

BIODATA OF PROF. PREM VRAT

PROFESSOR OF EMINENCE, MANAGEMENT DEVELOPMENT INSTITUTE, GURGAON
FOUNDER DIRECTOR, IIT ROORKEE & FORMER VICE CHANCELLOR,
U.P. TECHNICAL UNIVERSITY, LUCKNOW

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*Former Vice Chancellor, UPTU,
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Roorkee
Director-in-charge, IIT Delhi
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Born. : 01.06.1944

Prof. Prem Vrat, Professor of Eminence, Management Development Institute, Gurgaon and Founder-Director (December 2001-May 2006), IIT Roorkee and former Vice Chancellor, U.P. Technical University, Lucknow, Director-in-charge, IIT Delhi (July-Dec. 2000). He has had an outstanding academic record and is a product of IIT system throughout. He obtained B.Tech. (Hons.) in Mechanical Engineering in 1966 from IIT Kharagpur and M.Tech. (Industrial Engineering & Operations Research) from the same institute in 1968. He received Ph.D. Degree of IIT Delhi in 1974 in Industrial Engineering & Operations Research. During 1975-76 he was Honorary Research Fellow at the Department of Engineering Production, University of Birmingham (U.K.). He was Professor and Chairman, Div. of Ind. Engg. & Management, at Asian Institute of Technology Bangkok during 1989-91. He was International Visiting Fellow at University of Western Sydney, Australia in June-July, 2003. He has visited 21 countries. He is also an Honorary Visiting Professor at IIT Delhi. IIT Bombay has appointed him as Distinguished Guest Professor.

Prof. Prem Vrat has more than 41 years of experience in teaching, research, consultancy and management development at Mechanical Engineering Department at IIT Delhi, AIT Bangkok and IIT Roorkee and taught doctoral program students at IIM Lucknow for 2 years. He has taught a wide spectrum of courses related to Industrial Engineering & Management Science at IIT Delhi. During 1985-86, he was a visiting faculty at the Industrial Engineering & Management Division at prestigious Asian Institute of Technology, Bangkok. He has excellent communication skills and is highly respected by his students.

Prof. Vrat has outstanding research credentials. He has guided 36 Ph.D. theses, 117 M.Tech. and 64 B.Tech. level major projects on Industrial Application of Systems approach and management Science. He has published more than 380 research papers in reputed journals and proceedings of International and National Conferences. He has co-authored four books and co-edited five conference proceedings. He has delivered invited lectures in more than 400 Management Development programs in India and abroad. He has undertaken 5 sponsored research projects (two European Union funded projects) and 30 major systems based management/HRD consultancies in a number of reputed organizations both public and private, in India and abroad. He held the Modi Foundation Chair in 2001 at IIT Delhi and was offered Shailesh J. Mehta, Chair Professorship at IIT Bombay. He was Head, Centre for Management Studies, Coordinator ASRP, Head ETSC, Dean, PGS & R, Deputy Director and Director-in-Charge at IIT Delhi. He took over as the Director of Indian Institute of Technology, Roorkee on 16th December, 2001 and played a key facilitating role in the process of transformation of erstwhile University of Roorkee into IIT Roorkee. His tenure led to an overall excellence in academic, research, infrastructure and systemic development of IIT Roorkee. He held the position of Vice Chancellor of UPTU w.e.f. 31st July 2006 for three years. He has passionately championed the cause of quality of technical education through strategic quality initiatives.

His three years tenure as Vice Chancellor of U.P. Technical University has led to a wider brand acceptance of UPTU resulting in quantitative expansion from 238 colleges/institutions in 2006 under UPTU affiliation to 434 colleges/institutions in July 2008. Simultaneously he had very passionately introduced many innovative ideas in enhancing the academic excellence in UPTU-such as U.P.T.U.-Academic Excellence Award, VIBGYOR Performance Spectrum Control Chart, adherence to academic calendar and developing UPTU website to have greater transparency in performance of various colleges, curriculum and exam. reforms, faculty development, industrial collaboration etc.

He has also contributed to greater visibility and recognition of UPTU outside India through MoU's from reputed universities in USA and Canada. He created a state of the art infrastructure at its Noida Centre and initiated work on Virtualization of Technical Education in UPTU and a faculty development

institute to train and develop faculty members of its affiliated colleges. He is known for consistently sensitizing all stake holders to enhance quality in technical education.

Prof. Prem Vrat has received a number of prizes and honors and was recipient of National Merit Scholarship. He has received 8 best paper/case studies medals and prizes for his papers. His book “Productivity Management: A system approach” received awards from DMA as well as ISTD. He received prestigious “**Lillian Gilbreth Award**” for his outstanding contributions to Industrial Engineering & Productivity in India as well as *Dr. C.M. Jacob Gold Medal* of Systems Society of India for outstanding contributions to Systems Modelling & Management. He was elected Fellow of Indian National Academy of Engineering, Fellow of National Academy of Sciences, India, Fellow of World Academy of Productivity Science, Fellow of Indian Institution of Industrial Engineering and Fellow, Indian Society for Technical Education (ISTE). He was awarded Outstanding Contribution Award for National Development for the year 2002-03 by IIT Delhi Alumni Association. IIT Kharagpur conferred on him the “**Distinguished Alumnus Award**” in 2004. He received Lifetime Achievement Award from WIBP during Knowledge Summit 2004. He was conferred, Doctor of Engineering (Honoris Causa) by Bundelkhand University in 2006 and was conferred “**Centenarian Seva Ratna**” in 2005 and “**Uttaranchal Ratan**” Award in April, 2006. Indian Institution of Industrial Engineering conferred on him its highest recognition “**Honorary Membership**” on 12th October 2007. He was conferred **National Ishan Award** for Excellence in 2007 as well as **Life Time Achievement Award** from International Association of Educators for World Peace – an affiliate of U.N. He has been on the BoG of many technical institutions/Universities and on the editorial boards of many international and national journals and was Chairman (NWRC), AICTE and PIC of NPEEE and Chairman, Working Group on HRD in IT created by Ministry of Communication & Information Technology, Govt. of India. He is member of Governing Council of INAE as well as of NASI.

Career Profile

- Outstanding academic record with top ranks. Throughout a product of I.I.T. system [B.Tech.(Hons.); M.Tech.; Ph.D].

- 40 years of experience in teaching, research and consultancy at IIT Delhi, University of Birmingham, Birmingham,(UK), AIT Bangkok and IIT Roorkee.
- International Visiting Fellow; University of Western Sydney; Australia.
- Has wide administrative experience as Head CMS, Coordinator ASRP, Head Centre for Educational Technology at IIT Delhi and Chairman Div. of Ind. Engg. & Management at Asian Institute of Technology, Bangkok, Dean, Postgraduate Studies & Research, IIT Delhi, Deputy Director (Faculty) at IIT Delhi, Director (Officiating), IIT Delhi and presently Director, IIT Roorkee and played a key role in the process of successful transformation of University of Roorkee into IIT Roorkee.
- Guided 36 Ph.D., 117 M.Tech., and 64 B.Tech Projects.
- Published/presented more than 379 research papers in International and National Journals (185); Proceedings of International and National Conferences (186); others (8).
- Lectured in more than 400 short-term courses/management development programmes in India and abroad.
- Handled 30 major consultancies in various organizations in India and abroad and 5 sponsored research projects, two being European Union sponsored projects.
- Won 8 best paper awards / medals.
- Was conferred the Fellowship of I.I.I.E. for outstanding contributions to Industrial Engg. and the Institution.
- Honored with Lillian Gilbreth Award for outstanding contribution to profession of Industrial Engg. and Productivity in India, 1993.
- Inducted into “American Order of Excellence” for the accomplishments in Engineering Education & Research by American Biographical Institute, USA, February 2001.
- Serves/served on editorial boards of many international and national journals.
- Held (1985-95) joint Professorship with the Deptt. of Management Studies and Associate faculty in Interdisciplinary Applied Systems Research Programme and Modi Foundation Chair in 2001 at IIT Delhi.
- Served on BOG of various Engineering Colleges / Institutes in U.P, REC Hamirpur (H.P), NSIT Delhi, Governing Body of Delhi Productivity Council and was on the Board of UPTEC Computer Consultancy Ltd. Lucknow, IITR,

PTU, ISQ, NIH and some state government engineering colleges in U.P. and Uttranchal.

- Elected Fellow, National Academy of Sciences, India, in 1994.
- Awarded Dr. C.M. Jacob Gold Medal of System Society of India for outstanding contributions to Systems Modelling and Mgmt
- Convenor, EU-India Technical Assistance Programme on Quality Engineering and Quality Management Training in India.
- Elected Fellow of World Academy of Productivity Science 1997.
- Leader of Study Mission on Tech. & Voc. Education System in Japan sponsored by APO, Tokyo.
- Book on "Productivity Management: A Systems Approach" received DMA-Escort Commendation Prize 1998. It has also won Second Best Book Award of ISTD for 1999-2000
- Chairman, North Western Regional Committee, AICTE (2000-2003) and held membership of all India PG Board and All India Management Studies Board of AICTE. Chaired several ad-hoc committees of AICTE/NBA
- Visited 20 countries including U.K., USA, Ireland, France, Switzerland, Belgium, Japan, Thailand, Germany, Netherlands, Singapore, Malaysia, Nepal, Australia and China for professional/academic interaction
- Was conferred Honorary Fellowship of ISTE, 2001
- Distinguished Engineer's Award; Institution of Engineers (India) Roorkee on Engineers Day 15th September 2002
- Awarded outstanding contribution Award to National Development by IIT Delhi Alumni Association for 2002-2003 in April 2003
- Conferred, Distinguished Alumnus Award for 2004 by IIT Kharagpur at Golden Jubilee convocation. (Gold Medal, Citation and Certificate)
- Conferred, Life Time Achievement Award by World Institution Building Program (WIBP) for his outstanding contribution to tertiary education
- Fellow, Indian National Academy of Engineering
- Conferred, Centenarian Seva Ratna Award, 2005
- Distinguished Mechanical Engineering Educator Award, ISME, India, 2005
- Conferred, Doctor of Engineering (Honorary Causa) by Bundel Khand University and delivered Convocation Address, Jhansi, 2006.
- Conferred Uttaranchal Ratan Award on 17th April 2006

Academic Qualifications

- Post doctoral research, 1975-76, University of Birmingham, Birmingham, U.K
- Ph.D. in Industrial Engineering & Operations Research, 1974, Indian Institute of Technology Delhi
- M.Tech in Industrial Engineering & Operations Research, 1968, Indian Institute of Technology Kharagpur
- B.Tech (Honours) in Mechanical Engineering, 1966, Indian Institute of Technology Kharagpur

Contributions to Professional Societies/Technical Committees etc.

Held various positions in professional committees as follows:

1. Secretary, Indian Society of Mechanical Engineering (ISME)
2. Programme committee convenor, 1st National Symposium of PMA, November 1980 and member of managing & tech. Committees.
3. Convenor, Technical Committee and member, steering and programme committee of the 2nd PMA National symposium.
4. Editorial Secretary, Indo-British Conference on Engineering Production, Dec. 1976.
5. Chairman, Programme and Papers Committee, 24th National Convention of IIIE, February 1982 and member of its Steering Committee.
6. Co-Chairman, Organizing Committee, Member of Steering Committee of National Symposium on transportation Systems Studies, IIT Delhi, December 1981.
7. Coordinating reviewer, member of the organizing and coordinating committee, 3rd ISME Conference on Mech. Engg., March 1980.
8. Chairman, R& P Committee and member, Organizing Committee of the 6th World IFTOMM Congress, 1983.
9. Member, Technical Committee, International Conference on Transportation (ICOT), November 1980.
10. Member, Technical Committee, 9th AIMTDR Conference.
11. Member, Organizing Committee, XVI Annual Convention of ORSI, IIT Kanpur, December 1983

12. Convenor, Technical Committee and member, Steering Committee, International Symposium on Project Management, November-December 1983.
13. Member, Organizing Committee, One-day Symposium on Transport System & Land Use Planning, IIT Delhi, December 1983.
14. Member, Board of Technical Reviewers, Institution of Engineers (India).
15. Member, Organising / Steering Committee for International Conference on Transport Systems Studies, December 1986, IIT, New Delhi.
16. Vice President, ISME (1985-86)
17. Member, Audit Board of CAG for review of Instrumentation Ltd. Kota.
18. Member, Organising Committee, UNESCO Workshop on Management Education.
19. Member, Governing Body, Delhi Productivity Council, Jan 1992-1998.
20. Member, Board of Governors, State Controlled Engg. Colleges of U.P. (for 3 years)
21. Coordinator, One-day Future Vision Workshop on Applied Systems Analysis, Jan. 93
22. Member, Technical Committee, national Systems Conference, 1993.
23. Chairman, Program Committee, 5th National Systems Dynamics Conference.
24. Member, Org./Steering Committee, 8th ISME Conference, 1993.
25. Member, Org./ Steering Committee, INVEST, North zone since 1992.
26. Member, Certification Board, INVEST.
27. Member, Policy Council, System Dynamics Society of India.
28. Director, Board of Directors; UPTEC computer consultancy Ltd., Lucknow.
29. Member, Research Board of Advisers, American Biographer's Institute, USA.
30. Member, BoG, REC, Hamirpur (H.P.) and NSIT, Delhi; to represent IIT Delhi.
31. Member, Steering Committee, International Conference on Management of Technology, 1997
32. Chairman, Organizing Committee, International POMS Conference, Dec. 1999.
33. Member BoG; IIT Delhi; IIT Roorkee (Dec.2001 onwards).

34. Member BoG of PTU, Jalandhar.
35. Vice-Chairman, BoG, National Institute of Hydrology, Roorkee.
36. Member, Governing Council, Indian Society for Quality.
37. Member BOG, UPES, Dehradun, GB Pant Engineering College, Pauri and Kumaon Engineering College, Dwarahat in Uttranchal.
38. Head, National Accreditation Committee, NABCB, Quality Council of India

Administrative Responsibilities

Administrative Responsibilities Shared at the Department / Institution level (IIT Delhi)

1. President, Board for Students Publication (BSP).
2. President, Mechanical Engineering Society (MES).
3. Secretary, Departmental Board, Mech. Engg. Deptt.
4. Secretary, DRC, Mech. Engg. Deptt.
5. In - charge (Mech. Engg.) :
 Practical Training
 Department Library
 Ergonomics & Work Design Lab. (Industrial Engg. Lab)
 Industrial Engineering Group
 P.G. Students' Affairs
 Facilities Allocation
6. Programme Co-ordinator, M.Tech. Industrial Engg. Programme; Mech. Engg. Deptt.
7. Co-ordinator, Resources Engineering Project in School of Systems and Management Studies.
8. Chairman, UG Projects Evaluation Committee.
9. Member, DRC in Mechanical Engineering and C.R.C. in CMS.
10. Chairman, Finance Committee, MES.
11. Member, IRD Board (Senate nominee), 1979-81 and in 1993-94 (Director's nominee)
12. Head, Centre for Management Studies (1987 - 1989)
13. Chairman, C.R.C. in CMS

14. Chairman, Production & Industrial Engineering Group.
15. Chairman Division of Industrial Engineering & Management, AIT, Bangkok, Member Academic Senate, Institute Council, Admissions Committee and VPAA : AUH Committee at AIT Bangkok.
16. Chairman, DUGC, Mech. Engg. Deptt. IIT Delhi.
17. Co-ordinator, Applied Systems Research Programme, IIT Delhi.
18. Head, Centre for Education Technology, 1997-98
19. Dean, Postgraduate Studies & Research (1995-98)
20. Deputy Director (faculty), 1st March 1998 to December 2001.
21. Chairman, Standing Committee, FITT.
22. Chairman, BPGS (1995-98)
23. Chairman, BPGS (1995-98), Member BoG, IIT Delhi 2001.
24. Chairman, Senate, IIT Roorkee / Director IIT Roorkee (Dec. 2001 – May 2006)
25. Chairman North Western Regional Committee, AICTE, Member of AICTE's All India Board of PG Studies & Management Studies (one term). Chaired various ad-hoc Committees of AICTE / NBA.
26. Member, BoG PTU, Jalandhar, University of Petroleum Dehradun, BoG, IIT Roorkee and various other Engg. Colleges in U.P. and Uttaranchal
27. Chairman, PIC of NPEEE, MHRD, Govt of India.

