

BIODATA

Dr. Dhaneshwar Prasad, M. Sc. Ph.D.

Associate Professor & HOD of Mathematics,

Dr. S. R. K. Govt. Arts College, YANAM, Pin.- 533 464, India

Ph.D. and Thesis Title:

Thermal Effects in Lubrication of Rollers with a Non-Newtonian Fluid,

Dept. of Mathematics, Indian Institute of Technology, Kanpur, in the year 1989.

Hydrodynamic lubrication of roller bearings was analyzed using non-Newtonian fluid modal with and without thermal effect along with cavitation including compressible effect. Several bearing characteristics such as load, traction and point of cavitation etc were analyzed and are compared with previous results already published in some standard National and International journals.

Conferences/ Symposia/ Workshops attended/presented paper:-

1. Symposium on “ Frontier of Mathematical Sciences “, **March 1985, 25 – 29**, Organized by **Bharat Ganitha Parishad** , held at **Indian Institute of Technology**, Kanpur – 208016, India, Paper presented- Thermal effects in lubrication of cylindrical rollers considering cavitation.
2. **International** Symposium on “ Mathematical Modeling of Ecological, Environmental and Biological system “, **August 1985, 27-30, Indian Institute of Technology, Kanpur** - 208016, India, Paper presented –Thermal effects in lubrication of synovial joints.
3. Symposium on “Surface Effects in Tribological systems , Lubrication and Maintenance” , organized by **Regional Institute of Technology (N I T), Jamshedpur**, India, **July 1986, 12 – 15**.
4. The Pondicherry Institute of Co-operative Management, A unit of the Pondicherry State Co-operative Union, Pondicherry”, conducted two days seminar on “ Leadership Development Program for the **Members of the Board of Directors of Co-operative Societies** in Yanam from **February 2001, 2-3**.
5. Symposium on IT & e-Governance (**SITeG’2004**), Conducted by National Informatics Centre Yanam, on **9th January 2004**.
6. Training Program on **HIV / AIDS** and Woment’s Rights, conducted by Pondicherry University (Centre of Adult and Continuing Education, **C-ACE**), from **February 2004, 27-28**.
7. Short Training Program on “ Computational Fluid Mechanics “, Conducted by Dept. of Mathematics and Humanities, **National Institute Technology**, Warangal – 506004, India, **January 2007, 15 – 19**.
8. **96th Indian Science** Congress, **January 2009, 03 - 07**, held at North Eastern Hilly University, Shillong, Meghalaya, India; Paper Presented: Lubrication of rollers by Non- Newtonian Compressible fluids flow with squeezing.
9. One day **National Seminar** on “Innovative Teaching and Learning Methods in Technical Education, **MVR College of Engineering and Technology**, Vijayawada, India, **14th February, 2009**.
10. A two day **National workshop** on “ Mathematical Techniques and Applications in Engineering Problems during **6th & 8th November 2009**, GMR Institute of Technology, Rajam , Srikakulam, A.P., India.
11. **International** Conference on “Recent Advancement in Mathematics and Studies Association“ , during **19th Dec. 2009 to 22nd Dec. 2009**, Gayatri Vidya Parishad Engineering College, Madhurbada , Vishakhapatnam, India.
12. **National** conference on “ Challenges on human development “ from 21 January to 22nd **January, 2010**, Dr. S. R. K. Govt. Arts College, Yanam, U. T. of Puducherry, India.

