

R. Balakrishnan

Adjunct Professor

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Academic Qualifications

- 1957 **B.Sc., (Hons.) in Mathematics**, Annamalai University
- 1959 **M.A. in Mathematics**, Annamalai University
- 1963 **M.Sc. (by Research)**, Annamalai University
- 1968 **Ph.D.**, University of Maryland, USA

Positions held

- 2012 onwards **Adjunct Professor**, Bharathidasan University, Tiruchirappalli
- 2004 – 2008 **DST Chair in Discrete Mathematics**, SRC. SASTRA University,, Kumbakonam
- 2002-2004 **AICTE Emeritus Professor (one term)**, Bharathidasan University, Tiruchirappalli
- 1998 - 2002 **Worked as NBHM Emeritus Professor (Two terms)**, Bharathidasan University, Tiruchirappalli
- 1986-1998 **Chairman, Department of Mathematics**, Annamalai University
- 1973-1986 **Post-Graduate Professor and Head of the Department of Mathematics**, National College, Tiruchirappalli
- 1958-1964 & 1968-1973 **Lecturer in Mathematics**, Annamalai University

Current Areas of Research

Algebraic Graph Theory and Graph Coloring.

Funded Research Projects

Completed Projects

S. No.	Agency	Period		Project Title	Budget
					Rs. in Lakhs
1	DST New Delhi	2009	2012	Energies of Graphs, Digraphs and Signed Digraphs	16,24,400
2	Indo-French Centre for the Promotion of Advanced Research in Mathematics (IFCPAR)	1993	1995	Factorizations and Decompositions of Graphs	

Research Supervision/Guidance:

Program of Study		Completed	Ongoing
Research	Ph.D.	10	-

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books/Chapters Monographs/Manuals
57	41	15	16	12

Books Published:5

- [1] My Springer book: A Textbook of Graph Theory (With K. Ranganathan as Co-author) crossed three thousand and eighty two (3082) citations during March 2026.
- [2] (with Xuding Zhu, Zhejiang Normal University, China) Combinatorial Nullstellensatz: with Applications to Graph Colouring, CRC Press, 2021.

- [3] (with S. Sridharan, Perpignan University, France) Discrete Mathematics (Graph Algorithms: Algebraic Structures, Coding Theory and Cryptography), CRC Press(Taylor & Francis), 2019.
- [4] (with S. Sridharan, Perpignan University, France) Foundations of Discrete Mathematics, CRC Press (Taylor & Francis), 2018.
- [5] (With K. Ranganathan) A textbook of Graph Theory , (Revised and Enlarged) Second Edition, Springer 2012.
- [6] (with N. Ramabhadran) A Textbook of Modern Algebra, Vikas Publishing House, New Delhi.

Books Co-edited:6

- [1] Proceedings of the ICM 2010 Satellite Congress on Recent Trends in Graphs and Combinatorics (ICRTGC - 2010)- Discrete Mathematics 312 (2012).
- [2] Proceedings of the International Conference on Discrete Mathematics, December 2006, held at Indian Institute of Science, Bangalore; published under the RMS-LNS Lecture Notes Series, International Press, Boston.
- [3] Proceedings of the March 2001 Conference on Graph Theory and its Applications, Anna University, Chennai; published by Narosa Publishing House.
- [4] Proceedings of the January 1998 Conference on Graph Connections held at Cochin University of Science and Technology; published by M/s. Allied Publishers, India.
- [5] Proceedings of the International Conference on Discrete Mathematics held at Tiruchirappalli in January 1996. Proceedings was published as Vol. 206 (August 1999) of the North Holland (now Elsevier) Journal: Discrete Mathematics.
- [6] Proceedings of the Ramanujan Centennial International Conference held at Annamalai University in December 1987; published by the Ramanujan Mathematical Society.

Events organized in leading roles

International Conferences Organized:21

One of the principal organizers for the following:

- [1] International Conference in Discrete Mathematics, ICDM 2025, Bharathidasan University, Tiruchirappalli, December 11-13, 2025.
- [2] International Workshop on Combinatorial Methods in Graph Theory, Amrita University, Coimbatore, July 14-16, 2022.