Also served on various departmental/institutional committees constituted for various purposes such as House Building Advance Committee, Hindi Salahkar Samiti, SWOT analysis committee, etc.

Member of many Institute level committees, such as Senate, ECS, BERP, Deans Committee, Spl. Invitee, BoG, IIT Delhi and Governing Council, FIIT

Experience

More than 40 years' experience in teaching, research and consultancy as follows:

Academic:

- Lecturer, Department of Mechanical Engineering, IIT Delhi from 9 August 1968 to 31 December 1973.
- Assistant Professor, Department of Mechanical Engineering, IIT Delhi from Jan.1974 to 28 March 1979.
- Honorary Research Fellow, Department of Production Engineering, University of Birmingham UK (1975-76)
- Associate Professor, Department of Mechanical Engineering, IIT Delhi from 28 March 1979 to 29 September 1980.
- Professor, Department of Mechanical Engineering, IIT Delhi, 30 Sept. 1980 – June 2006 .
- Visiting faculty member in the Division of Industrial Engineering & Management, Asian Institute of Technology, Bangkok, Thailand (1985-86)
- Professor, IEM Division, AIT Bangkok (1989-91)
- Joint Professor; Department of Management Studies, IIT Delhi from June 1985 (in addition to Professorship in Department of Mechanical Engineering) to August 1995.
- Professor, MIED, IIT Roorkee (16th Dec.2001- 30th May 2006).
- Professor Emeritus, Department of Mechanical Engineering, IIT Delhi from 1st July 2006 to 31st July 2006.
- Honorary Visiting Professor, IIT Delhi, Jan. 2007

Administrative:

- Head, Centre for Management Studies, IIT Delhi, August 1987-89.
- Chairman, Division of Industrial Engineering & Management, Asian Institute of Technology, Bangkok, from 30 August 1989 to 31 August 1991.
- Co-ordinator, Interdisciplinary Applied System Research Programme (1992-96)
- Dean, Post Graduate Studies & Research, IIT Delhi (1995-98)
- Head, Centre of Educational Technology (1997 - 98)
- Deputy Director (Faculty), IIT Delhi, 1st March 1998-28 Feb, 2001
- Officiating Director, IIT Delhi (1st July 2000 – 12th Dec. 2000)
- Director, IIT Roorkee (16th Dec.2001- 31st May 2006)
- Vice Chancellor, UP Technical University (from 31st July 2006 onwards)

Editorial Experience

Was (is) associated with the editorial boards of following journals:

1. Co-editor, Journal of Engineering Production, ISME Journal (up to 1988).
2. Editor, Project Management Journal of PMA (up to December 1983)
3. Member, Editorial Board, International Journal of Material Flow, Published by Scientific Elsevier, Amsterdam (up to 1989).
4. Member, Editorial Board, Industrial Engineering Journal, IIIE (1983-85).
5. Invited correspondent, ISIR Newsletter, Published by International Society for Inventory Research, Budapest, Hungary (up to 1989)
6. Member, Editorial Board, System Dynamics: An International Journal of Policy Modelling, published from IIT Kharagpur (up to 2000).
7. Associate Editor, International Journal of Management & System, published from New Delhi.
8. Member Editorial Board, Engineering Cost & Production Economics: An International Journal (later on "International Journal of Production Economics), published by Science Elsevier, Amsterdam.
9. Chief Editor, "Open Channel: IITD Academic News Bulletin"(Sept.1993 - March 1995).
10. Member, Editorial Board; International Journal of Quality in Maintenance Engineering, published by MCB Press, U.K.
11. Member, Editorial Advisory Board, Management & Change; Journal of IILM, Delhi.
12. Member, Editorial Advisory Board; Products & Processes Development: An International Journal published by Pergamon Press, UK.

13. Member, Editorial Advisory Board, International Journal of operations & Production Management, published by MCB Press, U.K.
14. Member, Editorial Board, OPSEARCH (Jan, 2000 to May 2002)
15. Member, Editorial Board, Metamorphosis, Journal of IIM Lucknow, India
16. Member, Editorial Advisory Board - Transport Track, New Delhi
17. Member, Editorial Board, International Journal of Value Chain Management, Published by Inder Science, 2003 onwards.
18. Chairman, Editorial Board, Indian Science Abstracts (INSDOC, CSIR, New Delhi), 2000 - 2002.
19. Member, Editorial Advisory Board, Journal of Technical Education, ISTE, New Delhi, 2003 onwards.
20. Member, Editorial Board, Journal of Advances in Management Research, IIT Delhi

Expertise

- Industrial Engineering & Operations Research
- Project Management
- Value Engineering
- Materials Management
- Production Operations Management
- Total Quality Management (TQM)
- Supply Chain Management (SCM)
- Just In Time (JIT)
- System Dynamics in Policy Modeling/Strategic Management
- Knowledge Management.

Programs Directed

Organized and coordinated the following programs:

1. 2-week course on Work Study for Practicing Engineers, May -June 1974.

2. One week program on Advances in Industrial Management, January 1977.
3. ISME course on Materials Management, February 1978.
4. 2-week Summer School under Q.I.P. on Advances in Production Planning and Control, May 1981.
5. One week programme in Project Management and Industrial Engineering, August 1981.
6. Programme Coordinator, PMA programme in Techniques of Scheduling and Monitoring, IIT Delhi, May 1983.
7. Course Director, one week programme in Inventory Management, December 1988.
8. Coordinator, 2 in-company management development programmes for JK Synthetics Ltd., Kota
9. Coordinator, a number of MDP's for DCM Management Development Centre, New Delhi
10. 2-week QIP Summer School in Materials Management: A Systems Approach, May 17-28, 1993.
11. Course Director, 2 weeks 'Management Skills' programme for managers of ACC Ltd, May - June 1998.
12. Course Director, 2 weeks 'Management Skills' programme for managers of ACC Ltd, July 1999.
13. Course Director, 2 weeks 'Management Skills' programme for managers of ACC Ltd, January 2000
14. Course Director, 4 weeks 'Analytical Skills Development Programme' for ACC Ltd, IIT Roorkee; December 2002
15. Course Director, 4 weeks 'Analytical Skills Development Programme' for ACC Ltd., IIT Roorkee, 4th Jan. – 30th Jan. 2004

16. Course Director, 4 weeks 'Analytical Skills Development Programme' for ACC Ltd., IIT Roorkee, 9th Jan. – 4th Feb. 2005

17. Course Director, 4 weeks 'Analytical Skills Development Programme' for ACC Ltd., IIT Roorkee, 9th Jan. – 4th Feb. 2006

Funded Research Projects

1. Project Director, Diagnostic System Study of Technology Upgradation in Small and Medium Enterprises in NOIDA Region, sponsored by NOIDA through FIIT, (Rs.1.5 Lakh).
2. Investigator, Computer Aided Factory Information and Management System (CAFIMS), sponsored by DoE (Rs. 32 lakh).
3. Principal Investigator, Software Development for Delphi Technique for Technology Forecasting (Rs. 2.5 lakhs) funded by Dept. of Electronics.
4. Principal Investigator, System Dynamics Modelling for Global Warming (Rs. 3,5 lakhs) funded by Ministry of Environment & Forests.
5. Convenor, National Steering Group of EU-India Technical Assistance Programme in Quality Engineering and Quality Management Training in India (Approx. Rs. 1.2 Crores) Pedagogic grant to IIT Delhi by EU about Rs.30 lakhs).
6. Principal Investigator, UGC sponsored project on "TQM in Higher Education", (Rs. 2.85 lakhs).
7. Investigator, Computer based Manpower Planning for R&D - CSIR with Prof. Mohapatra of IIT Kharagpur as PI.
8. Coordinator, EU-IN Mantech cross-cultural Project with Polytechnic of Turin (Italy) [Approx. 1.97 Crores] Total Cost. IIT Delhi share Rs. 23 lakhs.

Invited Lectures

Participated as guest faculty / faculty in more than 400 in:

- Executive Development
- Management Development Programs
- Summer & Winter Schools in IIT

- A number of outside organizations/ Industries

On various aspects of :

- Industrial Engineering and Operations Research
- Production & Materials Management
- MIS
- System Analysis and System Dynamics
- Productivity Measurement
- JIT and TQM
- Supply Chain Management
- Knowledge Management

Consultancies Offered

Provided consultancy services to various public / private sector undertakings on various aspects of Industrial Engineering & Operations Research Problems. Consultancy work was provided to the following among others:-

- DCM
- ISI (Now BIS)
- DTC
- NTC
- Engineers India Ltd.
- Modi Rubber Ltd.
- UNICHEM
- Modi Spining & Weaving Mills Ltd.
- J.K. Synthetics
- ITCO, J&K
- AT&T (Thailand)
- NISTADS
- Nucleus Software Workshop
- ASRTU
- Edcil
- Bharti Telecom
- MAIT
- Appolo Tyres Ltd
- ACC Ltd.

- FNJPC **(Total of 30 major consultancy/HRD projects undertaken)**
- RITES

Honors/Awards/Recognitions

1. Won the best case - study medal of IIIE in the year 1977 for the best case - study published in the Industrial Engineering Journal.
2. Won medal of the IIIE in the year 1980 for the best case - study published in the Industrial Engineering Journal.
3. Won the best paper medals in the Industrial Engineering Journal in the year 1984 and in 1987.
4. Was conferred the Fellowship award of IIIE in 1985 for outstanding contribution to the profession and the Institution.
5. Won first prize of Rs.10,000/= and certificate of excellence in a paper contest, December 1988, organised by Ministry of Petroleum and ONGC.
6. Received Lillian Gilbreth Award in 1993 for outstanding contribution to the profession of Industrial Engineering and Productivity in India.
7. Awarded Dr. C.M. Jacob gold Medal of the System Society of India for outstanding contribution to System Modelling and Management.
8. Elected, Fellow of National Academy of Sciences, India 1994.
9. Won Sri Ram Award for best paper published in FAI Journal, 1997.
10. Elected, Fellow of World Academy of productivity Science, 1997.
11. Won DMA-Escort commendation prize, 1998 for his book "Productivity Management: A Systems Approach" published by Narosa.
12. Nominated to Various Honours by American Biographers Institute, USA and International Biographical Centre, U.K.
13. Won best case study medal of IIIE for paper published in Industrial Engineering Journal in 1998-99.
14. "American Order of Excellence" for the accomplishments in Engineering Education & Research by American Biographical Institute, USA.
15. Honorary Fellowship of ISTE, 2001.
16. Distinguished Engineer's Award; Institution of Engineers (India) Roorkee on Engineers Day 15th September 2002.
17. Outstanding Contribution Award for National Development by IIT Delhi Alumni Association for 2002-2003 in April 2003
18. Distinguished Alumnus Award for 2004 by IIT Kharagpur at the Golden Jubilee convocation.

19. Life Time Achievement Award by World Institution Building Program (WIBP) at Knowledge Summit 2004
20. Conferred, Centenarian Seva Ratna Award, 2005
21. Distinguished Mechanical Engineering Educator Award, ISME, India, 2005
22. Conferred, Doctor of Engineering (Honorary Causa) by Bundel Khand University and delivered Convocation Address, Jhansi, 2006.
23. Conferred Uttaranchal Ratan Award on 17th April 2006.
24. Indian Institution of Industrial Engineering conferred on him its highest recognition Honorary Membership on 12th October 2007.
25. Conferred National Ishan Award for Excellence in 2007.
26. Life Time Achievement Award from International Association of Educators for World Peace in 2007.

Participation in Conferences and Symposia

Participated in more than 60 national & international conferences. Chaired many Technical Sessions and delivered several keynote speeches, Inaugural and Valedictory addresses and moderated panel discussions.

Books, Monographs and Proceedings

1. Editor Proceedings, 24th National Convention of IIIE.
2. ISME Course Proceedings on Materials Management.
3. Lecture notes on Advances in PPC (QIP Course)
4. Lecture notes on one-week course on Work Study.
5. Proceedings of one week course on Advances in Industrial Management.
6. Editor, Proceedings, International Symposium on Project Management, PMA
7. Books of lessons on Management of Machines and Materials (in Six Units) for Indira Gandhi National Open University.
8. Authored chapters in eight research based books edited by others.
9. Principal author: "Productivity Management: A Systems Approach", Narosa Pub. House, 1998.
10. Co-editor - "Proceedings of POMS - 99" Phoenix, Publisher, 1999.

11. Co-editor – “Transportation Systems: Status and Directions” Phoenix Pub., New Delhi, 2002, 761 pages.
12. Co-editor “Case Studies in Management” –Vikas Publishing House, 2002.
13. Co-authored "Policy and Strategy Formulation : An Application of Flexible Systems Methodology" published by GIFT Pub., 2006
14. Co-authored “TQM- Planning, Design & Implementation” published by New Age International (P) Ltd. ,Publishers, 2008

Reviewer of research papers / book reviews published

Reviewed research papers for various journals such as

- OPSEARCH
- JEP
- Journal of Institution of Engineers (India)
- IIPA journal
- Industrial Engineering Journal
- System Dynamics: An International Journal of policy modeling.
- European Journal of Operational Research
- International Journal of Production Economics
- IAPQR Transactions Bulletin Calcutta Mathematical Society
- Conference papers for 3rd ,4th,5th ,6th & 8th ISME Conferences/ Symposia
- 2nd International Conference on Inventories at Budapest (Hungary)
- International Productivity Congress
- International Conference on Transport Systems (ICOTS) '86
- National Systems Conference (NSC) '86 and '93
- NITIE PGP research papers
- MDI's NMP Action Research projects
- International Journal of Operations & Production Management
- International Journal of Production Research

In addition, published book review in OPSEARCH, “Productivity” Journal of NPC, Project Management Review and Journal of Scientific and Industrial Research (JSIR), Management & Change, Nice Management Journal.

Other Professional/Societal Contributions

1. Visited U.K. during 1975-76.

2. Visited Japan in Sept. 1979 and presented country paper at APO.
3. Contributed to various co-curricular activities such as personal tutorial scheme, president (Kabaddi) in BSA, etc.
4. Contributions to faculty forum activities such as Vice- President PAS , Chairman of its committee on Dept. , Centre- Cell relationship, member Ex. Committee of Sr. Staff Club, Sick-bay Committee, etc.
5. Member, Award Committee - Delhi Shramvir Awards and Delhi Safety Awards 1980-81 as well as for 1981-82 awards constituted by Lt. Governor of Delhi
6. Member, Apex Committee for Restructuring NPC's post-graduate diploma programme in Industrial Engineering.
7. Member, IIIE, Delhi Chapter Council, 1983.
8. Co-opted Member, IIIE, National Council, 1984.
9. Member, Awards Committee, Golden Key and Handa Golden Rolling Trophy Awards, 1993 by Indian Value Engineering Society.
10. Visited Kathmandu, Nepal in June 1983 and June 1984 on lecture trip in Management Development Programme organized by MDI.
11. Visited Bangkok, Thailand, 1985-86 for an assignment as visiting faculty at A.I.T. in the Division of Industrial Engineering & Management and again in 1987- 89.
12. Lectured extensively in continuing Education Centre at AIT Bangkok.
13. Member, Advisory Board, All India Management Aptitude Testing Service.
14. Principal Resource Person, Programme on Project Management at CEC, AIT, Bangkok, September-October 1986.
15. External examiner for Ph.D. Thesis in a number of IIT's, NITIE and universities in India.
16. Doctoral Theses examiner, AIT, Bangkok.
17. Conducted Value Engg. Workshop at NPC at Kualalampur, Malaysia.
18. Involved in faculty selections in University of Roorkee, NITIE, IIT (Bombay, Kanpur, Kharagpur), I.I.Sc. and IIM Lucknow.
19. Led European Mission on Total Quality Management through EU in five European Countries June-July 1995.
20. Led 11 - Member Mission to Japan on Tech. & Vocational Education system, Sept 1997.
21. Delivered seminars at University of Rutgers, School of Business, N.J. and Wayne State University, Detroit, USA, April 1997.