13. A two day seminar on “ **The innovative Ideas in Teaching – Learning Evaluation Process**” conducted by Dr. S. R. K. Govt. Arts College, Yanam, Govt. of Puducherry, India from **15th Nov. to 16th Nov., 2010**.
14. A two day **National** Conference on Engineering Science , Technology and Applied Sciences, M.V.R. College of Engineering and Technology, Paritala , Vijaywada, Inida, **12 - 13th March, 2010**. **Paper presented:** Thermal effects in hydrodynamic lubrication of asymmetric rollers using Runge-Kutta Fehlberg method with step size control, Proceedings: page No. 110 – 120.
15. **National** conference on Advance Mathematics and its Applications CAMA ‘ 11, **25th and 26th February 2011**, D.A.V. College, Bathinda (Punjab), India, **Paper presented:** Analytical solution for Lubrication of rollers by Power Law Fluids with thermal effect including cavitations, **Proc., PP.** 106-114.
16. **A National conference on mathematical Modeling and Computer Simulations** & A symposium on understanding Nature and Society using Science and Technology, **July 7th to 9th , 2011**, **Bhabha Group of Institutions** , Aunaha Shivali Rasoolabad Road, Kanpur (Rural) – 209204, U.P., India. **Paper Presented:** Some analytical solution for lubrication of rollers with two dimensional power law consistency variation including thermal effects, squeezing and cavitation.
17. **99th Indian Science Congress, January 2012, 03 - 07**, held at KIIT University, Bhubaneswar, Odissa, India; Paper Presented: Lubrication of rollers by Non- Newtonian Squeezing Film of Journal Bearing with temperature effect, Indian Science Congress, Mathematics session, P.88.
18. **XXI Congress & National Conference on Application of Mathematics in Engineering, Physical and Life Sciences**, S. V. University, Tirupati, **07/12/2012**, AP Science Congress Proceedings, p.49
19. **U.G.C. National workshop on “role of teachers in motivating youth for National Development”** V.S.M. College Ramachandrapurm, **12th February 2013**.
20. **E- Literacy Program (for IT and non-IT)**, conducted by ICT Academy of Puducherry from **7th April to 19th April 2013** at Dr. S. R. K. Govt. Arts College, Yanam.
21. **National Workshop on Recent Trend in Mathematics**, organized by Dept. of Science and Humanities, Vignan University, Guntur on **13th July 2013**.
22. **International Conference on Advances in Tribology and Engineering Systems**, from **15th - 17th October, 2013**, L. D. College of Engineering (Gujarat Technical University), Ahmedabad, Gujarat

List of Research Publications:

1. Prasad D.,Singh P.,and Sinha P. “**Thermal and squeezing effects in non- Newtonian fluid film lubrication of rollers**”, **WEAR**, Vol. 119 (1987), PP. 175-190.
2. Prasad D., Singh P., and Sinha P. “**Non-uniform temperature in non-Newtonian fluid film lubrication of rollers**, **Journal of Tribology**, ASME Trans., Vol. 110 (1988), PP. 653-659.
3. Prasad D.,Singh P. ,and Sinha P. “**Thermal and inertia effects in lubrication of rollers by a non - Newtonian power law fluid** “ **Proc., National Industrial Tribology**, Conference, held at Trivendrum, **January 1989**.
4. Chhabra R.P. and Prasad D. “**Isothermal creeping flow past an assemblage of composite spheres** “ **Proc., Chemical Engineering Science conference**, **Indian Institute of Science, Bangalore, 1989**, PP. 72-77.
5. Prasad D., Narayan K.A., and Chhabra R.P., “**Creeping fluid relative to an assemblage of composite spheres** “, **International Journal Engineering Science**, Vol. 28 (1990), PP. 215 - 230.