- [3] International Conference in Discrete Mathematics, SSN College of Engineering, Chennai, November 20-22, 2019.
- [4] Sixth India-Taiwan Conference on Discrete Mathematics, Indian Institute of Technology Varanasi, November 15-18, 2019.
- [5] 13th Annual Conference of the Academy of Discrete Mathematics and Applications, SSN College of Engineering, Chennai, June 8-10, 2017.
- [6] Workshop on Interconnection Networks, Amrita University, Coimbatore, April 25-29, 2017.
- [7] International conference on Graph theory, South Asian University, New Delhi, September 15-17, 2016.
- [8] 31st Annual (International) Conference of the Ramanujan Mathematical Society held at National College campus, Tiruchirappalli, during June 18-21, 2016.
- [9] International Conference on Graph Theory and its Applications, Amrita University, Coimbatore, December 16-19, 2015
- [10] International Conference on Graph Coloring and Spectral Graph Theory held at Pondicherry University, July 15-16, 2015.
- [11] International Workshop on Graph Coloring June 2010, Bharathidasan University, Tiruchirappalli.
- [12] International Conference on Discrete Mathematical Chemistry (2008), Kalapet, Kerala.
- [13] International Conference on Discrete Mathematical Chemistry (2007), PESIT, Bangalore.
- [14] International Conference on Discrete Mathematics ICDM 2008, held at University of Mysore, Mysore.
- [15] International Conference on Discrete Mathematics ICDM 2006, held at Indian Institute of Science, Bangalore.
- [16] International Conference on Number Theory and Discrete Mathematics, January 3-6, 1996, held at Tiruchirappalli.
- [17] Ramanujan Centennial International Conference, 1987, held at Annamalai University.

Papers Presented at Conferences:

- [1] Indian Mathematical Society Conference, Bangalore, 1968. Title: Multiplier groups of Difference sets.
- [2] Indian Mathematical Society Conference, Madras, 1963. Title: Algebra of Magic Matrices.

Invited Talks Delivered:

- [1] Delivered a course of 3 lectures at the International Workshop on Combinatorial Methods in Graph Theory held during July 14-16, 2022 at Amrita University, Coimbatore.
- [2] Speaker in the Symposium on Graph Theory and Combinatorics held at 86th Annual Conference of Indian Mathematical Society, December 17-20, 2020.
- [3] Pre-conference workshop on "Algebraic and Applied Combinatorics" held at National College, Tiruchirappalli, June 15-17, 2016. Delivered a course of lectures on Combinatorial Nullstellensatz.
- [4] Seethalakshmi Ramaswami College, Trichy on January 19, 2016 Title : Polynomials with Integer Coefficients.
- [5] Organized Fourth India-Taiwan Conference on Discrete Mathematics held at the Indian Institute of Technology, Madras, July 10-13, 2015.
- [6] International Conference on Graph Coloring and Spectral Graph Theory held at Pondicherry University during July 15- 16, 2015 Title : The automorphism group of Knodel graphs.
- [7] National Conference on Graph Theory and Automata held at St. Joseph's College, Tiruchirappalli held during January 9-10, 2015 Title : Ramanujan Graphs.
- [8] National Conference on Graph Theory at SSN College of Engineering, Chennai, held during December 18-20, 2014 Title: Knodel Graphs in Interconnection Networks.
- [9] Workshop on Linear Algebra held at Reva University, Bangalore on December 15, 2014.
- [10] Interconnection Networks at the Conference on Graph Theory held at St. Xavier's College for Women, Aluva, Kerala, August 7-9, 2014.
- [11] Delivered the Frank Harary Endowment Lecture at the Annual Conference of ADMA, Reva University, Bengaluru, June 10-13, 2014. Title: Two major theorems in graph theory.
- [12] "Coloring Games in Graphs" at the National Conference on Graph Theory and its Applications held at Periyar University, Salem, January 6-7, 2014.
- [13] The National Conference on Graph Coloring and its Applications, Dr. Ambedkar Institute of Technology, Bangalore July 27-28, 2013
- [14] Delivered a course of 5 lectures in the Workshop preceding International Conference on Discrete Mathematics (ICDM 2013) on Spectral Graph Theory on June 7-9, 2013 at Karnatak University, Dharwad.
- [15] The India-Slovenia Conference in Discrete Mathematics held at the Department