22. Visited Tech. University, Berlin, Germany to supervise a joint masters thesis of an M.Tech student in Industrial Engineering at IIT Delhi, Oct. 1998.
23. Member of high level delegation in a 3-day workshop on “Technology Enhanced Learning” at Carnegie Mellon University, USA, Oct, 1998.
24. Visited Australia and delivered research seminars at University of Western Sydney and Deakin University, Geelong, Australia.
25. Delivered Lecture in International Workshop on Technical Education at IoE, Kathmandu, Nepal, Dec. 1999 and chaired concluding session.
26. LECTURED in 2 NBA - AICTE Workshop at Delhi and Indore, Jan - Feb; 2000 on TQM in education.
27. Member, MAIT Quality Advisory council and Jury MAIT Quality Recognition Program (1996 onwards)
28. Member, National Accreditation Committee, QCI, March 2000.
29. International Visiting Fellow, School of Management and Incite, University of Western Sydney, Australia during June-July 2003.
30. Chaired various technical sessions in National and International Conferences, delivered inaugural valedictory and key note speeches, moderated panel discussions.
31. Visited 15 U.S Universities, many MNC Companies and interacted with six chapters of IIT Roorkee Alumni Association in North America in May-June 2004
32. Led a 3-member team of Directors IIT Kharagpur and Deputy Director IIT Guwahati to 9 top German Universities, Dec.2004 under DAAD sponsorship.
33. Member, National Project Advisory Board, RITES.

Countries Visited

The countries visited are:

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|----------------|---------------|
| 1. U.K | 11. Thailand |
| 2. U.S.A | 12. Malaysia |
| 3. Germany | 13. Australia |
| 4. France | 14. Japan |
| 5. Italy | 15. China |
| 6. Ireland | 16. Mauritius |
| 7. Switzerland | 17. Nepal |
| 8. Austria | 18. Hong Kong |

- | | |
|-----------------|------------------|
| 9. Belgium | 19. Singapore |
| 10. Netherlands | 20. Vatican City |
| | 21. Canada |

Ph. D Theses Guided

Ph.D – 36 Awarded

Key : (Name of the Scholar, Thesis Title, name of co-supervisor, if any)

1. **Uendra Kumar**, On Optimization of Integrated Production Inventory Systems.
2. **A. Subash Babu**, Optimal Policies for Spares in Multi-Echelon Repair-Inventory Systems.
3. **N. Singh**, Modeling and Analysis of Multi-Echelon Inventory System for Spares, (K.S.Shah) (Rajasthan University)
4. **D.K. Banwet**, Some Studies in Facilities Location Planning.
5. **S.K. Agrawal (Sushil)**, Systems Modeling of Waste Management in National Planning.
6. **R. Chadha**, Systems Analysis of Indian Steel Industries: A Simulation Modeling Approach.
7. **R. Kumar**, System Dynamics Modeling in Corporate Planning: A Modular Approach for Production systems.
8. **K. Ravindranath**, Some Studies in Facilities Location Planning in the Presence of Forbidden Regions.
9. **G.D. Sardana**, Some Studies in Productivity Measurement through Performance Objectives: A Goal Programming Approach.
10. **A.B. Khan**, Studies in Macro level Analysis and Design of MIS
11. **I.K. Khanna**, System Dynamics Approach to Transport Planning and Policy Design.
12. **Rakesh Gupta**, Modeling and Analysis of Inventory Systems under Inflation and Stock Dependent Consumption.
13. **K.M. Mital**, Modeling and Analysis of Corporate Manpower Planning Process for Time Dependent Career Growth Policy, (Sushil)
14. **A.K. Vij**, Energy Policy Modeling and Analysis of Indian Economy, (Sushil)

15. **G. Padmanabhan**, Inventory Models under Inflation, Perishability and Stock Dependent Consumption Rate.
16. **A. Noorul Haq**, Modeling and Analysis of Integrated Production-Inventory-Distribution System, (A.Kanda)
17. **Mrs. S. Koul**, Corporate Policy Analysis of an Engineering Enterprise: A System Dynamics Study.
18. **J.P. Saxena**, Systems Analysis for Development of Energy Conservation Policy and Strategy in Indian Cement Industry, (Sushil)
19. **Rajeev Vijay**, Studies in Capacity Expansion and Traffic Assignment for Road Networks, (A.Kanda).
20. **Narendra Kumar**, On Development and analysis of Decision Support Systems for Unit Exchange Spares Management, (Sushil)
21. **B.S.Sahay**, Policy Modeling for Indian Fertilizer Industry : A System Dynamics Approach, (P.K.Jain)
22. **Ravi Shanker**, Some Issues in Cellular Manufacturing Systems Design with Vague Information.
23. **Ali A Majeed Ali**, Studies on Design And Planning of Cellular Manufacturing Systems
24. **Sushil Kumar Agrawal**, Business Excellence Model in Indian Context : A Select Study, (S.Karunes)
25. **Suresh Kumar Garg**, Impact of Technological Flexibility, Multi – Skilled Workforce And Supply Attributes In JIT Manufacturing Systems, (A.Kanda).
26. **Maghsud Solimanpur Darghlu**, Development and analysis of heuristics in the design and planning of cellular manufacturing systems , (Ravi Shankar)
27. **V. K. Khanna**, Total Quality Management in Automobile Sector: A System Dynamics Approach (Ravi Shankar, B.S. Sahay)
28. **Brig. Somnath Mishra**, Technological forecasting applications to weapon systems in the Indian context, (S.G. Deshmukh)
29. **Babu Lal**, Knowledge Management for competitive advantage and corporate performance - an empirical study of select organizations, (Sushil)
30. **Mrs. Sangeeta**, Impact of TQM on market performance : A select study of Indian IT Sector (Delhi Univ), (D.P.S. Verma)

- 31. Prakash Verma**, Dynamic modeling for Emission control policies in urban transport system, (S.G. Deshmukh)
- 32. Rupesh Kumar Pati**, Reverse Supply Chain Analysis of Waste Paper Recycling (Pradeep Kumar) (IIT Rorkee)
- 33. Manoj Kumar**, Vendor Selection Problem in Supply Chain, (Ravi Shankar)
- 34. Mrs. Shalini Anand**, Some studies on the Emission of greenhouse gases and their mitigation options (R.P. Dahiya)
- 35. S. Balan**, Planning, Design and Optimization of Global Supply Chain, (Pradeep Kumar) (IIT Roorkee)
- 36. Nitin Seth**, Service Quality in Supply Chains: A Study of Indian Manufacturing Organizations (S.G. Deshmukh)

Research Publications

International Journals:

1. **Prem Vrat**, N.S. Josan and A.C. Das Gupta, "Simulation of Multi-Item Production Inventory System: A Case Study", OPSEARCH, Vol. 11, No. 2-3, pp. 100-122, June-September 1974.
2. **Prem Vrat** and Ajit Virani, "A Cost Model for Optimal Mix of Balanced Stochastic Assembly Line and the Modular Assembly System for a Customer Oriented Production System", International Journal of Production Research, Vol. 14, No. 4, pp. 445-463, 1976.
3. **Prem Vrat** and A.B. Khan, "Simulation of a Blood Inventory Bank System in a Hospital", Socio Economic Planning Sciences: An International Journal, Vol. 6, No. 1, pp. 7-15, January 1976.
4. **Prem Vrat** and R.H. Hollier, "Optimization of Rotable Spares Stock: A System Entropy Approach", International Journal of Engineering Production, Vol. 1, No. 1, pp. 178-197.
5. **Prem Vrat**, "An Inventory Theoretical Approach for Optimization of a Class of Queuing Problems", International Journal of Engineering Production, Vol. 1, No. 1, pp. 19-28.
6. R.H. Hollier and **Prem Vrat**, "A Proposal for Classification of Inventory Systems", OMEGA, The International Journal of Management Science, Vol. 6, No. 3, pp. 277-279.
7. U. Kumar and **Prem Vrat**, "Optimal Batch Size for Multistage Production Inventory System", OPSEARCH, Vol. 15, No. 3, pp. 78-94, July - September 1978.

8. A Subash Babu and **Prem Vrat**, "An Inventory Model for Two-Level Repair System", International Journal of Engineering Production, Vol. II, No. 3, pp. 131-138, 1978.
9. A Subash Babu and **Prem Vrat**, "Inventory Control of Spares in a Transport Corp.: A Case Study", OMEGA, The Int. Journal of Management Science, Vol. 7, No. 2, pp. 153-159, 1979.
10. U. Kumar and **Prem Vrat**, "Optimization of Single Item Multistage Stochastic Production - Inventory System", Journal of Opl. Res. Soc. (U.K.), Vol. 30, pp. 547-553, June 1979.
11. A Subash Babu and **Prem Vrat**, "The Impact of Repair-Echelon Effectiveness and Location on Spare Stock", International Journal of Physical Distribution & Materials Management, Vol. 10, No. 1-2, pp. 15-24, December 1979.
12. N. Singh, **Prem Vrat** and K.S. Shah, "Inventory Control of Recoverable Spares in a Two-Echelon Multi-Location Repair - Inventory System", TEROTECHNICA, Int. Jour. of Phy. Ass. Mngt., Vol. 1, No. 4, pp. 257 - 264, July 1980.
13. **Prem Vrat** and N. Singh, "A Three-Echelon Inventory Model for Recoverable Spares", TERO TECHNICA, The Int. Jour. of Phy. Assets Mgmt., Vol. 2, pp. 211-215, 1981.
14. K.S. Shah, N. Singh and **Prem Vrat**, "Optimal Spares Allocation under Budget Constraint in a Two-Echelon Repair-Inventory System: A Case Study", OMEGA, Int. Jour. of Mgmt. Sc., Vol. 9, No. 4, pp. 444-445, 1981.
15. D.K. Banwet and **Prem Vrat**, "A Direct Search Procedure for a Class of Single Facility Location Problems", Journal of Engineering Production, No. 4, pp. 27-39, December 1981.
16. Rajesh Chadha and **Prem Vrat**, "A Global Model of Steel Consumption in India", paper presented at 14th Annual Convention of ORSI, Bombay, 1982, Also published in Journal of Engg. Production, Vol. 5, No. 3, pp. 11-15, September 1982.
17. N. Singh and **Prem Vrat**, "A Location Allocation Model for a Two-Echelon Repair Inventory System", IIE Transaction, USA, Vol. 16, No. 3, pp. 222-228, 1984.
18. K. Ravindranath, N. Singh and **Prem Vrat**, "The Mini-Sum and Minimax Version of a Single Facility Euclidean Location Problem in the Presence of a Rectangular Forbidden Region", Journal of Engg. Production, An International Quarterly, Vol. 7, No. 2, pp. 59-69, 1984.
19. N. Singh and **Prem Vrat**, "A Model for Integrated Design of Material Flow in a Two-Echelon Repair Inventory System", Material Flow: An International Journal, Vol. 2, pp. 263-268, 1985.
20. **Prem Vrat** and N. Singh, "A Model for Integrated Design of Material Flow in a Two-Echelon Repair-Inventory System", Material Flow, An Int. Journal, Vol. 2, No. 4, pp. 263-268, 1985.

21. K. Ravindranath, N. Singh and **Prem Vrat**, "Bi-Criteria Single Facility Location Problem in the Presence of a Single Forbidden Region", *OPSEARCH*, Vol. 22, No. 1, pp. 1-16, March 1985.
22. P.S. Kharola and **Prem Vrat**, "Maintenance, Manpower and Inventory Planning in a Two-Level Repair-Inventory System: An Integrated Approach", *Maintenance Management International*, Vol. 6, pp. 153-165, 1986.
23. Rakesh Gupta and **Prem Vrat**, "Inventory Model for Stock Dependent Consumption Rate", *OPSEARCH*, Vol. 23, NO. 1, pp. 19-24, 1986.
24. Rakesh Gupta and **Prem Vrat**, "Inventory Model with Inflation and Quantity Discounts", *IJOMAS*, Vol. 2, No. 1, pp. 19-24, 1986.
25. **Prem Vrat** and Chareon Kriengkrairut, "A Goal Programming Model for Project Crashing with Piece-Wise Linear Time-Cost Trade-off", *Engineering Cost and Production Economics*, Vol. 10, pp.161-172, 1986.
26. Sushil K. Agrawal and **Prem Vrat**, "I-O-W Model for National Planning", *International Journal of System Science*, Vol.18, NO.11, pp.2043-2063,1987.
27. G.D. Sardana and **Prem Vrat**, "Productivity Measurement in a Large Organization with Multi-Performance Objectives: A Case Study", *Engineering Management International*, Vol.4, pp105-125,1987
28. A.K.Vij, Sushil and **Prem Vrat**, "Energy Modelling for the National Economy: A Generalized Model Based on Physical Systems Theory Approach", *International Journal of Systems Science*, Vol.19, No.6, pp.857-873, 1988.
29. Sushil and **Prem Vrat**, "Generalization of I-O-W Model for Waste Management Policy Analysis and National Planning", *International Journal of Systems Science*, Vol.19, pp.1749-1761, 1988.
30. G. Padmanabhan and **Prem Vrat**, "An Inventory Model for Items with Exponential Decay under known Price Increase", *International Journal of Management and Systems*, Vol.4, No.1, pp.27-33, January-April 1988.
31. A.K. Vij, **Prem Vrat**, and Sushil, "Energy Modelling through Integration of System Dynamics with Physical Systems Theory", *System Dynamics: An International Journal of Policy Modelling*, Vol.1, No.1, pp.1-9, April 1988.
32. Sushil and **Prem Vrat**, "Waste Management Policy Analysis and Growth Monitoring: An Integrated Approach to Perspective Planning", *International Journal of Systems Science*, Vol.20, No.6, pp.907-926, 1989.
33. Rakesh Kumar and **Prem Vrat**, "Using Computer Models in Corporate Planning", *Long Range Planning*, Vol.22, No.2, pp.114-120. April 1989.
34. G. Padmanabhan and **Prem Vrat**, "An EOQ Model for Items with Stock Dependent Consumption Rate and Exponential Decay", *Engg. Cost and Production Economics: An Intl. Journal for Industry*, Vol. 26, No. 4, pp. 231-242, 1989.

- 35.A. Noorul Haq, **Prem Vrat**, and Arun Kanda, "Modelling and Analysis of Integrated Production-Distribution System with Deterministic Lead Times", OPSEARCH, Vol. 26, No.4, pp.231-242,1989.
- 36.I.K. Khanna, **Prem Vrat**, and N.Singh, "A System Dynamics Transportation Policy Planning Model: Understanding Systems Behavior and Policy Alternatives" System Dynamics: An Intl. Journal of Policy Modelling, II (1), 13-21, 1989.
- 37.**Prem Vrat**, and G.Padmanabhan, "An Inventory Model under Inflation for Stock Dependent Consumption Rate Items", Engg. Cost and Production Economics, Vol.15, May 1989.
- 38.G. Padmanabhan and **Prem Vrat**, "Inventory Model with a Mixture of Backorders and Lost Sales", International Journal of Systems Science (U.K.), Vol. 21, No.8, pp.1721-1726, 1990.
- 39.G. Padmanabhan and **Prem Vrat**, "Analysis of Multi-Item Inventory System under Resource Constraints: A Non-Linear Goal Programming Approach", Proceedings MCDM Conference, AIT, Bangkok, December 1989, pp.114-134. Also published in Engineering Cost and Production Economics: An International Journal, Vol.20, pp.121-127, 1990.
- 40.J.P. Saxena Sushil and **Prem Vrat**, "Linkages of Key Elements in Fuzzy Program Planning" Systems Research, Vol.7 (3), pp.147-158,1990.
- 41.J.P. Saxena Sushil and **Prem Vrat**, "Impact of Indirect Relationship in Classification n of Variables: A MICMAC Analysis for Energy Conservation's", Systems Research; 7(4), 245-253, 1990.
- 42.A.K. Vij, Sushil and **Prem Vrat**, "Energy Policy Implications of Waste Management, in various Sectors of Economy: An Analysis Based on Physical Systems Theory", Energy Conversion and Management, Vol.30, No.4, pp.387-401,1991.
- 43.A. Noorul Haq, Arun Kanda and **Prem Vrat**, "An Integrated Production-Inventory-Distribution Model for Manufacture of Urea", International Journal of Production Economics, Vol. 25, Nos. 1-3, 1991, pp. 33-49.
- 44.J.P. Saxena, Sushil and **Prem Vrat**, "Scenarios Building: A Critical Study of Energy Conservation in Indian Cement Industry", Technology Forecasting and Social Change, Vol.41, 1992, pp.121-146.
- 45.**Prem Vrat**, and Pisal Yenradee, "A Comparative Study of Push and Pull Production Planning Strategies in a Hard Disk Parts Manufacturing Company", International Journal of Operations and Production Management, Vol.11(9), 1991, pp.41-47.
- 46.Rajeev Vijay, Arun Kanda and **Prem Vrat**, "An Algorithm for Capacity Expansion of an Urban road Network", OPSEARCH, Vol.29, No.3, 1992, pp.184-202.
- 47.Rajeev Vijay, Arun Kanda and **Prem Vrat**, "Multi period Capacity Expansion of Road Networks: Formulation and Algorithm", OPSEARCH, Vol.30 (2), June 1993, pp..1993, pp.117-140.

