

**SATYA BIR SINGH**  
**PROFESSOR**

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Google Scholar:

<https://scholar.google.com/citations?user=vr6tXbIAAAAJ&hl=en>

### **Educational**

**2012**      **M.B.A.**, Punjabi University, Patiala  
Specialization: Marketing Management

**2000**      **Ph.D.**, University of Roorkee, Roorkee (Now I.I.T. Roorkee)  
Thesis title: Flow Behaviour and Creep Deformation in Engineering Components of Composites

**1993**      **PGDCA**, Gurukul Kangri Vishwavidyalaya, Harwar  
Project title: Applications of Tree Structure

**1992**      **M.Phil.** (Applied Mathematics), University of Roorkee, Roorkee,  
Dissertation: Methods of Solving Fractional Programming Problems

**1990**      **M.Sc.** in Mathematics, Aligarh Muslim University, Aligarh (Gold Medal for standing First position in University)

### **Scholarship, Awards and Medals:**

- ◆ **National Merit Scholarship** since 1983-84 to 1987-88.
- ◆ **Departmental Merit Scholarship** during Master's Course.
- ◆ **Sir Ziauddin Gold Medal** for ranking first in M.Sc. (Mathematics) Examination at Aligarh Muslim University, Aligarh.
- ◆ **Khosla Gold Medal** for outstanding research for the session 2001-2002 from Indian Institute of Technology, Roorkee
- ◆ **Khosla Commendation Certificate** on a research paper for the session 2001-2002 from Indian Institute of Technology, Roorkee

### **Research/Teaching Experience:**

|                     |  |
|---------------------|--|
| June 2011-Till date | Professor, Dept. of Mathematics, Punjabi University, Patiala           |
| Dec 2009-June 2011  | Associate Professor, Dept. of Mathematics, Punjabi University, Patiala |
| Dec 2006-Dec 2009   | Reader, Dept. of Mathematics, Punjabi University, Patiala              |
| Dec 2004-Dec 2006   | Lecturer (SS), Dept. of Mathematics, Punjabi University, Patiala       |
| Dec 2001-Dec 2004   | Lecturer (SS), SMCA, T.I.E.T., Patiala                                 |
| Dec 1997-Dec 2001   | Lecturer, SMCA, T.I.E.T Patiala  |
| Aug 1997-Dec 1997   | Fellow A, Defence Research & Development Laboratory Project            |
| Aug 1994- July 1997 | Senior Research fellow in CSIR sponsored project at U.O.R. Roorkee     |
| Aug 1993- Aug 1994  | Research Assistant in MHRD Project at U.O.R. Roorkee                   |

### **M.Phil. /Ph.D. Thesis Supervised:**

#### **Ph.D. Supervised**

1. V.K. Gupta, Professor in Mechanical Engineering Department, U.C.O.E, Punjabi University, Patiala.  
**Topic:** Modeling of Creep Behaviour of Rotating Discs of Composite Materials.  
**Status: Awarded.**
2. Sanjeev Manchanda, Internationally renowned software developer  
**Topic:** Knowledge Discovery in Databases Processing using Improved Data Mining Techniques.  
**Status: Awarded**
3. Jasleen Kaur, Assistant Professor, Department of Mathematics, Punjabi University, Patiala.  
**Topic:** Geometry of Indefinite Manifolds and Allied Structures  
**Status: Awarded**
4. Minto Rattan, Assistant Professor, UIET, Punjab University, Chandigarh.  
**Topic:** Mathematical Modelling of Creep in Rotating Discs of Composites and FGMs  
**Status: Awarded**
5. Neeraj Chamoli, Assistant Professor, Department of Mathematics, D.A.V. College Chandigarh  
**Topic:** Mathematical Modeling of Creep in Engineering Components of Composites  
**Status: Awarded**
6. Ashok Pal, Professor, Chanadigarh University, Gharuan, Mohali  
**Topic:** Decision Making in Crisp and Fuzzy Environments using Particle Swarm Optimization  
**Status: Awarded**
7. Mukhdeep Singh, Assistant Professor, Dept. of Mathematics, Punjabi University, Patiala  
**Topic:** Congestion Control in Wireless Sensor Networks  
**Status: Awarded**
8. Nishi Gupta, Associate Professor, Dept. of Mathematics, Chandigarh University, Gharuan (Mohali)  
**Topic:** Modeling of Creep in Composite Structures subjected to Thermal Gradients  
**Status: Awarded**