6. Chhabra, R.P., and Prasad, D. “ **A fluid – mechanic based model for the sedimentation of flocculated suspensions**”, **Separation Science and Technology**, Vol. 26(1991), PP. 223 – 241.
7. Prasad D. and Chhabra R.P. “**Thermal and normal squeezing effects in lubrication of rollers by a power law fluid**“, **WEAR**, Vol. 145 (1991), PP. 61-76.
8. Prasad D., Shukla J.B., Singh P., Sinha P. and Chhabra R.P., “ **Thermal effects in lubrication of asymmetrical rollers**”. **Tribology International**, Vol. 24 (1991), PP. 239 - 246.
9. Patel, J. and Prasad, D., “ **Coefficient estimates for bounded starlike functions of complex order with N- symmetric points**“, **Pure and Applied Mathematica Sciences**, Vol. 34 (1991), PP.81 – 85.
10. Prasad D., Singh P. ,and Sinha P. **Thermal and Inertia effects in lubrication of rollers with power law lubricants having temperature and pressure dependent consistency**, **Indian Journal of pure and Applied Mathematics**, Vol. 23 (1992), PP 305 – 320.
11. Prasad D., Singh P. and Sinha P., “**Thermal and inertia effects in hydrodynamic lubrication of rollers by a power law fluid considering cavitation**, “**Journal of Tribology, ASME Trans.**, Vol. 115 (1993), PP. 319 - 326.
12. P. Sinha and D. Prasad, “ **Lubrication of rollers by power law fluids considering consistency variation with pressure and temperature**“, **Acta Mechanica**, Vol. 111 (1995), PP. 223-239.
13. Dhaneshwar Prasad, S.V. Subrahmanyam, Sudam Sekhar Panda, “ **Thermal effects in hydrodynamic lubrication of asymmetric rollers using Runge Kutta Fehlberg method** ” **International Journal of Engineering Science and Advanced Technology** Vol.-2 (2012), pp. 422 – 437.
14. Dhaneshwar Prasad, Sudam Sekhar Panda, S.V. Subrahmanyam, , “ **Non-Newtonian Squeeze Film Lubrication of Journal Bearing with Temperature Effect**” , **International Journal of Engineering Science and Advanced Technology** Vol.-2 (2012), pp. 438 – 444.
15. Dhaneshwar Prasad, S. V. Subrahmanyam, “**Thermo Hydrodynamic Lubrication Characteristics Of Power Law Fluids In Rolling/Sliding Line Contact** ”, **International Conference on Advances in Tribology and Engineering Systems: ICATES 2013**, published in the Conference Proceedings, Edited by Springer New Delhi Heidelberg New York Dordrecht London, PP. 127-141.
16. Dhaneshwar Prasad, S. S. Panda, and S. V. Subrahmanyam, “**Power Law Fluid Film Lubrication of Journal Bearing With Squeezing and Temperature Effects** ”, **International Conference on Advances in Tribology and Engineering Systems: ICATES 2013**, published in the Conference Proceedings, Edited by Springer New Delhi Heidelberg New York Dordrecht London, PP. 73- 84.
17. S. V. Subrahmanyam and Dhaneshwar Prasad, “ **Characterization of Lubrication of Asymmetric Rollers including Thermal Effects**” Accepted by **Industrial Lubrication and Tribology - Decision on, Manuscript ID ilt-04-2013-0048. R1, U.K.**
18. S. V. Subrahmanyam, Dhaneshwar Prasad, and S. S. Panda, **A Study on Goodness of Fit For The Linear Model of Index Numbers of Jute Productivity In India**, **International Journal of Science Engineering and Advance Technology, IJSEAT**, Vol 1, Issue 6, **November – 2013**, ISSN 2321-6905, p. 142 .
19. S. V. Subrahmanyam, Dhaneshwar Prasad, and S .S. Panda, **Thermo Hydrodynamic Lubrication of Rollers under Adiabatic and Isothermal Boundaries in Rolling/Sliding Line Contact**, Number : 63, **ICRAMID-2014**, PONJESLY COLLEGE OF ENGINEERING, Alamparai, Nagercoil, Tamilnadu, Kanyakumari Dist-629003, India .
20. Dhaneshwar Prasad, Sudam Sekhar Panda, S. V. Subramanyam and G. M. Deheri
Title : **Thermal Effect on Hydrodynamic Lubrication of Journal Bearing**, Number : 163, **ICRAMID-2014**, PONJESLY COLLEGE OF ENGINEERING, Alamparai, Nagercoil, Tamilnadu, Kanyakumari Dist-629003, India.

21. Dhaneshwar Prasad, Sudam Sekhar Panda, S. V. Subramanyam, Title: Thermal Effects in non-Newtonian Lubrication of Asymmetric Rollers Under Adiabatic & Isothermal Boundries. , ICAFD-2014 (July 21-23, 2014), S. V. University Tirupathi, AP, India.
22. **S. V. Subrahmanyam, Dhaneshwar Prasad, THERMAL, SQUEEZING AND COMPRESSIBILITY EFFECTS IN LUBRICATION OF ASYMMETRIC ROLLERS**”, Tribology in Industry, Vol. 36, No. 3, 2014.

Achievements :-

1. National Merit Scholarship (1976-1978) for Post Graduate Programme
2. Fellowship at Indian Institute of Technology, Kanpur from 1982 July to 1989 April.
3. Recognized as a Research Guide leading to Ph.D. and M.Phil by Pondicherry University, Pondicherry; and SASTRA University, Thanjavur. Tamilnadu, India .