48. N. Kumar, **Prem Vrat**, and Sushil, "A Simulation Study of Unit exchange Spares Management of Diesel Locomotives in Indian Railways", *International Journal of Production Economics*, (Spl. Issue on Asia Pacific Mfg.), Vol. 33, pp. 225-236, 1994
49. G. Padamanabhan and **Prem Vrat**, "EOQ Models for Perishable Item under Stock Dependent Selling Rate", *European Journal of Operations Research*, Vol 86, 1995, pp. 281-292
50. Rajeev Vijay, Arun Kanda and **Prem Vrat**, "Multi-Period, Multi choice Capacity Expansion Problem of Road Networks: Formulation and Algorithm", *International Journal of Management and Systems*, Vol. 19, No. 2, pp. 189-198, 1993.
51. J.P. Saxena, Sushil and **Prem Vrat**, "Hierarchy and classification of Program Plan Elements Using Interpretive Modelling-A Case Study of Energy Conservation in Indian Cement Industry", *Systems Practice*, 1992.
52. N. Nagarur, **Prem Vrat**, and W. Duongsuwan, "Production Planning and Scheduling for Injection moulding of pipe fittings: A Case Study", *International Journal of Production Economics*, Vol. 53, No. 2, 1997, pp. 157-170.
53. **Prem Vrat**, "A Report on Operations Management in India", *International Journal of Operations & Production Management*, Vol. 18, NO. 7, 1998, pp 651-653
54. Shanker R. and **Prem Vrat**, "Post design Modeling for Cellular Manufacturing System with Cost Uncertainty", *International Journal of Production Economics*, 55, 97-109, (1998).
55. S.K. Agrawal and **Prem Vrat**, "Total Quality Management: Indian Experiences", *International Journal of Industrial Engineering*, 1998, Vol 5, No. 3 pp 214-224.
56. Shanker R. and **Prem Vrat**, 1999, "Some design issues in Cellular Manufacturing Design using fuzzy programming approach", *International Journal of Production Research*, Vol. 37, No. 11, pp. 2545-2563.
57. Garg, S., **Vrat, P.**, Kanda, A. "Equipment Flexibility vs. Inventory: A Simulation Study of Manufacturing Systems", *International Journal of Production Economics*, 70 (2001), 125-143.
58. Misra S.N.; Deshmukh S G and **Prem Vrat**, "Matching of Technological Forecasting Technique to a Technology", *Technology Forecasting & Social Change*: 69(2002) 1-27.
59. Solimanpour, D. M., **Vrat, P.**, Shankar, R., "A Transiently Chaotic Neural Network Approach to Cellular Manufacturing", *International Journal of Production Research*, 40(10), 2002, pp-2225-2244.
60. Garg, S., **Vrat, P.**, Kanda, A. "Trade off Between Multi-Skilling and Inventory in Assembly Line operations under Demand Variability", *International Journal of Operations & Production Management*, Vol. 22, No. 5, pp. 565-583, 2002.

61. Solimanpour, D. M., **Vrat, P.**, Shankar, R., “A Multi-objective Genetic Algorithm Approach to the Design of Cellular Manufacturing Systems”, *International Journal of Production Research*, Vol. 42, No.7, pp. 1419-1441, 2004.
62. Khanna, V. K., **Vrat, P.**, Shankar, R., Sahay, B.S., 2002, “Developing Causal Relationship for TQM Index for Indian Automobile Sector”, *Work Study, (An International Journal)* Vol. 51 (6-7), pp. 364-373.
63. Khanna, V. K., **Vrat, P.**, Shankar, R., Sahay, B.S., and Gautam, A., 2003, “TQM Modeling of Auto Sector: A System Dynamics Approach”, *Work Study, (An International Journal)* Vol. 52 (3), March, 2003, pp. 94-101.
64. Solimanpour, D.M., **Vrat, P.** and Shankar, R., “Feasibility and Robustness of Transiently Chaotic Neural Networks Applied to the Cell Formation Problem”, *International Journal of Production Research*, Vol. 42 No.6, pp.1065-1082, 2004.
65. Solimanpour, D.M., **Vrat, P.** and Shankar, R., “Ant Colony Optimization Algorithm to the Inter cell Layout Problem in Cellular Manufacturing”, *European Journal of Operational Research*, 157 (2004), pp.592-606.
66. Solimanpour, D.M., **Vrat, P.** and Shankar, R., “A heuristic to minimize makespan of cell scheduling problem”, *Intl. Jour. of Production Economics*, 88(2004), pp.231-241.
67. Solimanpour, D.M., **Vrat, P.** and Shankar, R., “An ANT Algorithm for single-row layout problem in flexible Manufacturing System”, *Computers & Operations Research*, Vol. 32 (3), 2005, pp. 583-598.
68. Solimanpour, D.M., **Vrat, P.** and Shankar, R., “A Neuro-Tabu Search Heuristic for the Flow Shop Scheduling Problem”, *Computers & Operations Research*, Vol. 31 (13), pp. 2151-2164, 2004.
69. Kumar, M, **Vrat, P.**, and Shankar, R., “A Fuzzy Programming Approach for Vendor Selection Problem in a Supply Chain”, *International Journal of Production Economics*, Vol. 101 (2), 2006, pp. 273-285.
70. Kumar, M, **Vrat, P.** and Shankar, R., “A Fuzzy Goal Programming Approach for Vendor Selection Problem in a Supply Chain”, *Computer and Industrial Engineering*. Vol. 46 (2004), pp. 69-85.
71. Khanna, V.K., **Vrat, P.**, Shankar, R., and Sahay, B.S., “Managing the Transition Phase in TQM Journey: A System Dynamics” Approach, *International Journal of Quality & Reliability Management*, Vol. 21, No.5, 2004, pp. 518-544.
72. Khanna, V. K., **Vrat, P.**, Shankar, R., and Sahay, B.S., “Transition Phase in Indian Auto Sector; A System Dynamics Approach”, *International Journal of System Dynamics and Policy Planning*, Vol. XIV, Nos. 1&2, (2002), pp.23-38.
73. Khanna V.K., **Vrat P.** and Shankar R, “Strategy Mishap in the TQM Journey: A System Dynamics Approach” *Journal of Advances in Management Research*, Vol. I, No.2, pp. 46- 59, 2004.

74. Prakash Verma and **Prem Vrat**, Greenhouse Gas Emissions and Global Climate – A case for System Dynamics Application; International Journal of System Dynamics and Policy Planning, vol. XIII, No. 1-2, 2001, pp. 27-46.
75. Mishra Somnath, Deshmukh S.G. and **Prem Vrat** “Some Issues on Technological Forecasting and Technology Transfer in India” Intl. Jour. Of Tech. Transfer and Commercialisation, Vol. 4, No. 2, 2005, pp. 231-246.
76. Garg Suresh, **Vrat P.**, Kanda A. and Dua B.B. “Aspects of Flexibility and Quality in Indian Manufacturing Practices – A Survey”, Intl. Journal of Manufacturing Tech. & Management, Vol. 5, Nos. 5/6, pp. 443-458, 2003.
77. Pati, R.K., **Prem Vrat** and Pradeep Kumar, “Cost optimization Model in Recycled Waste Reverse Logistics System”, International Journal of Business Performance Management, (Spl. Issue on Manufacturing Strategy), Vol. 6, No. 3/4, 2004, pp. 245-261.
78. Seth, Nitin., Deshmukh, S.G. and **Prem Vrat**, "Service Quality Models: A review", Accepted for publication in the International Journal of Quality and Reliability Management in Vol. 22, No.(9), 2005, pp. 913-949.
79. Seth, Nitin., Deshmukh, S.G. and **Vrat, P.**, "A framework for the measurement of quality of service in supply chain", Supply Chain Management: An International Journal, To appear in Vol. 11, No.1, 2006, pp. 82-94.
80. Shalini Anand, Dahiya, R.P., Talyan, V and **Prem Vrat**, “Investigations of Methane emissions from Rice cultivation in Indian Context”, Environmental International, Vol. 31 (4), pp. 469-482, 2005.
81. Kumar, M., **Vrat, P.** and Shankar, R., “An integrated approach using utility theory and chance constrained programming for supplier quota allocation”, International Journal of Integrated Supply Management, 2005, Vol. 2 (1/2), pp. 132-148.
82. Pati, R.K., **Prem Vrat** and Pradeep Kumar, “Economic Analysis of paper recycling vis-à-vis wood as raw material”, Accepted in International Journal of Production Economics, Vol. 103 (2006), pp. 489-508.
83. Pati, R.K., **Prem Vrat** and Pradeep Kumar, “Integrated chain analysis of recycled vis-à-vis wood pulp paper industry- an Indian Manufacturer view point”, Accepted in International Journal of Value Chain Management, 2005.
84. Pati, R.K., **Prem Vrat** and Pradeep Kumar, “Three-win strategy with optimization approach for recycled paper manufacturer”, Accepted in International Journal of Environment and Waste Management, Vol.1(1), pp. 44-63.
85. Kumar, M., **Vrat, P.** and Shankar, R., “A Multi-objective 3PL allocation problem for fish distribution”, Accepted in spl. Issue of International Journal of Physical Distribution and Logistics Management, Vol. 36 (9), 2006, pp. 702-715.

86. Shalini Anand, **Prem Vrat**, and Dahiya, R.P., "Application of System Dynamics Approach for assessment and mitigation of CO₂ emissions from Cement Industry", Accepted in Journal of Environment Management (2005), 79(4), pp. 383-398.
87. Balan, S., **Prem Vrat** and Pradeep Kumar, "Reducing Bullwhip Effect in Supply Chain with Fuzzy Logic" Accepted in spl. Issue of International Journal of Integrated Supply Management, Vol. 3, No. 3, pp. 261-283, 2007.
88. Balan, S., **Prem Vrat** and Pradeep Kumar, "System Dynamics modeling for a Supply Chain Management Index for the Indian Automobile Sector" International Journal of Management & Systems, Vol. 22, No.2/3, 2006 .
89. Seth Nitin, Deshmukh, S.G., and **Prem Vrat**, "SSDSC: a tool to measure supplier service quality in supply chain" Accepted in Production Planning and Control, 2005, Vol. 17 (5), pp. 448-463.
90. Balan, S., **Prem Vrat** and Pradeep Kumar, A Strategic Decision Model for the Justification of Supply Chain as a Means to Develop National Development Index, International Journal of Technology Management, Inderscience, UK (Accepted)
91. Balan, S., **Prem Vrat** and Pradeep Kumar, "Assessing the Challenging and Opportunities of Global Supply Chain Management", International Journal of Value Chain Management, Inderscience, UK, Vol.1, No.2, 2006, pp. 105-116.
92. Neeraj Kumar., Balan, S., **Prem Vrat** and Pradeep Kumar, Analysis of Bullwhip Effect in Reverse Supply Chain, Journal of Advances in Management Research, Vol.3(II), pp.18-33, 2006
93. Balan, S., **Prem Vrat** and Pradeep Kumar, (2007), Information distortion in a supply chain and its mitigation of a MIMO model using Soft Computing Approach, OMEGA: An International, Management Science, Elsevier Science (Article-in-press) Available on line from Feb., 2007.
94. Balan, S., **Prem Vrat** and Pradeep Kumar, (2007), Risk Analysis in Global Supply Chain Network Environments, European Journal of Operational Research, Elsevier Science, (Accepted and Article in press)
95. Balan, S., **Prem Vrat** and Pradeep Kumar, (2007), Multi Criteria Decision Making in Global Supply Chain Network Environments, International Journal of Production Economics, Elsevier Science, (Accepted and Article in press)
96. Balan, S., **Prem Vrat** and Pradeep Kumar, (2007), Dynamic analysis of a Global Supply Chain using System Dynamics approach, System Dynamics : An International Journal of Policy Modeling (Accepted)
97. Seth, Nitin, Deshmukh, SG and **Prem Vrat** - 'A Conceptual Model for Quality of Service in Supply Chain, International Journal of Physical Distribution and Logistics Management, Vol. 36 (7), 2006, pp. 547-575.

98. Pati R.K., **Prem Vrat** and Pradeep Kumar – 'A goal programming model for paper recycling system' – OMEGA – The International Journal of Management science, 2006, Vol. 36, pp. 405-417.
99. Khanna V.K., Sahay B.S., **Prem Vrat** and Ravi Shankar – 'TQM Implementation in the Indian Automobile Sector' Journal of Advances in Management Research', Vol. 4 (1), 2007, pp. 49-62.
100. Malla Reddy and **Prem Vrat** – 'Vendor Managed Inventory Model : A Case Study', Journal of Advances in Management Research, Vol. 4 (1), 2007, pp. 83-88.

National Journals:

101. **Prem Vrat** and S.K. Arora and A. Das Gupta, "A New Approach in Balancing a Continuous Production Line", Industrial Engg. & Management, Vol. 5, No. 3, 1970
102. **Prem Vrat** and B.K.Ahuja, "TTDD: Turn Around Time Demand Distribution Approach for the Optimization of the Closed Variable Input-Output Inventory System", Industrial Engg. & Management, Vol. 6 No. 3, 1971.
103. **Prem Vrat** and M. Chand, "Coverage Analysis Approach for Materials Management: Concepts and a Case Study", Productivity, Vol. XIII, No. 4, January - March 1973.
104. **Prem Vrat** "A Model for Determining Optimal Rotating Float in a Closed Loop Stochastic Inventory System", Industrial Engg. & Management, Vol. 8, No. 3, July - September 1973.
105. M.S. Luhach and **Prem Vrat**, "Optimal Scheduling in a Machine Shop", Industrial Engg. & Management, Vol. 9, No. 2, April - June 1974. Also reprinted in "Machine Building Industry", Vol. 13, No. 9, pp. 13-20, September 1974.
106. **Prem Vrat**, "Decision Making under Uncertainty", NAGARLOK, Vol. VII, No. 4, pp. 51-58, October-December 1973.
107. **Prem Vrat**, "Some Considerations in the Design of Management Information Systems for Effective Planning and Control", Integrated Management, No. 98, pp. 11-14, June 1974.
108. **Prem Vrat**, "On Value Assurance as the Total System Objective", Productivity, Vol. XVI, No. 1, pp. 612-618, April- June 1975.
109. **Prem Vrat**, "Quantitative Techniques for Functional Analysis in Value Engineering; Concepts through an Application", Industrial Engg. Journal, Vol. IV, No. 7, pp. 1-5, July 1975.
110. **Prem Vrat** and D.P. Nagpal, "Optimization of Maintenance Crew Size by Simulation - A Case", Industrial Engg. & Management, April-June 1975, pp.1-7.