9. Vandana Gupta, Assistant Professor, Dashmesh Khalsa College, Zirakpur (Panjab).  
**Topic:** Modeling of Creep in a Composite Rotating Disc of Variable Thickness  
**Status:** Awarded
  
10. Narinder Singh, Senior Assistant, DIS, Punjabi University, Patiala  
**Topic:** Development of New Algorithms in Particle Swarm Optimisation  
**Status:** Awarded
  
11. Vibha Saihjpal, Assistant Professor, Univ College, Chunni Kalan, Distt.-Fatehgarh Sahib  
**Topic:** Development of Improved Algorithms for Project Scheduling Problems  
**Status:** Awarded
12. Jatinder Kaur, Assistant Professor, Dept. of Mathematics, Chandigarh University, Gharuan (Mohali)  
**Topic:** Elastic Plastic and Creep Transitional Stresses Problems in the Disc  
**Status:** Awarded
  
13. Madan Lal Ghai (Retd) P.M.N. College, Rajpura, Patiala  
**Topic:** Indian Contributions in Development of Mathematics  
**Status:** Awarded
  
14. Sharandeep Singh, Research Scholar, Regina University, Regina (Canada)  
**Topic:** Design of New Optimization Algorithms Based on Particle Swarm Optimisation  
**Status:** Awarded
  
15. Shivdev Shahi, Assistant Professot, Dept. of Mathematics, Chandigarh University, Gharuan (Mohali)  
**Topic:** Modeling the Deformation Behavior of Some Structural Components  
**Status:** Awarded
  
16. Temesgen Alem Godana  
**Topic:** Mechanics of Elastoplastic and Creep Deformation of Some Structural Components  
**Status:** Awarded
  
17. Pushwinder Kumar, JRF, Dept. Of Mathematics, Punjabi University, Patiala  
**Topic:** Mathematical Modeling of Flow Behaviour in Engineering Components of Composite Materials  
**Status:** Registered
  
18. Savita Bansal  
**Topic:** Modeling of Creep Behaviour in Engineering Components Composed of Composites and Functionally Gradient Materials  
**Status:** Registered
  
19. Meetu Jain  
**Topic:** Fusion of Nature Inspired Techniques for Global Optimization  
**Status:** Registered
  
20. Yogendra Kushwaha  
**Topic:** Particle Swarm Optimisation: Design and Applications  
**Status:** Registered

21. Mandeep Kaur  
Topic: Yet to be decided  
Status: Enrolled

#### **M.Phil. Supervised**

1. Ms. Nishi Gupta  
Topic: Some Problems of Composite Laminates  
Status: Awarded
2. Ms. Tanveer Kaur  
Topic: Mathematical Modeling with Differential equations  
Status: Awarded
3. Ms. Ashu  
Topic: On Some Applications of Difference Equations  
Status: Awarded
4. Ms. Deva  
Topic: Convex Sets and its Applications  
Status: Awarded
5. Ms. Sunita  
Topic: Numerical Solution of Partial Differential Equations  
Status: Awarded
6. Mr. Vikas Sharma  
Topic: Nonlinear Unconstrained Optimization Techniques  
Status: Awarded
7. Mr. Narinder Singh  
Topic: Methods for Solving Nonlinear Constrained Optimization Problems  
Status: Awarded
8. Mr. Ramesh Chander  
Topic: Some Algorithms for the Solution of Connector Problems  
Status: Awarded

#### **Invited Lectures Delivered:**

1. **Delivered an Invited Talk on “Recent Trends in Nature Inspired Techniques and their Real Life Applications”** at Pasumpon Muthuramlinga Thever College, Usilampatti, Madurai District, Tamilnadu from Oct 7-8, 2021.
2. **Delivered an Invited Talk on “On new Dimensions in Higher Education”** at K.J. Somaiya College of Arts, Commerce and Science on March 29, 2019.