- of Future Studies, Kerala University, Thiruvananthapuram. Topic: Skew Spectrum of the Cartesian Product of an Oriented Graph with an Oriented Hypercube.
- [16] "Choosability in Graphs" at the Workshop on Graph Coloring held at Indian Statistical Institute, Chennai during January 25-27, 2013.
 - [17] National Seminar on Graph theory, MS University Tirunelveli, Feb 21-22,1996. Title: Nowherezero flows in networks.
 - [18] 10th Annual conferenc of the Ramanujan Mathematical Society, Rishikesh,May 24-26, 1995. Title: The Pseudo achromatic number of $2K_n, m$.
 - [19] Seminar on graph theory and its applications, Loyola College, Madras, March 3, 1995. Title: 1-Factorizations of complete graphs.
 - [20] Seminar on graph theory and stochastics processes, AVC college, Mayiladuthurai, Feb 2, 1995. Title: Applications of graph theory to phasing of traffic lights.
 - [21] National Seminar in Mathematics, Sri Venkateswara University, Tirupati, Dec 10, 1994. Title: Hadamard Matrices.
 - [22] Prof. R. Vaidyanathaswamy Centennial Colloquium at the Ramanujan Institute of Mathematics, University of Madra, Madras, Dec 7-8, 1994. Title: Tensor product of graphs.
 - [23] Ninth Annual conference of the Ramanujan mathematical society, Kerala University. Trivandram, May 17-19, 1994.
 - [24] National workshop on graph theory and its applications, Manipal Institute of Technology, April 4-10, 1994. Title: Lectures on orthogonal Latin square.
 - [25] National seminar on recent developments in mathematics, Karnatak Univeristy, Dharwad, Dec 16-18, 1993.
 - [26] National Seminar on Algebra and its applications, Bharathidasan University, Tiruchirappalli, April 11-19. Title: Hadamard Matrices.
 - [27] Seminar on graph theory, Madurai Kamaraj Univeristy, Madurai, September 11-12, 1992. Title: Decomposition of complete tripartite graphs.
 - [28] Seventh Annual conference of the Ramanujan Mathematical Society, Jiwaji University, Gwalior, June 25-27, 1992. Title: Some graph decomposition problems.
 - [29] National Seminar on current traends on Mathematics, Ramanujan Institue of Mathematics, Madras, Feb 29, 1992. Title: Colouring point sets in the plane.
 - [30] Chaired a session at International conference on Combinatorics and applications, ISI calcutta, 1982.
 - [31] COSSIP programme, Aditanar Colleges, Thiruchendur, 1981.
 - [32] Indian Mathematical Society conference, Bangalore, 1980, Powers of chordal graphs.

- [33] International conference on Combinatorics, ISI Calcutta, 1980. Title: Cycle mappings of graphs.
- [34] National seminar on Algebra, Madras, 1980. Title: Cycle mappings of Graphs.
- [35] COSSIP programme, St. Joseph's college, Trichy, 1973. Title: Lectures on group representations (10 Lectures).
- [36] ISI conference on Combinatorics, New Delhi, 1972. Title: Multiplier theorem for Difference of sets.
- [37] International Conference in Mathematics and Physics, Madras, 1969. Title: Some results in Multilinear algebra.
- [38] Summer Institute in Mathematics,, Annamalai University, 1972. Title: Lectures on Topology
- [39] National Science Day meeting organized by Kalasalingam Academy for Research and Education, December 22, 2020.
- [40] Symposium organized in honour of Professor S.S. Shrikhande by the Indian Mathematical Society at its annual meet: December 17-20, 2020. Delivered an invited talk on: The List Chromatic Number of a Graph.
- [41] Dhirubhai Ambani Institute of Information and Communication Institute, Gandhi Nagar, Gujarat, June 2018, Title : Interconnection Networks.

Overseas Exposure/ Visits

- [1] Organized Fifth India –Taiwan Conference on Discrete Mathematics, Tamkang University, Taipei, Taiwan, July 18- 21, 2017.
- [2] Organized Third India - Taiwan Conference on Discrete Mathematics held in National Chiao Tung University, Taiwan during November 18-22,2013.
- [3] Chaired a session at the International Workshop on Graph Theory, National Sun-Yatsen University, Kaohsiung, Taiwan, August 14-16, 2012. Also delivered a lecture on : Skew spectra of Oriented Graphs.
- [4] Organized Second India - Taiwan Conference on Discrete Mathematics, Amrita University, Coimbatore, September 8-11, 2011.
- [5] Organized First India-Taiwan Conference in Discrete Mathematics, November 2009, Taipei, Taiwan.
- [6] CNRS University of Nice, Sophia Antipolis, France, Sep 24-Oct 4, 1994. Title: Psuedochromatic colouring of graphs.
- [7] University of Paris, Laboratoire Recherches Informatique, Orsay, Paris, France, Sep 11-Oct 10, 1994. Title: Graph Colourings.
- [8] CNRS University of Nice, Sophia Antipolis, France, June 11-27, 1993. Title:

Some problems in graph decompositions.