111. U.Kumar and **Prem Vrat**, "A Generalized Model for a Single Item Stochastic Production-Inventory System", Proc. of the All India Conf. (IIIE) Bangalore, May 1975. Also reprinted in Integrated Management, No. 124, pp. 35-38, August 1976.
112. **Prem Vrat** and A.B. Khan, "Optimal Procurement and Inventory Policies for Drugs in a Hospital for Effective Health Care Planning under Budget Constraints", Productivity, Vol.XVII,No.1, pp.112-124.
113. **Prem Vrat** and D.P. Nagpal, "Optimal Preventive Maintenance Programme in a Textile Mill: A Case", Productivity, Vol. XVII, No. 1, pp. 49-65.
114. **Prem Vrat** and Arun Kanda, "A Decision Model for a Multiple Objective Plant Location Problem", Integrated Management, No.123, pp.27-33.
115. A.D.Gupta, **Prem Vrat** and S. Manaktala, "Cost Reduction through Value Engineering: A Case", Industrial Engg. & Management, April-June 1976, pp.1-9.
116. **Prem Vrat** and V.K. Garg, "Management Information System: The Current state of the Art: Part I and Part II", Integrated Management, Nos. 125 and 126, pp. 29-33 and 11-15, 1976.
117. **Prem Vrat** and V.K.Garg, "Information System Design: A New Approach", Industrial Engineering Journal, Vol. VI, No. 4, pp 3-8, April 1977.
118. **Prem Vrat** and M.P. Tyagi, "Optimal Preventive Maintenance Policies for Processing Equipment: A Case, Industrial Engineering Journal, August 1977, pp. 11-13.
119. **Prem Vrat**, "Specifications on Manufacturing Tolerances: A Case for Realistic Quality Planning", Indian Chemical Manufacturer, January 1977, pp. 19-22.
120. **Prem Vrat**, R.N. Mittal and H.N. Rangaraj, "Analysis and Control of Scrap in Process Foundry: A Case Study", Ind. Foundry Journal, 1977, pp. 1-8.
121. R.S. Solanki and **Prem Vrat**, "Bi-Characteristics Control Chart: A Case Study", Journal of Institution of Engineers (India) ME, pt. 5, Vol. 57, pp. 239-242, March 1977.
122. **Prem Vrat**, "A Model for Joint Optimization of Rotable Spares Inventory and Maintenance Manpower Level", Industrial Engg. & Management, Vol. 13, No. 2, pp. 40-45, September 1978.
123. **Prem Vrat** and M.S. Mudaliar, "Optimal Replacement Policies for Weaving Machines", Productivity, Vol. XIX, No. 2, pp. 243-263, July-September 1978.
124. Akhil Chandra and **Prem Vrat**, "Investigations on Single Facility Location Problem with Mixed Mode of Travel", Journal of Institution of Engineers (India) ME, Pt. 2, Vol. 60, September 1979.
125. **Prem Vrat**, Materials Productivity in Indian Industries", Indian Management, Vol.17, No.12, pp.17-19.

126. **Prem Vrat** and M.P.Tyagi, "Maintenance Manpower Planning Using Simulation: A Case Study", Journal of Institution of Engineers (India) ME, Pt. 2, Vol. 59, pp. 260-266, May 1979.
127. **Prem Vrat**, "Capacity Utilization in Indian Industries", Bulletin of Faculty of Management Studies, Vol. 1, No. 3, pp. 41-44.
128. A. Subash Babu and **Prem Vrat**, "Inventory Control of Coal in Large Thermal Power Station", Energy Management, Vol. 3, No. 2, pp. 109-118, June 1979.
129. R. Sethi and **Prem Vrat**, "Inventory Management of General Consumable of an Electronic Industry", Management and Systems Review, Vol.2, No. 9, pp. 37-40, September 1979.
130. D.K.Banwet, S. Jain and **Prem Vrat**, "Location- Allocation of Coal Dumps: A Case Study", Industrial Engineering Journal, Vol. IX, No.6, July 1980. Also presented at 22nd IIE National Convention at Jamshedpur, January 1980. (Won best case study medal)
131. D.K.Banwet, S. Jain and **Prem Vrat**, "Location- Allocation of Coal Dumps: A Case Study", Industrial Engineering Journal, Vol. IX, No.6, July 1980. (Won best paper medal)
132. **Prem Vrat**, "Materials Planning Aspects for Reducing Schedule Slippage in Projects, A Diagnostic Analysis", Project Management, Vol. 3, No. 2, pp. 30-36, December 1980.
133. N. Singh, K.S. Shah and **Prem Vrat**, "Inventory Control of Recoverable Spares in a Two-Echelon Store System", Industrial Engineering Journal, Vol. IX, No. 9, pp. 1-8, September 1980.
134. **Prem Vrat** and Rakesh Kumar, "Corporate Planning Practices in India: A Survey", Industrial Engineering Journal, Vol. X, No. 2, pp. 1-8, February 1981.
135. S. K. Agarwal and **Prem Vrat**, "Measurement of Waste Management Effectiveness: A New Concept", Industrial Engineering Journal, Vol. X, No. 8, pp. 25-31, August 1981.
136. Sushil and **Prem Vrat**, "Productivity through Efficient Waste Management : A New Concept", Integrated Management, Vol. XVI, Nos. 4-6, pp. 14-17, April – June 1981.
137. Upendra Kumar and **Prem Vrat**, "Production Inventory Systems: An Integrated Framework", Industrial Engineering Journal Vol. X, No. 11, pp. 3-10, November 1981.
138. Upendra Kumar and **Prem Vrat**, "EBQ and Optimal Batch Splitting in Multi-Stage Production Inventory System with Backlogging", Trans. IAPQR, Vol. 7, No. 2, pp. 105-128, July 1982.
139. P.M. Kalia and **Prem Vrat**, "Design of a Composite Project Monitoring System for an Organization", Proc of 2nd PMA National Symposium on

- Project Management, April 1982, pp. 98-118. Also published in Project Management Review, Vol. 1, No. 1, pp. 1-16, June 1983.
140. G.D. Sardana and **Prem Vrat**, "Impact of External Environment on Productivity Measurement: A Contingency Approach", Proc. of International Productivity Congress, Bombay, January 1983. Also printed in Indl. Engg. Journal. Vol. XII, No. 9, pp.1-8, September 1983. (Modified version).
 141. S.K. Agrawal and **Prem Vrat**, "Survey of Waste Management Practices in India", Productivity, Vol. XXIII, No. 2, pp. 4441-449, 1983.
 142. S.K.Agrwal and **Prem Vrat**, "Where Do Our Waste Management Practices Stand?", Productivity, Vol. XXIII, No. 4, pp. 441-449, 1983.
 143. S.K.Agrwal and **Prem Vrat**, "Waste Management Aspects in Input-Output Framework", Ind. Engg. Journal, Vol. XII, No. 9, pp. 9-14, 1983.
 144. G.D. Sardana and **Prem Vrat**, "Performance Objective Productivity (POP): A Conceptual Framework and Mathematical Model for Productivity Management", Productivity, Vol. XXIV, No. 3, pp. 299-307, October – December 1983.
 145. D.K.Banwet and **Prem Vrat**, "A Direct Search Procedure for Solving Single Facility Multiple Criteria Location Problems", P.U. Mgmt. Review, Vol. VI, No. 1.2, pp.45-50, 1983.
 146. G.D.Sardana and **Prem Vrat**, "Concept of Productivity: A Plea for Reappraisal", Udyog Pragati, Vol. VIII, No. 1, pp. 6-24, January – March 1984.
 147. G.D.Sardana and **Prem Vrat**, "Model of Productivity Measurement", Productivity, Vol. XXV, No. 3, pp. 271-289, October-December 1984.
 148. G.D.Sardana and **Prem Vrat**, "Productivity Measurement of a Production System: A P-O-P Approach", Ind, Engg. Journal, Vol. XIII, No. 8, pp. 11-20, 1984. (Won the best paper award of 1984 by IIIE)
 149. D.K.Banwet and **Prem Vrat**, "Analogue Models for Location Problems", Productivity, Vol. XXV, No.4, January-March 1985.
 150. N.Singh and **Prem Vrat**, "Spares Planning for a Transport Corporation", Ind. Engg. Journal, Vol. XIV, No. 2, pp. 17-20, 1985.
 151. P.S Kharola and **Prem Vrat**, "Maintenance Planning in a Transport Corporation for a Rotable Spare: A Case", Industrial Engineering Journal, Vol. XIV, No. 6, June 1985.
 152. G.D. Sardana and **Prem Vrat**, "Measurement of Plant Productivity : A Goal Programming Approach", Industrial Engineering Journal, Vol. XIV, No. 9, pp. 5-18, September 1985.
 153. **Prem Vrat**, "Industrial Engineering Education and Research in India: An Appraisal and Some Suggestions", Industrial Engineering Journal, Vol. XIV, No. 4, (Special Issue), April 1985.

154. Rakesh Gupta and **Prem Vrat**, "EOQ for Perishable Product with Quantity Discounts", Udyog Pragati, Vol. IX, No. 4, pp 3-7, 1985.
155. Sushil K., Agrawal and **Prem Vrat**, "Waste Management: A Systems Approach", Industrial Engineering Journal, Vol.XIV, No.11, pp. 19-22, 1985.
156. Rakesh Gupta and **Prem Vrat**, "Inventory Management Development: A Review with Special Reference to Perishability, Inflation and Stock Dependent Consumption Rate", Towards Continuing Education, Vol. 6, pp. 232-237, 1985.
157. Sushil and **Prem Vrat**, "Waste Management: A Comprehensive Review", Productivity, Vol.XXVII, No.2, pp.123-128, 1986.
158. G.D.Sardana and **Prem Vrat**, "Productivity Measurement of an Educational Institution through P-O-P Approach: A Case Study", Industrial Engineering Journal, Vol.XVI, No.3, pp.2-20, March 1987. (Won best paper medal of IIIE).
159. I.K.Khanna, N.Singh and **Prem Vrat**, "A Transportation Policy Planning and Analysis Model for Air Pollution Control", Indian Journal of Air Pollution Control, Vol.7, No.3, pp.124-127.
160. G.Padmanabhan and **Prem Vrat**, "Inventory Models for Stock Dependent Selling Rate", Udyog Pragati, Vol. XI, No. 4, pp. 9-13, October-December 1987.
161. G.Padmanabhan and **Prem Vrat**, "An EOQ Model for Perishable Items under Inflationary Environment", Industrial Engineering Journal, Vol. XVIII, No. 5, pp. 1-7, May 1989.
162. G.D Sardana and **Prem Vrat**, "Productivity Measurement in a Multi Product Multiplant Engineering Company", Productivity, Vol. XXIX, No. 4, pp. 387-397, January – March 1989.
163. G.D.Sardana and **Prem Vrat**, "Productivity Management: A Programme for Implementation", PRODUCTIVITY, Vol 32, No.1, April-June 1991, pp.93-100.
164. A.K.Vij, **Prem Vrat** and Sushil, "Technological Change in multisector Modelling", Journal of Scientific and Industrial Research (spl. Issue), Vol. 51(3), 1992, pp.266-272.
165. **Prem Vrat**, "Logistics in Developing Countries: Problems and challenges", PRODUCTIVITY, 33(2), July-Sept.1992, pp.263-269.
166. Narendra Kumar, **Prem Vrat** and Sushil, "Decision Support System for Unit Exchange Spares Management on Indian Railways", Rail Transport Journal, Vol. II (2), April-June 1993, pp.51-58.
167. **Prem Vrat**, S. Mittal and K.Tyagi, "Implementation of Just-in-Time in Indian Environment: A Delphi Study" Productivity, Vol.34, No.2, July-Sept.1993, pp.251-256.

168. G.Padamanabhan and **Prem Vrat**, "EOQ Models for Perishable Item under Stock Dependent Selling Rate", IAPQR Transactions, Vol.19, No.1, 1994.
169. Garg, S., **Vrat, P.** and Kanda, A. (1994), "Work Culture in JIT Environment", Productivity, Vol. 35, No.3, pp 663 – 466.
170. B.S.Sahay, **Prem Vrat** and P.K. Jain, "Long Term Fertilizer Demand, Production and Imports in India", A System Dynamics Approach, FAI Journal, Dec. 1995. (Won Sri Ram Award)
171. S.K. Agrawal and **Prem Vrat**, "TQM in Indian Setting", Indian Management, Vol.34, No.5, pp. 43 – 51, June, 1995.
172. S.K. Agrawal and **Prem Vrat**, "Quality Management Self-Assessment – Approach for Quality Improvement" Productivity, Vol. 37, No. 2, pp. 239-244, New Delhi, July – September, 1996.
173. S.K. Agrawal and **Prem Vrat**, "ISO: 9000 Certification and TQM Movement: Some thoughts on Indian Quality Initiative", Productivity Promotion Journal, Vol. 1, No.2, pp 78-90, Delhi Productivity Council, New Delhi, Oct-Dec, 1996.
174. B.S.Sahay, **Prem Vrat** and P.K.Jain, "Policy Modelling for Fertilizer Subsidy in India Using System Dynamics", Productivity, Vol. 37, No.4, January-March, 1997.
175. B.S.Sahay, **Prem Vrat** and P.K.Jain, "Corporate Growth Strategies for an Indian Fertilizer Company", Industrial Engineering Journal, April 1998. (Won Best Case Study Medal).
176. Suresh Garg, **Prem Vrat** and Arun Kanda, "Issues and Problems in Implementation of JIT Manufacturing" Productivity, Vol. 40, No.2, July - Sept. 1999, pp. 279 –285.
177. Khanna V.K., **Prem Vrat** and Sahay B. S., "TQM Practices in Indian Automobile Sector: A Survey" Productivity" Vol.43, No.3, pp. 407-417, 2002.
178. Khanna, V. K., **Vrat, P.**, Shankar, R., and Sahay, B.S., 2002, "Six sigma in Indian automobile sector", Productivity, Vol. 43(2), July-Sept. 2002. Pp.208-214.
179. Khanna, V. K., **Vrat, P.**, and Sahay, B. S., 2003, "Status of TQM Practices in Indian Automobile Sector after liberalization: A Survey", Industrial Engg. Journal. Vol. XXXIII, No.3, pp. 3-12, 2004.
180. Mishra Somnath, Deshmukh S.G. and **Prem Vrat** "Technological Forecasting Applications: Framework and Case Study on Combat Vehicles", Defence Science Journal, Vol. 53, No.4, Oct. 2003, pp. 371-391.
181. **Prem Vrat**, "Quality Assurance in Technical Education Recent Trends & Challenges Ahead", Indian Journal of Tech. Education, Vol. 26, No.2, April 2003, pp.12-14.