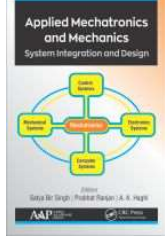



- 3. Delivered an Invited Talk on “Particle swarm optimization: Theory and Applications” at Loknete Vyankatrao Hiray Arts, Science and Commerce College on March 27, 2019.**
- 4. Delivered an Invited Talk on “Nature Inspired Techniques and Its Applications” in International Conference on Recent Advances in Theoretical and Computational Partial Differential Equations with Applications held at UIET, Panjab University, Chandigarh from Dec 5-9, 2017.**
- 5. Delivered an Invited Talk on “Recent Trends in Optimization Techniques” in National Conference on Innovative Trends in Mathematical Sciences held at Department of Mathematics, M.M. University, Mullana, Ambala on March 30, 2015.**
- 6. Delivered an Invited Talk on “Optimization Techniques: Algorithms and Applications” in International Conference on Modeling, Simulation and Optimizing Techniques held at D.A.V. College, Jalandhar from Feb 12-14, 2015.**
- 7. Delivered an Invited Talk on “Particle Swarm Optimization Techniques” in National Conference on Advanced Mathematics and Its Applications held at D.A.V. College, Bhatinda from Feb. 25-26, 2011.**
- 8. Delivered an Invited Talk on “An Overview of Particle Swarm Optimization” in National Conference on Advances in Mathematics and their Applications held at Shri Varshney College Aligarh from Feb. 12-13, 2011.**
- 9. Delivered an Invited Talk on “Interpolation and Approximation” in a Short Term Training Program held at Mechanical Engineering Department of T.I.E.T Patiala from July 5-16, 2004**
- 10. Delivered an Invited Talk on “Numerical Solutions of Differential Equations” Short Term Training Program held at Mechanical Engineering Department of T.I.E.T Patiala from July 5-16, 2004**
- 11. Delivered an Invited Talk on “Linear System of Equations” in a Short Term Training Program held at Mechanical Engineering Department of T.I.E.T Patiala from July 5-16, 2004**
- 12. Delivered an Invited Talk on “Error Analysis” in a Short Term Training Program held at Mechanical Engineering Department of T.I.E.T Patiala from July 5-16, 2004**
- 13. Delivered an Invited Talk on “Solution of Nonlinear Equations” in a Short Term Training Program held at Mechanical Engineering Department of T.I.E.T Patiala from July 5-16, 2004**

14. **Delivered an Invited Talk on “Numerical Methods for Finding Eigen Values” in a Short Term Training Program held at Mechanical Engineering Department of T.I.E.T Patiala from July 5-16, 2004.**

#### **Session Chaired In National International Conferences**

1. **International Conference on Integrated Interdisciplinary Innovations in Engineering (ICIIE 2020)** held at UIET, Panjab University Chandigarh from Aug. 28-30, 2020.
2. **International Conference on Recent Advances in Theoretical and Computational Partial Differential Equations with Applications** held at UIET, Panjab University, Chandigarh from Dec. 5-9, 2017.
3. **National Conference on Innovative Trends in Mathematical Sciences** held at Department of Mathematics, M.M. University, Mullana, Ambala on March 30, 2015.
4. **International Conference on Modeling, Simulation and Optimizing Techniques** held at D.A.V. College, Jalandhar from Feb. 12-14, 2015
5. **Conference on Exploring Basic and Applied Sciences for Next Generation Frontiers (EBAS 2014)** held at Lovely Professional University, Phagwara (Panjab) from Nov. 14-15, 2014.
6. **National Conference on Green Nanotechnology** held at Department of Applied Sciences {UIE), Chandigarh University, Gharuan, Mohali (Panjab) from June 5-6, 2014.
7. **The 8<sup>th</sup> International Conference on Fixed Point Theory and Its Applications** held at Department of Mathematics, Chiang Mai University, Chiang Mai (Thailand) July 16-22, 2007.