- [9] University of Paris, Laboratoire Recherches Informatique, Orsay, Paris, France, May 28 – June 11, 1993. Title: Graph Decompositions.
- [10] Department of Industrial Engineering, University of Toronto, Canada, March 8, 1993.
- [11] Department of Mathematics, Washington, D.C., USA, March 5, 1993. Title: Some open problems in Graph theory.
- [12] Department of Mathematics, Moorehouse college, Atlanta, USA, March 4, 1993. Title: Graphs theory and its applications.
- [13] Department of Mathematics, University of South Carolina, Clemson, USA, March 3, 1993. Title: Some problems in graph theory.
- [14] Department of Mathematics and Department of Computer Science, University of Georgia, USA, March 1-2, 1993. Title: Joint Colloquium talk on some decomposition and labelling problems of graphs.
- [15] International conference on combinatorics, graph theory and computing, Florida Atlantic University, Feb 22-26, 1993, USA. Title: Decomposition of complete tripartite graphs.
- [16] School of Business, University of Louisville, USA, Feb 17, 1993. The teleprinter problem.
- [17] Department of Mathematics, Louisville, Kentucky, USA, Feb 15-19. Title: Lectures on Decompositions and Labelings of Graphs.
- [18] Paper Presented in Third Waterloo International Conference on Combinatorics, Waterloo, 1968. Title : Characteristic Polynomials of Incidence Matrices

Membership in

Professional Bodies

- Life Member: Ramanujan Mathematical Society
- Life Member: Indian Mathematical Society.
- Life Member: American Mathematical Society.
- Life Member: Academy of Discrete Mathematics and Applications (ADMA)
- Life Member: National Academy of Sciences, India (NASI)
- Founder-Secretary (1985-1988): Ramanujan Mathematical Society
- Chief Editor: Mathematics Newsletter (1991-2004)
- President: Academy of Discrete Mathematics and Applications (ADMA)(2016-2018)
- Editor-in-Chief: Indian Journal of Discrete Mathematics (2018-2021)

List of Publications

- [1] R. Balakrishnan, Srilakshmi Krishnamurthy and Wasin So. Resistance distance in connected balanced digraphs. *Discrete Applied Math.*, 337:46–53, 2023.
- [2] R. Balakrishnan, P. Paulraja, Wasin So and M. Vinay. Some properties of the Knödel graphs $w_k (k \geq 4)$. *Australasian Jour. of Combinatorics*, 74:17–32, 2019.
- [3] R. Balakrishnan, S. Francis Raj and T. Kavaskar. b- coloring of cartesian product of trees. *Taiwanese Journal of Mathematics*, 20(1):1–11, Feb 2016.
- [4] R. Balakrishnan and G. Indulal. Distance spectrum of indu-bala products of graphs. *AKCE International Journal of Graphs and Combinatorics*, July 2016.
- [5] R. Balakrishnan. Adjacency spectrum and laplacian spectrum of a graph. In *Handbook of Graph Theory, Combinatorial Optimization and Algorithms.* (C.R.C) Press, Dec 2015.
- [6] R. Balakrishnan and S. Francis Raj. Bounds for the b-chromatic number of the mycielskian of some families of graphs. *ARS Combinatoria*, 12:85–96, 2015.
- [7] R. Balakrishnan, A. Anuradha and Wasin So. Skew spectra of graphs without even cycles. *Linear Algebra and its Applications (Elsevier)*, 444:67–80, 2014.
- [8] R. Balakrishnan, A. Anuradha and G. Indulal. Some new families of integral graphs. *Indian Journal of Pure and Applied Mathematics (Springer)*, pages 805–817, 2014.
- [9] R. Balakrishnan, S. Francis Raj and T. Kavaskar. Bounds for the b-chromatic number of cartesian product of graphs. *Graphs and Combinatorics (Springer)*, 30:511–520, 2014.
- [10] R. Balakrishnan and S. Francis Raj. Bounds for the b-chromatic number of g-v. *Discrete Applied Mathematics*, 161:1173–1179, 2013.
- [11] R. Balakrishnan, A. Anuradha , Xiaolin Chen, Xueliang Li, HuishuLian and Wasin So. Skew spectra of oriented bipartite graphs. *The Electronic Journal of Combinatorics*, 20(4), 2013.
- [12] R. Balakrishnan and T. Kavaskar. Interpolation theorem for partial grundy coloring. *Disc. Mathematics (Elsevier)*, 313:949–950, 2013.