Institutional Member:

1. Indian Society for Mathematical Modeling and computer Simulation (ISMACS) HQ: IIT Kanpur-208016, U.P., INDIA
2. Indian Science Congress, Head Office: Kolkatta
3. Member of Board of study , Pondicherry University
4. Question paper setter: K. L. University, Guntur

Educational Qualifications:

Graduation (Mathematics): B.Sc. (Hons.) first class first, Magadh University Bodhgaya, Bihar, 1976.

Post Graduation (Mathematics): First class first, Magadh University, Bodhgaya, Bihar ,1979.

Doctoral : Applied Mathematics/ Fluid Mechanics/ Hydrodynamic theory of lubrication of roller bearings; April 1989, Indian Institute of Technology, Kanpur - 208016

Post Doctoral Research : Worked as **Project Engineer/ Project Scientist** in the Dept. of Mathematics and Chemical Engineering, Indian Institute of Technology , Kanpur from April 1988 to 9th March 1991.

Experience :-

1. Teaching Experience-

Undergraduate : Assistant Professor/ Associate Professor of Mathematics, since **March 1991 to till date** at Dr. S.R.K. Govt. College, Yanam, U. T. of Puducherry.

Post Graduate : Guiding Research Scholar leading to Ph.D. Program. Presently three lecturers are working under me whose Ph.D. registration programs are over.

(i) *Mr. S.V. Subrahmanyam*, Assitant Professor, K.L. University, Guntur, worked on hydrodynamic lubrication of asymmetrical rigid rollers with power law lubricant including consistency variation and cavitation, and submitted his thesis in June 2012 continuing his post Ph.D. program under me.

(2) *Mr. S. S. Panda*, Assistant Professor, RIT, Yanam, working on hydrodynamic non-Newtonian lubrication of journal bearing with thermal effect including cavitation, and submitted his thesis in June 2014, continuing his post Ph.D. program under me. .

(3) *Mr. V. Nagarajan*, Retired Principal, MUTHU RANGAM GOVT. ARTS COLLEGE, VELLORE – 632 002 , working on consistency variation of power law fluid lubrication of rigid symmetric roller bearing including normal squeezing and cavitation. , expected to be over by Dec. 2014

2. *Research Experience-*

Five and half Years of **Regular Research Scholar** at Indian Institute of Technology, Kanpur from July **1982** to **March 1988**.

3. *Administrative Experience:*

- (i) Worked as In-Charge Head of Dept. of Computer Science , Dr. S. R. K. Govt. Arts College, Yanam from November 2000 – January 2011 ie from its beginning , and established the Department with good Computer Lab facility with AC, Internet etc..
- (ii) Worked as a Secretary, College Co-operative Society, Dr. SRKGAC & STPPGJCSCS, P- 54, Yanam, for continuous two terms from **1996 July** to **July 2003**.

Project (Joint project)- P. G. :

- (i) with Prof. R. P. Chhabra : Creeping flow in porous medium - Two years as a **Project Engineer** at Indian Institute of Technology, Kanpur, in Chemical Engineering, **April 1988** to **March 1990**
- (ii) with Prof. J. B. Shukla : Boundary Layer Theory - One year as a **Project Scientist** at Indian Institute of Technology, Kanpur, in Mathematics, **April 1990** to **March 1991**.

Project (Joint project)- U. G. :

- (i) With N. Chaitanya who completed three years regular degree course in Mathematics at Dr. S. R. K. Govt. Arts College, Yanam- Three years as mentor for a DST project ‘(www.inspire-dst.gov.in) ’- Innovation in Science Pursuit for Inspired Research ‘INSPIRE SCHOLARSHIP ’ for under graduate program form May 2012 to till date . The project is still continuing up to two more years.

References:

- (1) Dr. Prawal Sinha, Professor of Mathematics, Dept. of Mathematics and statistics, Indian Institute of Technology, Kanpur – 208016, India
Tel No. 0512 2597213; email : prawal@iitk.ac.in
- (2) Dr. R. P. Chhabra, Professor of Chemical Engineering, Indian Institute of Technology, Kanpur – 208016, India
Tel No. 0512 2597393; email : chhabra@iitk.ac.in
- (3) Dr. Peeyush Chandra, Professor of Mathematics, Dept. of Mathematics and statistics, Indian Institute of Technology, Kanpur – 208016, India
Tel No. 0512 2597285; email : peeyush@iitk.ac.in .

Personal Details:-

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