**Book Edited/written:**

|  |   |
|--|---|
| <p>1. <b>Nanomechanics and Micromechanics: Generalized Models and Non classical Engineering Approaches;</b> CRC Press, Taylor Francis Group, (Hard ISBN: 9781771888332, E-Book ISBN: 9780429322440).</p> |    |
| <p>2. <b>Materials Physics and Chemistry: Applied Mathematics and Chemo-Mechanical Analysis,</b> CRC Press, Taylor Francis Group (Hard ISBN: 9781771888677, E-Book ISBN: 9780367816094).</p>             |    |
| <p>3. <b>Applied Mechatronics and Mechanics: System Integration and Design,</b> CRC Press, Taylor Francis Group (Hard ISBN: 9781771888899, E-Book ISBN: 9781003019060).</p>                              |   |
| <p>4. <b>Mechatronics System Design and Solid Materials: Methods and Practices,</b> CRC Press, Taylor Francis Group (Hard ISBN: 9781771889155).</p>  |  |
| <p>5. <b>Mathematics Applied to Engineering in Action Advanced Theories, Methods, and Models,</b> CRC Press, Taylor Francis Group (Hard ISBN: 9781771889223, E-Book ISBN: 9781003055174).</p>            |  |
| <p>6. <b>Materials Modeling for Macro to Micro/Nano Scale Systems,</b> CRC Press, Taylor Francis Group (ISBN No.: 9781774630198).</p>  |  |



### Reviewing Work:

Reviewer for several Journals:

1. The Journal of Strain Analysis for Engineering Design, Sage Publisher
2. International Journal of Process Management and Benchmarking, Inderscience
3. Advances in Operator Theory
4. journal Differential Equations and Dynamical Systems, Elsevier
5. International Journal of Operational Research (IJOR)
6. Int. J. of Computer Aided Engineering and Technology
7. Mechanics of Time-Dependent Materials
8. International Journal of Thermal Sciences
9. Journal of Applied Research and Technology
10. Communications Faculty of Sciences University of Ankara Series A1 Mathematics and Statistics
11. Journal of the Brazilian Society of Mechanical Sciences and Engineering

### Research/Sponsored Projects:

1. UGC minor project entitled “Anisotropy and Creep in a Rotating Disc made of Al-SiC Composite” (Completed).
2. AICTE major research project “Mathematical Modeling of Multiaxial Creep in Functionally Gradient Materials (FGM)” under TAPTEC scheme (No. 8019/RDII/TAPTEC/MATERIAL (265)/2000--01/977 dated 25.01.2001, Amount Rs. 2.5 Lacs)(Completed).



3. A project under **RPS scheme** entitled “Modeling of Creep in Functionally Graded Composite Rotating Disc” was sanctioned by AICTE in 2004 but returned back to AICTE as it **could not be transferred** from T.I.E.T., Patiala to Punjabi University, Patiala (**No.8022/RID/NPROJ/RPS-63/2003-04**).
4. **Major Research Project** on “Mathematical Modeling of Multiaxial Creep in Composites and Functionally Gradient Materials” from UGC, New Delhi (**No. 36-199/2008(SR) dated 26.03.2009, Amount: Rs 7,14,278/- (Completed)**).
5. **Major Research Project** on “Elastic Plastic and Creep Analysis Problems in the Disc” from UGC, New Delhi (**No. 43-438/2014(SR) dated 24.9.2015, Amount: Rs 14,50,000/- (Completed)**).

**Countries visited:**

| <b>Year</b> | <b>Country</b> |
|-------------|----------------|
| 2001        | Spain          |
| 2004        | Malaysia       |
| 2007        | Thailand       |

### Conference/Workshop/Refresher Courses Organized:

- 1 National Conference on Mathematical & Computer Applications in Science & Engineering** held at Thapar Institute of Engineering & Technology, Patiala-147 001 (Punjab) from Jan. 27-28, 2003.
- 2 U. G. C. Refresher Course on Mathematics and Statistics** held at Academic Staff College, Punjabi University, Patiala from May 03-22, 2010.
- 3 1<sup>st</sup> Punjabi University Science Congress & National Science Day Celebrations** held at Punjabi University, Patiala on February 28, 2011 (Member of Organizing Committee).
- 4 U. G. C. Refresher Course on Mathematics and Statistics** held at Academic Staff College, Punjabi University, Patiala from Nov 27-Dec 17, 2012.
- 5 National Seminar on Mathematics and Its Applications** held at Department of Mathematics, Punjabi University, Patiala on Dec. 20, 2012.

### Fields of Interest:

- ◆ Mechanics of Composites
- ◆ Numerical Analysis
- ◆ Optimization Techniques

### Membership of Learned Bodies:

- ◆ Life Member of Indian Mathematical Society (LM No.-1044)
- ◆ Life Member of Indian Society of Theoretical and Applied Mechanics (LM No.-5312)
- ◆ Life Member of Indian Society for Industrial and Applied Mathematics (LM No.-04)
- ◆ Life Member of Indian Society for Construction Materials and Structures (LM No.-528)
- ◆ Life Member of Indian Society for Continuing Education (LM No.-255)

### Courses /Workshops/Conferences Attended:

- 1. Specialist Course on Finite Element Methods in Non-Linear Mechanics**, held at Department of Civil Engineering, University of Roorkee, Roorkee from January 4-16, 1993.