182. Rupesh Kumar Pati, **Prem Vrat** and Pradeep Kumar, "Reverse logistics modeling in the Paper Industry", PRODUCTIVITY, Vol. 44, No. 3, Oct-Dec. 2003, pp. 443-449.
183. Rupesh Kumar Pati, **Prem Vrat** and Pradeep Kumar, "Decision making model for Economical wastepaper collection", Accepted in PRODUCTIVITY.
184. Balan, S., **Prem Vrat** and Pradeep Kumar, "Developing causal relationship for a supply chain management index for the Indian Automobile Sector", Accepted in PRODUCTIVITY, Vol. 45, No.3, Oct-Dec 2004, pp.413-421.
185. Kumar M., **Prem Vrat** and Ravi Shankar – "Vendor Selection in Supply Chain Using the Hybrid Approach AHP and Goal Programming: A Case Study". ICFAI Journal of operations Management Vol. III(2), 2006, pp.-20-34.
186. Balan S., **Prem Vrat** and Pradeep Kumar – "Dynamic Analysis of Bullwhip Effect in Global Supply Chain" Accepted in Productivity.
187. **Prem Vrat** – "Role of Technical Education in Emerging Indian Society : Opportunities and Challenges"; RITES Journal : Research, Review and Retrospectives Vol. 11, Issue 2, July 2009, pp.-9.1-9.10

International Conferences:

188. **Prem Vrat** and P.K. Purang, "Inventory Control of Items Having Erratic Pattern of Demand and Generalized Replenishment Times", Proc. of 1st World Congress on Productivity Sciences, December 1973 Section on "Potentials of Materials Management", Vol.1, pp.1-19.
189. **Prem Vrat**, "A Quasi- Analytical Modal for Optimization of Rotating Stock with Erratic Pattern of Demand". Proc. of Indo-British Conference on Engineering Production, December 1976, pp. A-61-72.
190. U. Kumar and **Prem Vrat**, "Optimum Batch Size for Multistage Production System", Proc. of IBCEP, December 1976, pp. A-35-42.
191. **Prem Vrat**, "Country Waste Management in India: The Need for Organized Systems Approach", paper presented at APO Symp. on Waste Management, Tokyo, September 1979.
192. **Prem Vrat** and A. Subash Babu, "Optimal Policies for Spares in a Multi - Echelon Repair-Inventory System", Proc. of 1st International Conf. on Inventories, Budapest, Hungary, September 1980, pp. 597.
193. A.K. Gupta and **Prem Vrat**, "Simulation Model for Optimal Frequency of Buses on a Route: A Case Study", Proc. of International Conf. on Transportation, Vol. II, pp. ps 13-24, November 1980. Also published in Scientific Management of Transport Systems, North Holland, pp. 225-234, 1981.

194. K.S. Shah, N. Singh and **Prem Vrat**, "A Location -Allocation Study in a Road Transport Corporation", Proc. of International Conf. on Transportation, Vol. II, pp. LT 31-42, November 1980. Also published in Scientific Management of Transport Systems, North Holland, pp. 185-193, 1981.
195. S.K. Agrawal and **Prem Vrat**, "Systems Modelling of Waste Management in Agriculture Sector", International Conference on Systems Theory and Applications, Ludhiana, December 17-19, 1981, pp. C43-C50.
196. S.K.Agrawal and **Prem Vrat**, "Productivity and Economic Growth Scenarios through Waste Management: A Simulation Model", Proc. of International Productivity Congress, Bombay, January 1983.
197. I.K Khanna, N. Singh and **Prem Vrat**, "System Dynamics and Urban Transportation Planning and Policy Analysis", Proc. of International System Dynamics Conference, Keystone, Colorado, USA, Vol. I, PP. 453- 562, July 2-5, 1985.
198. **Prem Vrat** and P.S.Kharola, "A Joint Optimization Model for Inventory and Manpower Planning for Recoverable Items", Proc. of ASME Conference on Computers in Engineering, Boston, USA, August 4-8, 1985.
199. **Prem Vrat**, "Materials Management in the Context of Highly Automated Production Lines", Paper presented at 3rd Asia Pacific Regional Purchasing and Materials Management Conference (SEAPCOMM), New Delhi, Tech. Session No. 6, Feb.19, 1985.
200. I. K. Khanna, N. Singh and **Prem Vrat**, "Some Studies in Policy Design and Analysis of Delhi's Urban Passenger Transportation System", Proc. of International Conf. On Transportation System Studies, Tata McGraw Hill, December 1986, pp.602-608.
201. I. K. Khanna, **Prem Vrat** and N.Singh, "Transportation System Management and its Effects on Delhi's Passenger Transportation System Behavior", Proc. of International Conf. on System Dynamics, Varanasi, January 15-17, 1987, pp.1-9.
202. G.D. Sardana and **Prem Vrat**, "A Model for Productivity Measurement in a Multi Product Organization Using Goal Programming and Multiattribute Utility Theory", Proc. of International Conference on Productivity Research, Miami, USA, Paper No.31, Scientific Elsevier, Amsterdam, February.1997.
203. **Prem Vrat** and G.Padmanabhan, "An Inventory Model under Inflation for Stock Dependent Consumption Rate Items", paper presented at 5th International Conference on Inventories, Budapest, Hungary, August 1988.
204. **Prem Vrat** and G.Padmanabhan, "An Inventory Model for Perishable Items Having Stock Dependent Consumption Rate under Varying Unit Cost", paper presented at 5th International Conf. On Inventories, Budapest, Hungary, August 1988.
205. G.D.Sardana and **Prem Vrat**, "Productivity Measurement of Applied Industrial Research in an Organization: A Conceptual Framework", paper presented at 2nd International Conf. On Productivity Research (ICPR'89), Miami, USA, February 1989. Edited book of proceedings.

206. J.P.Saxena, **Prem Vrat** and Sushil, "Energy Conservation in Indian Cement Industry-An Application of Programme Planning Linkage Approach", 9th Intl. Conference on Environmental Planning & Control, Miami, USA, December 1989.
207. J.P.Saxena, Sushil and **Prem Vrat**, "Development of Policy Guidelines for Energy Conservation in Indian Cement Industry – Joint Application of Delphic Hierarchy process (DHP) and Fuzzy Set Methodology", Proceedings MCDM Conference, AIT, Bangkok, December 1989, pp.645-660.
208. **Prem Vrat** and G.Padmanabhan, "An Inventory Model under Inflation for Stock Dependent Consumption Rate Items", Proceedings Intl. Symposium on Inventories, August 1988 Also as a chapter in a book edited by Attila Chikan on "Inventories Theory and Applications", Elsevier Science Publishers, Amsterdam, 1990.
209. A Noorul Haq, Arun Kanda and **Prem Vrat**, "Modelling and Analysis of Production-Inventory-Distribution Systems Considering Recycling at Production Stages", 2nd Intl. Conference on Large Scale Systems in Developing Countries, Benin, Nigeria, July 1989.
210. Noorul Haq, Arun Kanda and **Prem Vrat**, "Multiobjective Considerations in Production-Inventory-Distribution Systems with Multiple Modes of Transfer", Proc. IXth MCDM Conference at Fairfax, Virginia, August 5-8, 1990.
211. A. Noorul Haq, Arun Kanda and **Prem Vrat**, "An Integrated Production Inventory Distribution System as a Network with Management", Hong Kong, June 11-13, 1990.
212. Narendra Kumar, Sushil and **Prem Vrat**, "A Framework for Organizational DSS for Maintenance of Diesel Locomotives in Indian Railway", Paper presented at IFORS/SPC-I Conference on DSS, Bruges, Belgium, Feb.26-29;1991,
213. Prem Vrat and Sunil Kakkar, "A Cost Model for Optimal Focusing of Manufacturing Facilities", Proc. of IXth International Conference of Production Research, Hefei, China; Aug. 19-23, 1991 (eds. Li Ming et al), pp.433-436, Taylor-Francis/CM Press.
214. A.K.Vij, **Prem Vrat** and Sushil, "Modelling Diffusion of Energy Technologies: A System Dynamics Approach", Proc. of International Conference on Systems Dynamics, Bangkok, Aug.27-30, 1991, pp.636-645 (Eds. Saeed et al).
215. Saroj Koul and **Prem Vrat**, "A System Dynamics Based Model for Evaluating and Performance of an Engineering Firm", Proc. of International Conference on Systems Dynamics, Bangkok, Aug.27-30, 1991, pp.272-280 (eds. Saeed et al).
216. **Prem Vrat** and Ihsan Ahmad, "Productivity Measurement and Improvement in a Manufacturing System: A Case Study", Proc. of International Conference on Productivity, Aug. 14-16, 1991, Singapore.

217. **Prem Vrat**, "Logistics in Developing Countries: Problems and Challenges", Paper presented at IXth International Logistics Congress, Nov.6-8, 1991, Utrecht, The Netherlands.
218. Noorul Haq, **Prem Vrat** and Arun Kanda, "A Evaluation of production Planning Strategies in Integrated Production-Inventory Systems" Paper presented at Indo-US Workshop on CAD/CAM/ROBOTICS, IIT Delhi, Dec.18-21,1991.
219. Ali A Majeed Ali and **Prem Vrat**, "Genetic algorithm for cellular manufacturing system design", Proc. INCARF'96, pp. 71-78, 1996.
220. Ali A Majeed Ali and **Prem Vrat**, "Cellular Manufacturing System: Review and Algorithm", Proc. Int. Conf. For Advanced in Mechanical and Industrial Engineering, pp 805-813, 1996.
221. Shanker R. and **Vrat P.**, "Design of Cellular Manufacturing System: A Chance Constrained Programming Approach", In: CAD, Cam, Automation, Robotics and Factories of Future, Ed.: A.Mubeen & S.A.H. Rizvi, (New Delhi: Narosa Publishing House), 110-116, 1996.
222. Shanker R. and **Vrat P.**, "A Frame Work for the Evaluation of Cellular Manufacturing Design", In CAD, CAM, Automation, Robotics and Factories of Future, Ed.: A.Mubeen & S.A.H. Rizvi, (New Delhi: Narosa Publishing House), 117-124, 1996.
223. S.K.Agrawal, **Prem Vrat**, and S. Karunes, "Quality Grid: A Systematic Approach for Evaluation and Correcting Business Direction", International Conference on Management of Technology, pp. 809-817, IIT Delhi, 1997.
224. Shanker R. and **Vrat P.**, "A Stochastic Programming Approach to Cellular Manufacturing System Design", Proceeding of International Conference on Advances in Mechanical and Industrial Engineering, Roorkee, Ajay Printers & Publishers), 815-821, 1997.
225. Shanker R. and **Vrat P.**, "Design of Cellular Manufacturing System with Interval Objective Function", Presented in Eighth Annual Convention of Production and Operation Management Society, Florida, Miami Beach, USA, April, 12-15, 1997.
226. Shanker R. and **Vrat P.**, "Management of Uncertainty in Cellular Manufacturing System Design and Implementation, In: Globalisation, Flexibility and Competitiveness", Proceedings of International Conference on Management of Technology, Ed.: Sushil et al., (New Delhi: Dept. of Management Studies, IIT Delhi), 464-476, (1997).
227. Garg, S., **Vrat, P.** and Kanda, A. (1997), "WIP vs JIT : A Trade off in a Single Stage Manufacturing System", Proceedings of International Conference on Advances in Mechanical and Industrial Engineering, University of Roorkee, Roorkee, Ajay Printers & Publishers, pp 987-996.
228. **Prem Vrat**, "Technical and Vocational Education System in India: An Overview", Paper Presented as a Mission Leader on Technical & Vocational Education System in Japan, Sept 1997.

229. Ali A Majeed Ali and **Prem Vrat**, "Manufacturing cell design : A Cascade correlation neural network" Accepted for presentation in the second International Conf. on Engineering design and automation, Aston Wailea, Maui, Hawaii, August 9-12, 1998.
230. Ali A Majeed Ali and **Prem Vrat**, "Manufacturing cell formation: A neural network approach", Accepted for presentation in the second Symposium on Intelligent Manufacturing System, August 6-7, 1998, Sarkarya, Turkey.
231. Ali A Majeed Ali and **Prem Vrat**, "Comparative evaluation of alternative manufacturing systems", Accepted for presentation in the 24th International Conf. on Computer and Industrial Engineering, Brunel University, September, 9-11, 1998, England.
232. Ali A Majeed Ali and **Prem Vrat**, "Parts – Tools grouping in cellular manufacturing system Using Genetic algorithm", Accepted for presentation in the IEEE International conf. on Intelligent Engineering Systems (INES'98) Vienna, September, 17-19, 1998, Austria.
233. Ali A Majeed Ali and **Prem Vrat**, "Design and planning of CMS: A multiobjective modelling Using FSQP". Accepted for presentation in the IEEE International Conf. on Systems, Man and Cybernetics, San Diego, October, 11-14, 1998, USA.
234. **Prem Vrat** and Shishir Kumar, "TQM Scenario in Indian Industry: A System Dynamics Study", Proc. of 6th World Congress on Total Quality, IOD/Excel Books; Feb.98, pp.233-239.
235. **Prem Vrat**, "Supply Chains Management in India; Problems and Challenges", Proc. of Intl. Conf. on Supply Chain, Nov.'98, Macmillan New Delhi, pp. 10-24.
236. Babu Lal, **Prem Vrat** and Sushil, "Application of Knowledge Management for Effective Supply Chain Management in a Dynamic Business Environment", Proc. of Intl. Conf. on Supply Chain Management, Nov.1998, MDI, Macmillan Pub. House, pp. 1040 – 1050.
237. Garg, S., **Vrat, P.** and Kanda, A. (1999), "Characterization of Attributes for Purchasing in JIT Environment", International Conference on Supply Chain Management, Management Development Institute, Gurgaon, Macmillan Publishing House, pp. 556-572.
238. Ravi Shanker and **Prem Vrat**, "Cellular Manufacturing Systems Design : An μ -cut fuzzy Programming Approach" Proc. of POMS-99; International Conference on Operations Management for Global Economy (Eds. Kanda et al) Phoenix Pub.House; ND, pp. 481-487, Dec.'99.
239. Ali A. Majeed and **Prem Vrat**, "Manufacturing cell formation: A Neural Network Approach" Proc. of POMS-99; International Conference on Operations Management for Global Economy (Eds. Kanda et al) Phoenix Pub. House; ND, pp. 565-568, Dec.'99.
240. Suresh Garg, **Prem Vrat** and Arun Kanda, "Equipment Selection in JIT Environment: A Multicriteria Framework" Proc. of POMS-99; International

Conference on Operations Management for Global Economy (Eds. Kanda et al) Phoenix Pub. House; ND, pp. 633-639, Dec.'99.

241. Babu Lal, **Prem Vrat** and Sushil, "Knowledge Networks for Effective R&D Management - In Indian Engineering Industries" Proc. GLOGIFT 2000. New Business Paradigm (Ed. Sushil et al), Thomson Learning Asia, 659-671, 2001.
242. Kumar, M., **Vrat, P.** and Shankar, R., 2002, "A multi-objective interval programming approach for vendor selection problem in a supply chain", In the proceedings of Intl. Conf. on "e-manufacturing: an emerging need for 21st century world class enterprises", 17-19 Nov. 2002, Bhopal, India, pp. 101-106. (Eds. Daga et al. Phoenix Pub. House, New Delhi).
243. Shankar, R., and **Vrat, P.**, 2000, "Automation using AGV: Some Issues", In Proceedings of International Conference of Material Handling, Indian Institute of Plant Engineers, New Delhi, pp. 319-325.
244. Solimanpour, M., **Vrat, P.**, and Shankar, R., "Design of cellular manufacturing systems: A goal programming approach", Proc. International Conference on CAD, CAM, Robotics and Autonomous Factories, New Delhi. Aug. 2003, pp. 1-8.
245. Khanna, V. K., **Vrat, P.**, Shankar, R., and Sahay, B. S., 2003, "Comparative Usage of Quality Tools in Indian Automobile Sector: A Survey", Proceedings of the 8th International Conference on ISO 9000 and TQM at the Delta Centre Ville, Montreal, Canada (23rd - 25th April, 2003).
246. Khanna, V. K., **Vrat, P.**, and Sahay, B. S., 2002, "TQM Practices in Indian Automobile Sector at Cross Road: A Survey, in: Change Management", Proceedings of the 7th International Conference on ISO 9000 and TQM, Ed. Ho, S.K.M. and Dalrymple, J.F., (RMIT University Melbourne, Australia), pp.243-244.
247. Mishra Somnath, Deshmukh S.G. and **Prem Vrat**, "Technological Forecasting: An Aid to Path Determination and Implementation in Defence", Management of R&D in the New Millennium" (Eds: Banwat et al); Proc. Of Intl. Conf. On Management of R&D (ICMARD' 2003), pp.216-226, Mack Millan India Ltd.
248. Verma P., Deshmukh S.G., and **Vrat P.**, 2002, "Emissions in Transportation Sector: Impact of IT and Telecommunications", Proc. of International Conference On e-manufacturing, Bhopal, pp.413-421.
249. Seth N., Deshmukh S.G., **Vrat P.**, 2002, "IT in Supply Chain : Opportunities and Challenges", Proc. of International Conf. on e-manufacturing an emerging need for 21st century, Bhopal, pp. 56-61.
250. **Prem Vrat**, "OR in Supply Chain Management", Proc. of 6th APORS Conference, Dec. 8-11, 2003, New Delhi. Invited paper delivered in plenary session, pp.1-11.
251. Kumar M., **Vrat Prem** and Shankar R., 2004, "Vendor's Quota Allocation in a Supply Chain using Multiobjective Stochastic Model in Operation Research and its Applications : Recent Trends, eds. M.R. Rao and M.C.

