



**RAMCO INSTITUTE OF TECHNOLOGY**

Approved by AICTE, New Delhi & Affiliated to Anna University

NAAC Accredited with 'A+' Grade & An ISO 9001: 2015 Certified Institution

NBA Accredited UG Programs: CSE, EEE, ECE and MECH

**Academic Year 2024 - 2025**

**Research and Development Activities**

### **I. Journal Publication**

1. F. Fanax Femy, G. Nallasivan, **K. Basarikodi**, C. Natarajan, A. Bhuvanesh, T. Swapna, published a paper entitled, “A system to classify chronic Obstructive Pulmonary Disease using Pre-trained-Densenet201 with TSA” in *Measurement Sensors*, Vol (33), 101234 on 01.06.2024 (SCOPUS).  
<https://doi.org/10.1016/j.measen.2024.101234>
2. **T. Manimaran**, **T. Selvaganesh**, **K. Subramanian**, **G. Selvaraj**, S. Karthikeyan, published a paper entitled, “Edge Irregularity Strength of Graphs on Mean Labeling” in Vol. 44 No. 3, *Library Progress International* (Scopus) on 31-07-2024. <https://doi.org/10.48165/bapas.2024.44.2.1>
3. Pandey Pirabaharan; **Rajendran Saravanakumar**; Lakshmanan Rajendran, published a paper entitled, “Analysis of transient current in rotating disc electrode” in *AIP Conf. Proc.*, 3160, 130001 (Aug 2024), (Scopus).  
<https://doi.org/10.1063/5.0224490>
4. **Subasree R**, **Basari Kodi K**, Saeid Jafari and G. Nordo, published a paper entitled, “A Note on Generalized Heptagonal Neutrosophic Sets” in *Neutrosophic Sets and Systems*, Pg 21-28, Volume 73, Sep 2024, (Scopus). DOI: [10.5281/zenodo.13989116](https://doi.org/10.5281/zenodo.13989116)
5. **Subasree R**, **Basari Kodi K**, Saeid Jafari, **Subramanian K**: “**Heptagonal Neutrosophic Quotient Mappings**”, *Neutrosophic Sets and Systems*, Vol. 73, 35-44, Sep 2024. (Scopus) DOI: [10.5281/zenodo.13989120](https://doi.org/10.5281/zenodo.13989120).
6. **R. Saravanakumar**, **K. Basari Kodi**, **T. Selvaganesh**, **K. Subramanian**, K. Saranya, Nazek Alessa, published a paper entitled, “Variational Iteration Method for Solving Reaction Diffusion Equation in Oscillatory Chemical Reactions” in *International Journal of Analysis and Applications*, Pg 1-12, 22(2024) (Scopus). DOI: <https://doi.org/10.28924/2291-8639-22-2024-156>
7. **Kannan**, **G.**, Jeyadurga, P., & Balamurali, S. (Oct 2024). Economic Design of Generalized Multiple Dependent State Sampling Plan Under Exponentiated Half Logistic Distribution. *American Journal of Mathematical and Management Sciences*, 43(2), 141–162. (Scopus).  
DOI: <https://doi.org/10.1080/01966324.2024.2412517>

8. **T. Manimaran, T. Selvaganesh, G. Selvaraj, K. Subramanian,** S. Karthikeyan, published a paper entitled, “Strength of vertex irregularity of some product of Graphs” in Vol. 28 No. 6s, *Advances in Nonlinear variational inequalities* (Scopus) on 16-01-2025. DOI: <https://doi.org/10.52783/anvi.v28.4342>.
9. **S. Muthukumar** and J. Ebenesar Anna Bagyam. (2025). A Steady-State Behaviour of a Queue with Optional Differentiated Working Vacations, Server Breakdown and Customer Balking. *Advances and Applications in Statistics*, Vol. 92, No.4, pp. 603 - 631. (WOS) on 25.02.2025. DOI: <https://doi.org/10.17654/0972361725025>.
10. X. F. Joseph, **G. Selvaraj**, M. A. Babu, A. S. Banu, A. Bhuvanesh and R. Keerthanadevi, "A Robust Evolutionary Gravity Neocognitron Neural Network Model for Construction Cash Flow Prediction in Complex Project Management," *2024 IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering (WIECON-ECE)*, Chennai, India, 2024, pp. 140-144, doi: 10.1109/WIECON-ECE64149.2024.10915020 on 13.03.2025.