2. **37th Congress of Indian Society of Theoretical and Applied Mechanics** held at G.B. Pant University of Agriculture & Technology Pantnagar from January 14-17, 1993.
3. **First Annual Conference of ISIAM (Indian Society of Industrial and Applied Mathematics)** held at Department of Mathematics, University of Roorkee, Roorkee from February 4-7, 1993
4. **National Seminar on Fibre Reinforced Cementitious Products** jointly organised by ICI-UPLC Roorkee and K.N.I.T. Sultanpur held at K.N.I.T. Sultanpur from January 28-29, 1994.
5. **Short term Course on Fundamental of Finite Element Methods** held at Continuing Education Department, University of Roorkee, Roorkee from 30.8.94 to 09.09.94.
6. **Conference on Mathematics and its Application in Engineering Industry** held in the Department of Mathematics, University of Roorkee, Roorkee from Dec. 16-18, 1996.
7. **Indo-US workshop on Problems in Elastic Vibrations, Smart Structures and their Solution Technologies (IUWEST)** held in the Department of Mathematics, University of Roorkee, Roorkee from Jan. 2-4, 2001.
8. **International Conference on Mathematical Modeling** held in the Department of Mathematics, University of Roorkee, Roorkee from Jan. 29-31, 2001.
9. **Conference on Emerging Trends in Mathematics** held at Department of Mathematics, Aligarh Muslim University, Aligarh from March 24-26, 2001.
10. **National Conference on Engineering Mathematics** held at Department of Mathematics, Institute of Engineering and Technology, Bhattal (Ropar) on April 7, 2001.
11. **First TIET Foresight Symposium on R & D Challenges Before Indian Industry-Time to Look at Our Universities** held at Thapar Institute of Engineering and Technology, Patiala from May 19-20, 2001.
12. **Short Term Course on Techniques for Improving Classroom Teaching** held at Q.I.P. Center, University of Roorkee, Roorkee-247 667 from June 13-27, 2001.
13. **International Conference on Advances in Materials and Processing Technologies** held at Universidad Carlos III de Madrid, Leganes, Madrid (Spain) from Sept. 18-21, 2001.
14. **Fifteenth National Convention of Metallurgical and Materials Engineers and National Seminar on Advances in Materials & Processing** held at Department of Metallurgical and Materials Engineering, Indian Institute of Technology, Roorkee, Nov. 9-10, 2001.

15. **National Conference on Mathematical and Statistical Techniques** held at School of Basic & Applied Sciences, Thapar Institute of Engineering and Technology, Patiala-147 004 (Punjab) from Dec. 6-8, 2001.
16. **5<sup>th</sup> Punjab Science Congress on Science and Technology in New Millennium** held at Thapar Institute of Engineering & Technology, Patiala-147 001 (Punjab) from Feb. 7-9, 2002.
17. **Short Term Course on Effective Communication and Presentation Skills** held at Thapar Institute of Engineering & Technology, Patiala-147 001 (Punjab) from June 6-8, 2002.
18. **National Conference on Mathematical & Computer Applications in Science & Engineering** held at Thapar Institute of Engineering & Technology, Patiala-147 001 (Punjab) from Jan. 27-28, 2003.
19. **UGC Sponsored Refresher Course on Computational Mathematics** held at Thapar Institute of Engineering & Technology, Patiala-147 001 (Punjab) from Dec 12-31, 2005.
20. **UGC Sponsored Orientation Course** held at Aligarh Muslim University, Aligarh-202002 (U.P.) from May 17-June 13, 2006.
21. **UGC Refresher Course on Mathematics** held at Jamia Millia Islamia, New Delhi from Nov 7-27, 2006.
22. **International Seminar on Cyber Terrosim Concept and Remedies** held at Punjabi university, Patiala on February 22-23, 2007.
23. **The 8<sup>th</sup> International Conference on Fixed Point Theory and Its Applications** held at Department of Mathematics, Chiang Mai University, Chiang Mai (Thailand) July 16-22, 2007.
24. **National Conference on Modern Devolpment in Engineering & Science** held at Ambala College of Engineering & Applied Research from February 27-28, 2009.
25. **National Conference on Advances in Mathematics and their Applications** held at Shri Varshney College Aligarh from Feb. 12-13, 2011.
26. **National Conference on Impact of Management and Technological Advancements in Technical Education and Industrial Sector** held at J.S.S. Institute of Engineering and Technology, Kauli, Patiala from Feb. 18-19, 2011.
27. **National Conference on Advanced Mathematics and Its Applications** held at D.A.V. College, Bhatinda fom Feb. 25-26, 2011.
28. **International Conference on Mechanical and Aerospace Engineering** held at SRM University, NCR Campus, Modinagar from March 21-23, 2011.