Puri (Proc. of APORS-2003), Vol.II, pp. 347-353, Allied Publishers, New Delhi.

252. Balan, S., **Prem Vrat** and Pradeep Kumar, "Global supply chain management: Challenges and Opportunities", Proc. of the 33rd International Conference on Computers & Industrial Engineering, Korea, March 25-27, 2004.
253. Balan, S., **Prem Vrat** and Pradeep Kumar, "Reducing Bullwhip Effect Fuzzy logic approach", Proc. of International conference on logistics and supply chain management, P.S.G. College of Tech, Coimbatore, 3rd Aug.2004.
254. Balan, S., **Prem Vrat** and Pradeep Kumar, "Total Quality in Supply Chain Management ", Proc. of International conference on supply chain management, NITIE, Mumbai.
255. Balan, S., **Prem Vrat** and Pradeep Kumar, "Information distortion in a supply chain and its mitigation of a MIMO model using ANN", International conference on soft computing manufacturing systems, KIIT, (Proc. of ICCEMS-2004), Allied Publishers, New Delhi. pp.311-320
256. S.Balan, **Prem Vrat** and Pradeep Kumar, Analyzing Global Supply Chain using System Dynamics Simulation model, accepted in 14th ISME International Conference, DCE, New Delhi, 2005.
257. S.Balan, **Prem Vrat** and Pradeep Kumar, (2005), Risk Analysis in a Global Supply Chain Using System Dynamics Approach, International Conference, LSCM 2006, Hong Kong, Jan 05-07, 2006
258. S.Balan, **Prem Vrat** and Pradeep Kumar, (2006), Bullwhip Effect in Global Supply Chain, International conference on Logistics and Supply Chain Management, Accepted for ILSCM 2006, P.S.G College of Technology, Coimbatore
259. S.Balan, **Prem Vrat** and Pradeep Kumar, A Dynamic Simulation Model for the Long Term Analysis of the Indian Automotive Industry, 18th POMS Conference, May 4 to May 7, 2007, Dallas, Texas, U.S.A.
260. Solimanpour M., **Vrat P.**, Shankar R. – "A New Heuristic for minimizing makespan of flow shop scheduling problem" Proc. of International Conference on Group Tech./Cellular Manufacturing, Groningen, The Netherlands, July 3-5, 2006, pp. 130-134.
261. Pati R.K. and **Prem Vrat** 'Optimal Blending Model for paper manufacturing with competing input materials', 18th POMS Conference Proceedings, May 4-7, 2007, Dallas, Texas, USA.
262. Anand S., Talyan V, Dahiya R.P. and **Prem Vrat**- Assessment of Nitrous Oxide Emission from fertilizer application in India, Proc. of 2nd Joint International Conference on 'Sustainable Energy and Environment (SEE-2006)', 21-23, Nov. 2006, Bangkok, Thailand, pp. 552-557.
263. Anand S. Talyan V, Dahiya R.P. and **Prem Vrat** – Nitrous Oxide and Methane Emissions from livestock. Proc. of International Conference on

National Conferences:

264. **Prem Vrat** and K.C Sahu, "Optimization of Spares Inventory in a Closed System with Variable Input and Output", Proc. of 1st Annual Convention of ORSI, December 1968. Abstract also published in OPSEARCH, Vol. 6, No. 1, 1969.
265. **Prem Vrat**, "Application of Productivity Techniques for Systematic Maintenance Programme", Proc. of 2nd Technological Seminar, Textile Association of India (Delhi Branch), February 1970.
266. **Prem Vrat** and B.K.Ahuja, "An Inventory Theoretic Approach for Machine Interference Problem with Generalized Repair Time Distribution", paper presented at 3rd Annual Convention of ORSI, December 1970. Abstract also published in OPSEARCH, Vol. 8, No. 1, 1971.
267. **Prem Vrat** and B.M. Joshi, "Optimal Loom Allocation with Ancillary Work, Priority and Product Mix for Variable Performance Levels in a Textile Mill", Proc. of 4th Annual Convention of ORSI, March 1972. Abstract also published in OPSEARCH, Vol. 9, No. 1, 1972.
268. **Prem Vrat**, "A General Model for Inventory Reorder Points under Stochastically Varying Demand and Replenishment Times", Proc. of National Convention, and All India Conference IIIE, February 1972.
269. **Prem Vrat**, "An Inventory Model for Rotables under Risk and Uncertainty", paper presented at 5th Annual Convention of ORSI, December 1972. Abstract also published in OPSEARCH, Vol. 10, No. 1, 1973.
270. Mahavir Singh and **Prem Vrat**, "Job Shop Scheduling Problem - A Case Study", paper presented at 5th Annual Convention of ORSI, December 1972. Abstract also published in OPSEARCH, Vol. 10, No. 1, 1973.
271. U.Kumar and **Prem Vrat**, "Effective of Rejection Allowance on a Single Item Stochastic Production-Inventory System", paper presented at 8th Annual Convention of ORSI, December 1975. Abstract published in OPSEARCH, January 1976.
272. **Prem Vrat** and M.P. Tyagi, "An Approach for MIS for Effective Maintenance of Manufacturing Facilities", Proc. of 1st ISME Conf., December 1977, pp. PI 1-11.
273. A.Subash Babu and **Prem Vrat**, "A Inventory Model for a Two -Level Repair System", Proc. of 1st ISME Conf., December 1977, pp. PI 1-12.
274. Subash Babu and **Prem Vrat**, "A Two - Level Inventory System of Spares in a Transport Corp. - A Diagnostics Study", Proc. of 10th ORSI Convention, December 1977. Abstract also published in OPSEARCH, January-March 1978.

275. A.Subash Babu and **Prem Vrat**, "Effect of through - put Time on Optimum Spare Stock Level in a Two -Level Inventory System", Proc. of 21st National Convention IIIIE, January 1978.
276. **Prem Vrat** and R.S.Solanki, "Economically Optimal Design of Sampling Plan : A Case Study", Integrated Management, Vol. XIII, No. 2, pp. 29-32, February 1978.
277. **Prem Vrat** and S. Jain, "Physical Distribution Planning of Non-Cooking Coal: An O.R. Study", Proc. of 5th National System Conf., September 1978, pt. I, pp. 175-179.
278. U. Kumar and **Prem Vrat**, "Optimization of Single Item Three Stage Stochastic Production - Inventory System", Proc. of 11th ORSI Conf., Bangalore, December 1978. Abstract also published in OPSEARCH, December 1978.
279. A Subash Babu and **Prem Vrat**, "Inventory Control of Expensive Recoverable Spares in Two-Level Inventory System of a Transport Corp.: A Computer Simulation Approach", Proc. of 11th ORSI Convention, December 1978. Abstract also published in OPSEARCH, December 1978.
280. A Subash Babu and **Prem Vrat**, "Simulation Study for Optimal Inventory of Coal in Thermal Power Station", Proc. of National Symposium of Industrial System Information and Control, Kurukshetra, January 1979, pp 5-9.
281. A Subash Babu and **Prem Vrat**, "Evaluation of Optimal Inventory Policy for Coal in a Thermal Station by Flow Control: An Application of Simulation", Proc. of 21st IIIIE Convention, Bombay, January 1979, pp. 29-34.
282. D. K. Banwet and **Prem Vrat**, "Materials Handling Cost in Facility Systems Design: Some Observations", Proc. of Regional Seminar on Materials Handling, Institute of Engineers (India), December 1979, Lucknow, pp. 18.
283. D. K. Banwet and **Prem Vrat**, "A String Analogue Model for Facility Location with Forbidden Regions", Proc. of 3rd ISME Conf., Wiley Eastern Ltd., February 1980, pp. 139-144.
284. Upendra Kumar and **Prem Vrat**, "Optimization of Single Item Multistage Production System", Proc, of 3rd ISME Conf., Wiley Eastern Ltd., pp. 117-119, February 1980.
285. A. Subash Babu and **Prem Vrat**, "A Simulation Model for Multi-Echelon Inventory Systems with Cannibalization and Transshipment", Proc. of 3rd ISME Conf., Wiley Easterb Ltd., pp. 125-131, February 1980.
286. **Prem Vrat**, "Industrial Capacity Utilization in Indian Industries -A Perspective", Proc. of Symp. On Cap., Utilization, SIC U/I, pp. 1-16, February 1980.
287. **Prem Vrat**, "Coverage Analysis for Inventory Management", Proc. of Seminar on Materials Admn., IAMM, pp. 16-24, March 1980.

288. N. Singh, **Prem Vrat** and K.S. Shah, "Inventory Control of Recoverable Spares in a Two-Echelon Stores System", Proc. of 22nd National Convention of IIIE, pp. 1-13, January 1980.
289. D.K. Banwet and **Prem Vrat**, "Facility Location-Allocation Planning: A Strategy for Higher Productivity", Proc. of 23rd National Convention (IIIE), Madras, January 23-25, 1981, pp. D93 - 101.
290. D.K. Banwet and **Prem Vrat**, "A Direct Search Procedure for a Class of Single Facility Mini-Sum Location Problems", Proc. Operational Research Society of India, 13th Annual Convention, Coimbatore, February 19-21, 1981. Abstracted in OPSEARCH, Vol. 18, No. 1, 1981.
291. D.K. Banwet and **Prem Vrat**, "An Approach to solve Single Facility Multiple Criteria Rectilinear Location Problems", Proc. Operational Research Society of India, 13th Annual Convention, Coimbatore, February 19-21, 1981. Also abstracted in OPSEARCH, Vol. 18, No. 1, pp. 40, 1981.
292. N. Singh and **Prem Vrat**, "A Three-Echelon Location-Allocation Model for Recoverables", Proc. of National Symposium on Transport System Studies, I.I.T. Delhi, December 4-6, 1981.
293. A.K. Gupta and **Prem Vrat**, "Transit Service Evaluation -A Case ", Proc. of National Symposium on Transport System Studies, I.I.T. Delhi, December 4-6, 1981, pp. A63-A67.
294. S.K. Agrawal and **Prem Vrat**, "Systems Analysis of Waste Management: A Multi -Sectoral National Economy Model", 4th ISME Conf. on Mech. Engg., Roorkee, October 19-20, 1981, pp. 343-348.
295. D. K. Banwet and **Prem Vrat**, "An Efficient Algorithm for Some Multi- facility Mini-Mix Location Problems", Proc. of 4th ISME Conf. on Mech. Engg., Roorkee, October 19-20, 1981, pp. 321.
296. N. Singh and **Prem Vrat**, "A Two-Echelon Model for Repair Inventory System", Proc. of 4th ISME Conf. on Mechanical Engg., Roorkee, October 19-20, 1981, pp. 333-336.
297. S. K. Agrawal and **Prem Vrat**, "Waste Management in Energy Sector", Proc. of 24th National Convention of IIIE, February 1982, pp. 40-49.
298. D.K. Banwet, R.Mithe and **Prem Vrat**, "An Electrical Analogue Model for Multifacility Euclidean Location Problem", Proc. of 24th National Convention of IIIE, February 1982, pp.109-119.
299. Rajesh Chadha and **Prem Vrat**, "The Consumption Pattern of Steel in India: A Statistical analysis", Proc. of 24th National Convention of IIIE, February 1982, pp.138-147.
300. S. K. Agrawal, and **Prem Vrat**, "Waste Management: Towards Sustained Growth", Proc. of 15th Annual ORSI Convention, Kharagpur, 1982.
301. K. Ravindranath, **Prem Vrat** and N.Singh, "On solving Single and Multifacility Location Problems with Mixed Mode of Travel by HAP", Proc. of 15th Annual ORSI Convention, Kharagpur, 1982.

302. Rajesh Chadha and **Prem Vrat**, "A Translog Model of Energy Substitution in Indian steel Industries", Proc. of 15th Annual ORSI Convention, Kharagpur, 1982.
303. **Prem Vrat**, "Application of O.R. in Physical Distribution System Planning: Some Case Studies", Proc. Of National Workshop on Productivity in Public Distribution Systems, NPC, Vigyan Bhawan, August 10-11, 1982.
304. I.K. Khanna, **Prem Vrat** and N.Singh, "System Dynamics Approach to Urban Transportation Planning: An Exploratory Study", Proc. of One Day Symposium on Future Metropolitan Land-Use Transport Structure of Delhi, I.I.T. Delhi, December 12, 1983, pp. 1-14, paper 4, Tech. Session II.
305. G.D. Sardana and **Prem Vrat**, "An MBO Based Mathematical Model for Measuring Plant Productivity", Proc. All India Seminar, Inst. of Engineers (India), Calcutta, April 1983.
306. S.K.Agrawal and **Prem Vrat**, "Productivity through Waste Reduction: A Systematic Approach", Proc. of XXVIth National Convention of IIIE, Bangalore, Jan. 1984, pp. 1-13.
307. G.D. Sardana and **Prem Vrat**, "An Integrated Productivity Index for a Production System: A P-O-P Approach", Proc. of XXVIth Annual Convention of IIIE, Bangalore, Jan. 1984, pp. 1-13.
308. D.K. Banwet and **Prem Vrat**, "On Solving a Class of Multiple Facility Minimum Location Problems with a Direct Search", Symposium on Decision Making & O.R., Delhi University, pp. IV 64-75, March 1981. Also included in O.R. in Managerial Systems, S.P. Agrawal (ed.), Academic Pub., New Delhi, pp.144-157, 1984.
309. A.B. Khan, **Prem Vrat** and N. Singh, "A Methodology for Relating MIS to Organization Profile Using Contingency Approach", Proc. Of XVIth ORSI Convention, IIT Kanpur, Vol. 4, pp. 1-28, December 1983. Abstract also published in OPSEARCH, Vol. 21, No. 1, March 1984.
310. D.K.Banwet and **Prem Vrat**, "A Direct Search Procedure for Facility Location in Presence of Forbidden Regions", Proc. of XVIth ORSI Convention, Vol. 21, No. 1, March 1984.
311. K. Ravindranath, N.Singh and **Prem Vrat**, "A Model for Multi-Facility Education Location Problem in the Presence of a Rectangular Forbidden Region", Proc. of XVIth ORSI Convention, Vol. 3, pp. 1-26, December 1983. Abstracted in OPSEARCH, Vol. 21, No. 1, March 1984.
312. Sushil K. Agrawal and **Prem Vrat**, "Unemployment and Waste Management: A Causal Model", Proc. of XVIIth ORSI Convention, December 11-13, 1984,
313. I.K Khanna, N. Singh and **Prem Vrat**, "System Dynamics Approach to Urban Transportation Planning and Policy Design", Proc. of National Seminar on System Dynamics, I.I.T. Kharagpur, December 14-16, 1984.
314. K. Ravindranath, N. Singh and **Prem Vrat**, "A Bi-Criteria Multi-Facility Education Location Problem in the Presence of a Rectangular Barrier", paper presented at VIth ISME Conference, New Delhi, January 1985.