## II. Conference Presentation

1. **Dr. T. Manimaran and Dr. T. Selvaganesh** presented a paper entitled, “2–Distant Irregularity Strength of Paths and Cycles”, in 2nd International Conference on Evolution in Pure and Applied Mathematics (ICEPAM - 2024) organized by Akal University Talwandi Sabo, Punjab in Collaboration with Eternal University, Himachal Pradesh on 20-22 November 2024.
2. **Dr. G. Selvaraj** presented a paper entitled “ A Robust Evolutionary Gravity Neocognitron Neural Network Model for Construction Cash Flow Prediction in Complex Project Management” in the 10th IEEE WIECON ECE 2024 at College of Engineering, Guindy, Anna University, Chennai, India organized by College of Guindy, Anna University, Chennai held from 6 - 7 December 2024.
3. **Dr. N Nagamani**, presented a paper entitled “Properties of Intuitionistic L-Fuzzy P-ideals On d-Algebra” in the International Conference on Applied Mathematical Sciences for Emerging Technologies 2024 (ICAMSET-2024) organized by Department of Mathematics, , School of Engineering and Technology, Dhanalakshmi Srinivasan University, Perambalur, Tamil Nadu, India; jointly organized SIIRT University, Turkey; held from 13th to 14th December 2024.
4. **Dr. R. Saravanakumar** presented a paper entitled “ Analytical Solution of Oxygen Diffusion in a Spherical Cell with Michaelis-Menten Kinetics: Homotopy Perturbation Method” in the International Conference on Mathematical Challenges and Novel Applications (ICMCNA 2K25) at Department of Mathematics, AMET University, Chennai, India held on 21 April 2025.

5. **Dr. R. Subasree, Dr. K. Basari Kodi**, Saeid Jafari, **Mr. K. Subramanian**, presented a paper entitled “ Neutrosophic Sober Open sets; An Overview” in the First International Society of Fuzzy Sets Extensions and Applications conference (ISFSEA 2025) held from 5-6 May 2025.

### **III. Book Publication**

1. Dr. K. Basari Kodi, Dr. L. Sathikala, Dr. T. Manimaran, Mr. K. Subramanian, Dr. R. Subasree, Mr. T. Selvaganesh, published a book on *Discrete Mathematics*, Second Edition in Vishnu Prints Media, ISBN: 978-81-19432-48-6.
2. Dr. K. Basari Kodi, Dr. T. Manimaran, Mr. K. Subramanian, Dr. R. Subasree, Dr. G. Selvaraj, published a book on “*Matrices and Calculus*”, Second Edition in Pearson publishers, ISBN: .

### **IV. Book Chapter Publication**

1. Dr. R. Venugopal, Dr. S. Priyadharsini, E. Kungumaraj, **Dr. R. Subasree**, published a book chapter on the topic, "Investigation of Simple Telegraph equations via Analytical Methods" in the book "**Mathematics Beyond Frontiers: Recent Developments and Interdisciplinary Connections**" (ISBN: **978-81-984818-3-2**) **pg 56-66, published by STANZALEAF PUBLICATION on 16.04.2025.**

The book's DOI is (<https://doi.org/10.5281/zenodo.15226958>)

### **V. Project Submission Details**

1. **Dr. R. Subasree submitted** the UBA project proposal “Developing Women Entrepreneurs to produce Handmade goods out of used clothing” under SEG - Rural Craft and Artisans Development and Rural Industrialization and Entrepreneurship Development on 15.10.2024 for the grant of Rs. 50,000.
2. **Dr. G. Kannan**, submitted the proposal in the title “Determination of certain special purpose sampling plans under half-normal distribution for type II censoring” under the scheme of Prime Minister Early Career Research Grant on 19.11.2024 for the grant of Rs. 27,51,420.

3. **Dr. G. Kannan**, submitted the NBHM RP Grant proposal in the title “Designing of Certain special purpose sampling plans under Birn Baum-Saunders distribution for Type - I censoring” on 30.12.2024 for Rs. 18,41,700.
4. **Dr. K. Basari Kodi**, submitted the NBHM RP Grant proposal in the title “A Neutrosophic Framework for Decision Making Under Uncertainty” on 31.12.2024 for Rs. 17,75,700.

#### **VI. Resource Person Details**

1. **Dr. K. Basari Kodi** acted as a Jury for the event, Math Rangoli Competition for UG students of Department of Mathematics organized by Ayya Nadar Janaki Ammal College, Sivakasi on 21.12.2024.
2. **Dr. R. Subasree** acted as a Jury for the event, Math Modelling Competition for UG students organized by Ayya Nadar Janaki Ammal College, Sivakasi on 21.12.2024.

#### **VII. Patent Details**

<b>S.No</b>	<b>Name of the Faculty Member(s)</b>	<b>Title of the Patent</b>	<b>Application Number and Published on</b>
1.	T. Manimaran T. Selvaganesh	AI-Optimized Management of Smart Grids and Development of Advanced Nanotechnology-Enhanced Energy Storage Technologies	202541001915 A 24.01.2025
2.	T. Selvaganesh	Wearable Nanotechnology-Enabled Biosensor for Real-Time Health Monitoring and Analysis	202541001912, 24/01/2025
3.	G. Selvaraj	IoT devices leveraging 5G technology to provide real-time health data monitoring	202521004984 A, 14/02/2025
4.	G. Kannan, K. Subramanian, R. Saravanakumar	Combining blockchain and AI technologies for secure and transparent supply chain management solutions	202521001908 13/03/2025
5.	N. Nagamani S. Muthukumar K. Basari Kodi	Iot devices optimizing energy use and management in smart home environments.	202541001914 A 24/01/2025