29. **International Conference on Emerging Research in Computing, Information Communication and Applications (ERCICA-2013)** held at Nitte Minakshi Institute of Technology, Bangalore from July 31-Aug 2, 2013.
30. **National Conference on Innovative Trends in Mathematical Sciences** held at Department of Mathematics, M.M. University, Mullana, Ambala on March 30, 2015.
31. **International Conference on Modeling, Simulation and Optimizing Techniques** held at D.A.V. College, Jalandhar from Feb 12-14, 2015.
32. **International Conference on Advances in Mathematical Sciences - 2015** held at GSSDGS Khalsa College, Patiala, Punjab from March 19 to March 21, 2015.
33. **International Conference on Recent Advances in Theoretical and Computational Partial Differential Equations with Applications** held at UIET, Panjab University, Chandigarh from Dec 5-9, 2017.

#### **Research Experience:**

1. Worked on Fractional Programming Problems in **M.Phil. Dissertation** from January 1991 to March 1992.
2. Worked in MHRD Project entitled "**Analytical & Experimental Studies on static and dynamic Problems of Composite Materials**" as a Research Assistant w.e.f. 01.08.93 to 15.08.94.
3. Worked as Senior Research Fellow in a CSIR Project entitled "**Modeling of Mechanical Behaviour of Ferrocement Composite for Low Cost Structures**" since 16.08.94 to 31.7.97.
4. Worked as Fellow 'A' in a DRDL Project entitled "**Analysis of Polar Back Scattering from Defects in Laminated Composites**" since 01.08.97 to 23.12.97.

#### **Teaching Experience:**

- Working as Professor in Department of Mathematics, Punjabi University, Patiala-147 002 since June 17<sup>th</sup>, 2011 till date.
- Worked as Associate Professor in Department of Mathematics, Punjabi University, Patiala-147 002 since Dec. 2009 to June, 2011.
- Worked as Reader in Department of Mathematics, Punjabi University, Patiala-147 002 since Dec. 24. 2006 to Dec, 2009.

- Worked as Lecturer (Senior Scale) in Department of Mathematics, Punjabi University, Patiala-147 002 since Dec. 03, 2004 to Dec. 23, 2006.
- Worked as Lecturer (Senior Scale) in School of Mathematics & Computer Applications, Thapar Institute of Engg. & Tech., Patiala-147 004 since Dec. 24, 2001 to Dec 03, 2004.
- Worked as Lecturer in School of Basic and Applied Sciences, Thapar Institute of Engg. & Tech., Patiala-147 004 from Dec. 24, 1997 to Dec. 23, 2001.
- About four years Experience of taking B.E., M.E. and M.Phil. Classes as leave arrangement at University of Roorkee, Roorkee-247 667.