- [13] R. Balakrishnan ,T. Kavaskar and Wasin So. The energy of the mycielskian of regular graphs. *Australasian Journal of Combinatorics*, 52:163–171, 2012.
- [14] R. Balakrishnan. Lecture notes in spectra and energies of graphs,manipal institute of technology. *Manipal University Press*, pages 16–26, 2012.
- [15] R. Balakrishnan and T. Kavaskar. b-coloring of kneser graphs. *Disc. Applied Math. (Elsevier)*, 160:9–14, 2012.
- [16] R. Balakrishnan , S. Francis Raj and T. Kavaskar. b-chromatic number of cartesian product of some families of graphs. *Disc. Applied Math. (Elsevier)*, 160:2709–2715, 2012.
- [17] R. Balakrishnan and A. Anuradha. Skew spectrum of the cartesian product of an oriented graph with an oriented hypercube,proc. international workshop and conference on combinatorial matrix theory and generalized inverses of matrices. *Springer*, 2012.
- [18] R. Balakrishnan , N., Sridharan and K. Viswanathan Iyer. A sharp lower bound for the weiner index of a graph. *ArsCombinatoria*, 2011.
- [19] R. Balakrishnan and T. Kavaskar. Fall coloring of graphs-ii. *Discussiones Mathematicae Graph Theory*, 76:21–31, 2011.
- [20] R. Balakrishnan and T. Kavaskar. Color chain of a graph. *Graphs and Combinatorics*, *Springer*, 27:487–493, 2011.
- [21] R. Balakrishnan , C. Adiga and Wasin So. The skew energy of a digraph. *Linear Algebra and its Applications*, 432:1825–1835, 2010.
- [22] R. Balakrishnan and S. Francis Raj. The wiener number of powers of the mycielskian. *Discussiones Mathematicae Graph Theory*, 30, 2010.
- [23] R. Balakrishnan and T. Kavaskar. Fall coloring of graphs-i. *Discussiones Mathematicae Graph Theory*, 30:385–391, 2010.
- [24] R. Balakrishnan and S. Francis Raj. Bounds for the b-chromatic number of vertex deleted subgraphs and the extremal graphs. *Electronic Notes in Discrete Mathematics*, 34:353–358, 2009.
- [25] R. Balakrishnan and S. Francis Raj. Connectivity of the mycielskian of a graph. *Discrete Mathematics*, 308:2607–2610, 2008.

- [26] R. Balakrishnan and S. Francis Raj. The wiener number of kneser graphs. *Discussiones Mathematicae Graph Theory*, 28:219–228, 2008.
- [27] R. Balakrishnan ,K. Viswanathan Iyer and K.T. Raghavendra. Weiner index of two special tress. *MATCH Communications, Math. Comput. Chem.*, 57:385–392, 2007.
- [28] R. Balakrishnan, N., Sridharan and K. Viswanathan Iyer. The weiner index of odd graphs. *Journal of Indian Institute of Science*, 86:527–531, 2006.
- [29] R. Balakrishnan. The energy of a graph. *Linear Algebra and its applications*, 387(1):287–295, 2004.
- [30] R. Balakrishnan , Bermond, J.C and P. Paulraja. On hamilton cycle decompositions of the tensor product of complete graphs. *Discrete Mathematics*, 268(1-3):49–58, 2003.
- [31] R. Balakrishnan , V. Yegnanarayanan and R. Sampathkumar. On the existence of graphs with prescribed coloring parameters. *Discrete Mathematics*, 216(1-3):293–397, 2000.
- [32] R. Balakrishnan ,Jean-Claude Bermond , Michael Jacobson and P. Paulraja. Combinatorics and number theory – preface. *Discrete Mathematics*, 206(1-3):1–1, 1999.
- [33] R. Balakrishnan, R. Sampathkumar and V. Yegnanarayanan. Extremal graphs in some colouring problems. *Discrete Mathematics*, 186:15–24, 1998.
- [34] R. Balakrishnan and P. Paulraja. Hamilton cycles in tensor product of graphs. *Discrete Mathematics*, 186(1-3):1–13, 1998.
- [35] R. Balakrishnan , Selvam Avadayappan and V. Yegnanarayanan. Some results on elegant graphs. *Indian Journal of Pure and Applied Mathematics*, 28(7), 1997.
- [36] R. Balakrishnan and R. Sampathkumar. Decompositions of regular graphs in $K_n^c v 2k_2$. *Discrete Mathematics*, 156:19–29, 1996.
- [37] R. Balakrishnan and R. Sampathkumar. A special labelling of graphs. In *the proceedings of the national seminar on Recent Developments in Mathematics*, 16-18, Dec. 1993, pages 123–126. Karnatak University, Dharwad., 1996.