315. G.D. Sardana and **Prem Vrat**, "Productivity Measurement of a Marketing System: A P-O-P Approach", Proceedings of XXVIIth National Convention of IIIE, Cochin, February 1985.
316. K. Ravindranath, N. Singh and **Prem Vrat**, "A Direct Search Procedure for Location-Allocation Problems in the Presence of a Single Forbidden Region", Proc. of XVIIth Annual ORSI Convention, Ahmedabad, December 11-13, 1984, pp. 1-18. Abstracted in OPSEARCH, vol. 22, No. 1, March 1985.
317. K. Ravindranath, N. Singh and **Prem Vrat**, "A Search Procedure for Constructing Iso-Cost Lines for Constrained Facility Location Problems", Proc. of XVIIth Annual ORSI Convention, December 11-13, 1984, pp. 1-9. Abstracted in OPSEARCH, Vol. 22, No. 1, March 1985.
318. Rakesh Gupta and **Prem Vrat**, "Inventory Model for Stock Dependent Consumption Rate", Proc. of XVIIth ORSI Convention, December 11-13, 1984. Abstract in OPSEARCH, Vol. 22, No. 1, 1985.
319. Rakesh Gupta and **Prem Vrat**, "EOQ of a Perishable Product with Quantity Discounts", Proc. of XVIIth ORSI Convention, December 11-13, 1984. . Abstract in OPSEARCH, Vol. 22, No. 1, 1985.
320. Rakesh Gupta and **Prem Vrat**, "Economic Order Quantity for Stock Dependent Consumption Rate with Backlogging", Proc. of 18th Annual ORSI Convention, Jamshedpur, 1985.
321. Rakesh Gupta and **Prem Vrat**, "A Inventory Model for Perishable Products under Stock Dependent Consumption Rate", Proc. of 18th Annual ORSI Convention, Jamshedpur, 1985.
322. Rajesh Chadha and **Prem Vrat**, "A Simulation Modelling Approach to the Analysis of Indian Steel Industry", Proc. of XXVIIIth IIIE National Convention, Vol. II, pp.237-245, February 1986.
323. G.D.Sardana and **Prem Vrat**, "Productivity Measurement of a Small Undertaking", Proc. of XXVIIIth National Convention, Bombay, Vol.II, pp.79-90, February 1986.
324. A.K.Vij, **Prem Vrat** and Sushil, "Application of System Dynamics to Energy Modelling in the National Economy – A Conceptual Framework", Proc. of 2nd National Conference on System Dynamics, Varanasi, January 15-17, 1987, pp. AKV 1-21.
325. A.K.Vij, Sushil and **Prem Vrat**, "Energy Modelling for the National Economy: A Model Based on Integration of Physical Systems and System Dynamics Approach", Proc.of XIXth ORSI Convention, Vol.1, pp.217-233, December 26-29, 1986. Abstracted in OPSEARCH, Vol.24, No.1, March 1987.
326. Rakesh Gupta and **Prem Vrat**, "Inventory Model with Multi-Items under Constraints System for Stock Dependent Consumption Rate", Proc. of XIXth ORSI Convention, Vol. II, pp.599-609, December 1986. Abstracted in OPSEARCH, Vol. 24, No.1, March 1987.
327. D.K.Banwet and **Prem Vrat**, "A Direct Search Procedure for Solving Single Facility Constrained Weber Location Problems", Proc. of XIXth ORSI

Convention, Vol. II, pp.850-861, December 1986. Abstracted in OPSEARCH Vol.24, No.1, March 1987.

328. **Prem Vrat** and Md.Ikram Ilahee, "Effects of System Delays and Multi-Crafted Repair Skills on Manning Levels for Break-down Maintenance: A Simulation Study", Proc. of XXIXth IIIE National Convention, January 1987, pp.171-182.
329. **Prem Vrat** and Tetsushi Yanagitani, "A Model for Optimal Inventory of Recoverable Spares in a Two-Level Repair Inventory System", paper presented at XIXth ORSI Convention. New Delhi, December 1986. Abstracted in OPSEARCH, Vol. 24, No.1, pp.40, March 1987.
330. Saroj Koul and **Prem Vrat**, "Application of System Dynamics Methodology in Human Resource Management and Development – An Explorative Study in Public Sector Engineering Co.", Proc. of XXXth National Convention of IIIE, Visakhapatnam, April 15-17, 1988.
331. G.Padmanabhan and **Prem Vrat**, "An Inventory Model under Inflation and Quantity Discounts for Stock Dependent Consumption Rate", Proc. of XXXth National Convention of IIIE, Visakhapatnam, April 15-17, 1988.
332. N.Kumar and **Prem Vrat**, "Vendor Rating: A Case Study", Proc. of XXXth National Convention of IIIE, Visakhapatnam, April 15-17, 1988.
333. A Noorul Haq, **Prem Vrat** and Arun Kanda, "Modeling and Analysis of Integrated Production-Distribution-Inventory System", paper presented at Workshop on Modelling and Analysis of Large System, IIM Ahmedabad, August 19, 1988.
334. B.S.Sahay and **Prem Vrat**, "Growth Dynamics of Cement Industry in India", 3rd National System Dynamics Conference, ISM Dhanbad, December 1988.
335. Saroj Koul and **Prem Vrat**, "SD Modeling of Financial System of an Engineering Industry", 3rd National Conference on System Dynamics. ISM Dhanbad, December 1988.
336. A.K.Vij, **Prem Vrat** and Sushil, "Energy Demand and Future Options", Proc. of ONGC Conference on Petroleum – Past, Present and Future, Dec.16, 1988, New Delhi. (Won best paper award of Rs.10, 000).
337. S.Rangaraj and **Prem Vrat**, "A Study in Warehouse Location for Distribution of Textile Products: A Case Study", Proceedings of VIIth ISME Conference, IIT Delhi. February 1990, pp. 434-439.
338. Sunil Kakkar and **Prem Vrat**, "Freight Consolidation in Just-in-Time Environment: A Case Study", Proc. of 23rd Annual Convention of Operational Research Society of India, New Delhi, December 14-16, 1990, pp.51-58.
339. **Prem Vrat** and Pisal Yenradee, "A Comparative Study of Push and Pull Production Planning Strategies in Hard Disk Parts Manufacturing company", Proc. of 3rd ORSI Annual Convention, New Delhi, December 14-16, 1990, pp.140-148.

340. Sunil Kakkar and **Prem Vrat**, "Vendor Reliability in Just-in-Time Environment: A System Dynamics Approach", 4th National System Dynamics Conference, Tirupati, December 14-16, 1990, pp.79-86.
341. Saroj Koul and **Prem Vrat**, "A System Dynamics Based Integrated Model for Policy Analysis: A Case Study", Proc. of 4th National System Dynamics Conference, Tirupati, December 14-16, 1990, pp. 79-86.
342. Rajeev Vijay, Arun Kanda and **Prem Vrat**, "A Multi-Objective Approach to Capacity Expansion of a Road Network, Transportation Systems Studies Analysis and Policy", (P.S.Satsangi and A.L. Aggarwal, eds.), Papyrus Publishing House, New Delhi, 1990.
343. **Prem Vrat**, "Industrial Management Module in Technical Education: A Critical Reappraisal", Proc. of National Seminar on "Engineering Trends in Technical Education" (Ed.P.B.Sharma et al), Delhi, June 1992.
344. Rajeev Vijay, A.Kanda and **Prem Vrat**, "Traffic Management Scheme for Cannought Place", Proc. of Workshop on Policy Issues and Problems in Transport Sector, Vol.II, April 6-10, 1992, IIM Ahmedabad.
345. S.K.Agrawal and **Prem Vrat**, "ISO: 9000 Implementation in Indian Organizations", 8th ISME Conference on Mechanical Engineering, IIT, Delhi, pp. 638-644, 1993.
346. S.K.Agarwal and **Prem Vrat**, "Issues of Effective Implementation of ISO 9000 in Indian Context" Proc. of IIFE National Seminar on TQM, April 15-16, 1993, New Delhi, pp. XIII 1-8.
347. **Prem Vrat**, "System Dynamics Education in India: A SWOT Analysis", Proc. of 5th National Conference on System Dynamics, New Delhi, March 19-21, 1993, pp.419-423, Wiley Eastern Ltd.
348. Narendra Kumar, **Prem Vrat** and Sushil, "A Conceptual DSS for Unit Exchange Spares Management Using Physical Systems Theory in Systems Dynamics Framework", Proc. of 5th National Conference of System Dynamics, New Delhi, March 19-21, 1993, pp.41-53, Wiley Eastern Ltd.
349. Saroj Koul and **Prem Vrat**, "A System Dynamics Based Model for Evaluating the performance of an Engineering Firm", Proc. of 5th National Conference on System Dynamics, New Delhi, March 19-21, 1993, pp.122-137, Wiley Eastern Ltd.
350. A.K.Vij, **Prem Vrat** and Sushil, "Applied Systems Analysis in Energy Planning for the Indian Economy", Proc. of One-day Workshop on Future Vision: Applied Systems Analysis, New Delhi-1003, pp, 43-69.
351. **Prem Vrat**, Y.K.Gupta and Anjana Gupta, "A System Dynamics Study of Global Warming", Proceeding of 17th National Systems Conference (NSC-93), (ed.P.Kalra), Dec.24-26, 1993, pp.410-414, Allied Pub. Co., New Delhi.
352. S.K. Agrawal and **Prem Vrat**, "Evaluation of Total Quality Management in Indian Scenario", 5th National Convention of NIQR, TQM for customer delight, pp.1, New Delhi, 1994.

353. Garg, S., **Vrat, P.** and Kanda, A., "Evaluation of Excess Capacity Requirements in a JIT Environment: A Simulation Study", Abstracted in Proceedings of the XXVIII Annual Conference of the Operation Research Society of India, pp 20-21. 1995.
354. **Prem Vrat** and Ali A. Majeed, "Design of Cellular Manufacturing System: A Hopfield Neural Network approach", Proc. 19th NSC, Recent Trend in Applied System Research, pp. 467-473, 1995.
355. S.K.Agrawal and **Prem Vrat**, "ISO:9000 certification and TQM movement : Are you in the right direction ?", XXXVIII National Convention Indian Institute of Industrial Engineers, pp. 377- 386, Bombay, December, 1996.
356. S.K.Agrawal and **Prem Vrat**, "Experience in Quality Improvement: Problems & Prospects", 7th National conference on Science and Technology in National Development, Bangalore, November, 1996.
357. Garg S., **Vrat P.** and Kanda, A., "Flexible Assembly Line Operations Using Multifunctional Workers", Proceedings of the Xth ISME Conference in Mechanical Engineering, New Age Publisher, pp IV3-IV9, 1996.
358. Shanker R. and **Vrat P.**, 'Optimal Selection of Exceptional Elements and Bottleneck Machine in Cellular Manufacturing', In: Proceedings of National Conference on Operation Research in Modern Technology, Kurukshetra, Ed. Jai Singh, E1-E10, 1996.
359. **Prem Vrat** S.G.Deshmukh, Y.Andley, R.Seth and R.P.Singh, "Development of a Heuristic for Stuffing Pattern of Shipping Cargo", Proc. of XIth ISME Conf. New Delhi, Feb. 99. Pp. 267-277.
360. Ravi Shanker & **Prem Vrat**, "Design of Cellular Manufacturing System: An Improved Algorithm", Proc. of 11th ISME Conf. New Delhi. Pp.255-260, Feb.1999.
361. Ravi Shanker & **Prem Vrat** "Design of Cellular Manufacturing System: A Taxonomical Review", Proc. of 11th ISME Conf., New Delhi Feb.99, pp. 261-266.
362. Verma P., Deshmukh S.G., **Vrat P.**, 2002, "Pollution Control and greenhouse gas mitigation in transport sector – A case for system dynamics study", Proc. of National Conference on Transportation Systems, New Delhi, pp. 162-172.
363. **Vrat, P.**, Shankar, R., Tiwari, M.K., Srinivas, and Solimanpour, M., 2002, "Transiently Chaotic Neural Network Approach for Transportation Problem", Proceedings of the National Conference on Transportation Systems: Status and Directions, Indian Institute of Technology Delhi, New Delhi, India, 361-367.
364. **Vrat, P.**, Wadhwa, S., Deshmukh, S.G., Shankar, R., Bhagwat, R., and Padmaja, G.N., 1996, "A Two phase Heuristic for Line Balancing", Proc. of 10th ISME Conference, Mechno-Vision Ed. Sharma P.B.et.al, New Age Intl. (P) Ltd. Publishers, New Delhi, 1996, pp. 55-61.

365. A. Noorul Haq, **Prem Vrat** and Arun Kanda, "Modelling and analysis of Integrated Production-Distribution-Inventory Systems", Ch.12 in "Modelling and Analysis of Large Systems" (Editor: A.Tripathy), pp.164-172, Oxford-IBH Press.
366. Rupesh K. Pati, S. Balan, **Prem Vrat** and Pradeep Kumar, "Application of Supply Chain Management to Indian Paper Sector", Proceedings of XIII National Conference of Indian Society of Mech. Engineers, Dec. 30-31, 2003, IIT Roorkee, PE-056, pp.1-8.
367. Shalini Anand, Vikash Talyan, R.P. Dahiya and **Prem Vrat**, "Contribution of Indian Rice Fields to Green House Gas Emissions", in "Energy and Environment", eds. M. Emrankhan and M. Muzaffaral Hasan, Anaunaya Publishers, New Delhi, 2004, pp. 310-315.
368. Shalini Anand, R.P. Dahiya and **Prem Vrat**, "Assessment of Greenhouse Gas Emissions from Cement Industries in India", in "Energy and Environment" eds. M. Emrankhan and M. Muzaffaral Hasan, Anaunaya Publishers, New Delhi, 2004, pp. 210-213.
369. Shankar R. and **Prem Vrat**, "Cellular Assembly Line: Concept and Implementation Strategy", Proc. of 10th ISMI Conf.: Mechno Vision, Ed. Sharma P.B. et.al, New Age Intl. Pub., New Delhi, 1996, pp.II, 35-39
370. Shankar, R., **Vrat, P.**, Khanna, V.K. and Sahay, B.S., "Six Sigma Practices: Some observations", Proc. of National Seminar on Six Sigma for Forge and Foundry Industries, Ranchi, April 10-11, 2004, pp. 40-45.
371. Balan, S., **Prem Vrat** and Pradeep Kumar, "The role of supply chain on India's development index: An analytical approach", 37th Annual ORSI Convention, IIM Ahmedabad, Jan.8-11, 2005.
372. Shalini Anand, Talyan V., Dahiya R.P. and Vrat P. – 'Emission of Greenhouse Gases' from Agriculture Sector, Proc. of National Conference on Energy and Environment (NCEE-06), Jaipur pp. 128-134, 2006.

Others:

373. R.H. Hollier and **Prem Vrat**, "A Review of Multi-Echelon Inventory Control Theory and Application", Tech. Report, Univ. of Birmingham, May 1976, pp. 1-62.
374. Prem Vrat, Deshmukh SG, Andley Y and Singh RP, 1993, "Development of a heuristic for stuffing of shipping cargo, XXVI National Conference of ORSI, Bhuvneshwar, Dec.
375. Shankar, R. and **Vrat, P.**, 1998, "Cellular Manufacturing System: An Overview", In: Advanced Manufacturing Technology, Ed. Deshmukh, S. G. and Rao, P. V, Dept. of Mechanical Engineering, IIT Delhi, (Also in the Proceedings of DST sponsored SERC School Nov. 2-14, 1998), pp. 7-19.
376. Shankar, R. and **Vrat, P.**, 1998, "Automated Guided Vehicle: An Overview", In: Advanced Manufacturing Technology, Ed. Deshmukh, S. G.

and Rao, P. V, Dept. of Mechanical Engineering, IIT Delhi, (Also in the Proceedings of DST sponsored SERC School Nov. 2-14, 1998), pp. 82-93.

377. **Prem Vrat** & Deshmukh SG, 2000, "Standards for Peace and prosperity, Presentation at BIS Convention on World Standards Day", N. Delhi.
378. Verma P, **Prem Vrat**, and Deshmukh SG, 2002, "Modelling Control and Green House Gas Mitigation Strategies for Transport Sector", Proceedings of 4th Asia Pacific Conference on Industrial Engineering and Management System, Taipei.
379. **Prem Vrat**, "Faculty Development for Excellence in Higher Education – Issues, Challenges and Opportunities" in "Issues in Higher Education" Ed. K. Venkatasubramanian, ICFAI University Press, Hyderabad, 2004.
380. **Prem Vrat**, "Quality system for excellence in engineering education" spl. Issue of University News, AIU, (Ed. P.B. Sharma), 2006.