#### Co Curricular Activities:

- ◆ **Member, Board of Studies (Post Graduate)** Department of Mathematics, Punjabi University, Patiala for the session 2007-08 till date.
- ◆ **Chairman, Board of Studies (Post Graduate and Ph.D. Course Committee)** Department of Mathematics, Punjabi University, Patiala from Dec. 2009-2012.
- ◆ **Chairman, Board of Studies (Under Graduate)** Department of Mathematics, Punjabi University, Patiala from Dec. 2009-Dec 2012.
- ◆ **Chairman, Academic Council of Department,** Department of Mathematics, Punjabi University, Patiala from Dec. 2009-2012.
- ◆ **Member, Board of Studies (Under Graduate and Post Graduate)** Department of Mathematics, Punjabi University, Patiala for the session 2007-08 to 2008-09.
- ◆ **Member, Administrative Council of Department,** Department of Mathematics, Punjabi University, Patiala for the session 2006-07 till date.
- ◆ **Member, Board of Studies (Post Graduate)** Department of Mathematics, Punjabi University, Patiala for the session 2006-07.
- ◆ **In charge, Library Affairs,** School of Mathematics and Computer Applications, TIET, Patiala since Jan 2004 till date.
- ◆ **Coordinator, ISO-9000** for School of Mathematics and Computer Applications since Jan.-Dec., 2003.
- ◆ **Joint Secretary** of Aligarh Mathematical Society for the session 1988-89.
- ◆ **Senate Councilor** in RUSA (Roorkee University Students Association) for the session 1990-91.

**Referees:**

Professor Subrata Ray  
Department of Metallurgical & Materials Engg.  
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Professor M.A. Quadri  
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Professor N.S. Bhatnagar  
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## Details of Published Research Work:

### (a) International Journals/Proceedings

1. **AG Temesgen, SB Singh, T Pankaj , Pushwinder Kumar (2023)** “ Modelling the Elastoplastic Deformation of an Internally Pressurized Transversely Isotropic Shell Under a Temperature Gradient” , Turkish Journal of Computer and Mathematics Education, 14, 01(2023), 207-221 (ISSN 1309-4653) (Scopus Indexed Journal)
2. **AG Temesgen, SB Singh, T Pankaj (2022)** “ Modeling of Creep Deformation in an Internally Pressurized Transversely Isotropic Spherical Shell Subjected to a Thermal Gradient” , Mechanics of Solids, 57, 4, 937-948 (ISSN 0025-6544) **SCIE**
3. **Savita Bansal and SB Singh (2022)**, “Creep Analysis of Thick Walled Cylinder under Constant Internal Pressure”, accepted for publication in Materials Science Forum (Scopus Indexed Journal)
4. **Shivdev Shahi, S.B. Singh, Pushwinder Kumar (2021)** “Mathematical Modeling of Elastic Plastic Transitional Stresses in CNT-GS based Hybrid Nanocomposite Thin Walled Spherical Pressure Vessels.” IOP Conf. Series: Materials Science and Engineering 1033 (2021) 012058. (Scopus Indexed Journal)
5. **AG Temesgen, SB Singh, T Pankaj (2020)** “Creep Transition Analysis in Functionally Graded thick-walled rotating transversely isotropic cylinder under a radial temperature gradient and uniform pressure”, Structural integrity and life, 20, 3(2020), 285-296. (ISSN 14513749). **ESCI**
6. **AG Temesgen, SB Singh, T Pankaj (2020)** "Modeling of creep deformation of a transversely isotropic rotating disc with a shaft having variable density and subjected to a thermal gradient", Thermal Science and Engineering Progress, 20, 100745. **SCIE**
7. **AG Temesgen, SB Singh, T Pankaj (2020)** "Elastoplastic analysis in functionally graded thick-walled rotating transversely isotropic cylinder under a radial temperature gradient and uniform pressure", Mathematics and Mechanics of Solids, 1081286520934041.
8. **AG Temesgen, SB Singh, T Pankaj (2020)** "Modelling of Elastoplastic Deformation of Transversely Isotropic Rotating Disc of Variable Density with Shaft under a Radial Temperature Gradient", Structural Integrity and Life 20 (2), 113-121. **ESCI**



9. **Harjot Kaur, Nishi Gupta, S.B. Singh (2020)**, “Analyse the Affect of particle size on the rotating disk”, *Advances and applications in mathematical sciences*. 19(6), 551-561. (ISSN 0974-6803)
10. **Singh, N. and Singh, S.B. (2020)**, “Covid-19 Risk prediction through nature inspired algorithm” , *World journal of engineering*. Published online. (ISSN 1708-5284)  
Doi: <https://doi.org/10.1108/WJE-08-2020-0358>. **ESCI**
11. **Singh, N. Singh, S.B. and Essam H. Houssein (2020)** , “ Hybridizing salp swarm algorithm with particle swarm optimization functions” *Evolutionary intelligence*, Springer. Published online. (ISSN 18645917) doi: <https://doi.org/10.1007/s12065-020-00486-6>. **ESCI**
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