- [38] R. Balakrishnan and A. Selvam. k -neighbourhood regular graphs. In *in the proceedings of the National Workshop on Graph Theory and its Applications*, pages 35–45. Manonmaniam Sundaranar University, Tirunelveli, February, 21–27., 1996.
- [39] R. Balakrishnan ,A. Selvam and V. Yegnanarayanan. On felicitous labelling of graphs. In *the proceedings of the National Workshop on Graph Theory and its Applications*, pages 47–61. Manonmaniam Sundaranar University, Tirunelveli, February 21–27, 1996.
- [40] R. Balakrishnan, Jean-Claude Bermond, Michael Jacobson and P. Paulraja. Combinatorics and number theory. In *Selected papers of the international conference on discrete mathematics and number theory*, volume 206, pages 47–61. Tiruchirappalli, India (Edited the Graph Theory Part), 1996.
- [41] R. Balakrishnan and R. Sampathkumar. Decomposition of complete graphs into isomorphic bipartite subgraphs, graph and combinatoric. *Springer-Verlag*, 10(1):19–25, 1994.
- [42] R. Balakrishnan and R. Sampathkumar. Existence and nonexistence of certain labellings in $K_n^c v 2k_2$. *Utilitas Mathematica*, 46:97–102, 1994.
- [43] R. Balakrishnan and R. Sampathkumar. Decomposition of complete tripartite graphs. *Congressus Numerantium*, 93:115–130, 1993.
- [44] R. Balakrishnan. Hadamard matrices. *Proceedings of the national seminar in Algebra*, pages 115–130, 1993.
- [45] R. Balakrishnan. Hadamard matrices. In *the proceedings of the national seminar on Recent Developments in Mathematics*, pages 163–168. Karnatak University, Dharwad, 16–18, Dec., 1993.
- [46] R. Balakrishnan and R. Sampathkumar. Almost balanced colouring of infinite sets of lattice points. *Proceedings of the symposium on graph theory and combinatorics, Kochi, Keral, India.*, pages 15–18, 1991.
- [47] R. Balakrishnan, P. Paulraja and A Rahim Basha. Packing half-complete graphs with trees. *Utilitas Math*, 31:131–148, 1987.
- [48] R. Balakrishnan and P. Paulraja. Chordal graphs and some of their derived graphs. *Congresses Numerantium*, 53:33–35, 1986.

- [49] R. Balakrishnan and P. Paulraja. Self-clique graphs and diameter of iterated clique graphs. *Utilitas Mathematica*, 29:263–268, 1986.
- [50] R. Balakrishnan and P. Paulraja. Line graphs of subdivision graphs. *J. Comb. Information and System Sciences*, 10:33–35, 1985.
- [51] R. Balakrishnan and P. Paulraja. Note on the existence of directed $(k+1)$ cycles in disconnected complete k -partite digraphs. *J. Graph Theory*, 8:423–426, 1984.
- [52] R. Balakrishnan and P. Paulraja. Existence of graphs with edge-connectivity 3 and 1-hamiltonian index 2. *J. Combin. Inform. Syst. Sci*, 8(2):30–32, 1983.
- [53] R. Balakrishnan and N. Sudharsanam. Cycle-vanishing edge-valuations of a graph. *Indian J. Pure Appl. Math.*, 12(3):313–316, 1982.
- [54] R. Balakrishnan and N. Sudharsanam. Extension of chvatal-lovasz theorem to locally-finite infinite digraphs. *Nat. Acad. Science Letters (India)*, 5:163–164, 1982.
- [55] R. Balakrishnan and N. Sudharsanam. Orthogonality of matroids. *J. Comb Information and System Sciences*, 7:197–202, 1982.
- [56] R. Balakrishnan and K. Ranganathan. Isomorphism of hypergraphs. *J. Comb Information and System Sciences*, 7:281–283, 1982.
- [57] R. Balakrishnan , K. Ranganathan and Sridharan N.. Existence of b - graphs with given groups. 1982.
- [58] R. Balakrishnan and K. Ranganathan. Isomorphism of hypergraphs. *J. Comb. Information and System Sciences*, 7:278–280, 1982.
- [59] R. Balakrishnan and K. Ranganathan. Graphs whose neighbourhood hypergraphs are balanced. In *Proceedings Seminar on Combinatorics and Applications*, pages 48–54. ndian Statistical Institute, Calcutta, 1982.
- [60] R. Balakrishnan and P. Paulraja. Solution to a problem of grünbaum and malkevitch. In *Proceedings Seminar on Combinatorics and Applications*,, pages 55–56. Indian Statistical Institute, Calcutta, 1982.
- [61] R. Balakrishnan and P. Paulraja. Counterexample to a conjecture of haggkvist and thomossen. In *Proceedings Seminar on Combinatorics and Applications*, pages 44–47. Indian Statistical Institute, Calcutta, 1982.

- [62] R. Balakrishnan and P. Paulraja. Graphs whose squares are chordal. *Indian J. Pure Appl. Math.*, 12(2):193–194, 1981.
- [63] R. Balakrishnan. Multiplier groups of difference sets. *Journal of Combinatorial Theory, Series A*, 10(2):133–139, 1971.
- [64] R. Balakrishnan. Characteristic polynomials of incidence matrices. *Journal of Combinatorial Theory*, 7(4):322–330, 1969.
- [65] R. Balakrishnan. On the algebra of magic matrices. *Math. Student*, 34:201–206, 1966.
- [66] R. Balakrishnan. On general rings with descendant chain conditions. *Math. Annalen*, 157:337–339, 1964.
- [67] R. Balakrishnan. On the structure of magic matrices. *Math. Student*, 30:193–198, 1962.
- [68] R. Balakrishnan. On the representation of linear complexes by conics in the plane. *Math. Student*, 31:41–45.
- [69] R. Balakrishnan. On the apollonian hyperbolas of a pencil of conics. *Math. Student*, 31.
- [70] R. Balakrishnan and P. Paulraja. Powers of chordal graphs. *J. Australian Math. Soc. Ser. A* 35(183), pages 211–217.
- [71] R. Balakrishnan and K. Ranganathan. Comformarl neighbourhood hypergraphs. *J. Comb. Information and Sysyem Sciences*.
- [72] R. Balakrishnan and P. Ramachandran. Not every 3-spread is hamiltonian. *Proceedings of the symposium on Optimization and design of Experiments and Graph Theory, IIT Bombay (186)*, pages 243–246.
- [73] R. Balakrishnan. Some decomposition problems of graphs. *The Proc. of the 56th Conference of the Indian Mathematical Society*.

Other Academic Activities

- [1] First to initiate the Compact Course program in Mathematics with a course of lectures delivered at the Department of Mathematics, Indian Institute of Science, Bangalore.

- [2] I am presently involved in organizing an Outreach Program in Mathematics at the Ramanujan Mathematical Society Building, National College Campus at Tiruchirappalli for the benefit of M.Sc. M.Phil. and Ph.D. scholars in mathematics. These scholars are being taught the foundations of mathematics and the methods to solve problems so that they would be better placed to meet the National Entrance Tests like NET, SLET etc. with greater confidence. It is a continuing program which is being conducted for 3 days in a month and for a longer period during summer vacation.

Professor R.B. Endowment Trust

- [1] A new Trust by the name Prof. R.B. Endowment Trust was founded in March 2023 with the ostensible purpose of promoting mathematics among the math students.
- [2] Besides awarding 'Best Student Awards' at five different institutions with which Prof. R.B. is/was connected, the Trust has recently embarked on Compact Course Programmes (in coordination with The India Mathematics Consortium (TIMC), Pune) through which lecture programmes are being conducted in 12 different regions of the country.
- [3] Each course runs from 3-5 days. In the first semester, each course will be in an Arts and Science institution, while in the second semester, it will be in an Engineering institution.
- [4] The website of the Trust: www.profrbendowment.org