

Dr. Shubhashis Sanyal, Professor in Mechanical Engineering

DR. SHUBHASHIS SANYAL

Professor

Mechanical Engineering Department,
NIT Raipur, Raipur (C.G.) 492010



Date of Joining: 20.11.1990 as Lecturer in GEC Jabalpur, 20.11.1999 as Reader (Tech. Education, Man Power Planning, M.P./C.G.), 1.12.2005 as Associate Professor NIT Raipur, 10.04.13 as Professor NIT Raipur.

Awards:

1. **GSFC and ISTE National Award for Best M.Tech. Thesis “ Safe Spacing of Nozzles in Pressure Vessel”** submitted under the guidance of Prof. K. B. Mulchandani, M.I.E.D. University of Roorkee, Second Prize Holder, 1990.
2. Institute is awarded for **Dedicated Industry Linkage Activities at CIILP - SHOW CASE CONFERENCE GOA – 8-10 Oct. 2004.**
3. **Outstanding Engineering Teacher Award**, Facilitated by the Institution of Engineers (India) Chhattisgarh State Centre, 5th Sept. 2014.
4. **Certificate of Appreciation** as TEQIP Coordinator by NPIU, MHRD, GOI.

Portfolio's handled: Hostel Warden, Chief Warden, Registrar I/C, Member Secretary BOG, Finance and Senate, Member BOG, Chairman Purchase Committee, Prof. I/C Workshop, Head of the Dept (Applied Mechanics), Head of the Dept. (Mechanical), Dean (R&C), Industry Linkage Officer (CIILP), Chairman Continuing Education Cell, Prof. I/C - Click, Prof. I/C - Raaga, Chairman BOS, Chairman DRC, TEQIP- II Coordinator, TEQIP - III Coordinator.

Membership of Professional Institutions:

1. Life Member, **Indian Society for Technical Education.**
2. Life Member, **Association for Machines & Mechanisms.**
3. Fellow Member, **Institution of Engineers.**
4. Life Member, **Tribology Society of India.**

Area of Interest: Synthesis of Mechanisms, Stress Analysis, Stress Concentration Factor, Bio-Mechanics.

Doctoral Thesis Supervised:

1. **Investigation on the performances of Rolling Element Bearings for Enhanced Life** by Shri S.P.S.Matharu, Co-supervised by Dr. D.S.Bal.
2. **Kinematic Synthesis and Analysis of Mechanisms** by Shri G. S. Bedi.
3. **Analytical and Experimental Investigation of Mitigation of Stress Concentration Factor in Isotropic and Orthotropic Plates with Different Discontinuities Subjected to Various Loading Conditions** by Shubhrata Nagpal, Co-supervised by Dr. N. K. Jain.
4. **Three Dimensional Analysis of Stress Concentration Factor in Isotropic, Orthotropic and Laminated Composite Plate with Central Circular Hole under**

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Dr. Shubhashis Sanyal, Professor in Mechanical Engineering

Various Loading by Moon Banerjee, supervised by Dr. N. K. Jain, co-supervised by Dr. S. Sanyal.

5. **A Novel Method for Identification of Structural Characteristics of Planar Kinematic Chains** by Shri Arvind kumar Shukla.
6. **Kineto-Elastodynamic Analysis of Polymeric Composite Planar Mechanism Under Hygrothermal Environment** by Shri Shailendra Kumar Singh.
7. **Investigation of Thermal Performance of Low Income Group Houses in Chhattisgarh** by Nisha Netam, co- supervised by Dr. S. Bhowmick.

Papers, Books review:

1. On the panel of Reviewers for Journal of The Institution of Engineers (India).
2. On the panel of Reviewers for Machine Design and Mechanical Engineering books published by Tata McGraw Hill.

Papers Published:

A. International Journals:

1. **Pseudo Probabilistic Approach To Test Isomorphism Among Kinematic Chain**, by S.Sanyal, A.C.Rao, M.Choubey, Transactions of C.S.M.E., Vol. 21, No. 2, 1997.
2. **Pseudo Probabilistic Approach To Detect Distinct Inversions Of Kinematic Chain**, by S.Sanyal, A.C.Rao, & M.Choubey, Transactions of C.S.M.E., Vol. 21, No. 2, 1997.
3. **Development of a Multipurpose, Efficient and Inexpensive Bearing Test Rig** by S. P. S. Matharu, S. Sanyal and D. S. Bal, Journal of Engineering and Technology Research Vol. 2(3), pp. 044-049, March 2010.
4. **Modified Joint Connectivity approach for Identification of Topological Characteristics of Planar Kinematic Chains**, G S Bedi and S Sanyal, Proceedings of the Institution of Mechanical Engineers Part C [PIC]: Journal of Mechanical Engineering Science, November 2011, Vol. 225, No.11, 2700-2717.
5. **Interaction Effect of Auxiliary Holes for Mitigation of Stress Concentration in Isotropic Plate with Central Circular Hole Subjected to In-Plane Loading**, Shubhrata Nagpal, S. Sanyal and N.K. Jain, International Journal of Mechanics and Solids, Volume 6, Number 2 (2011), pp. 149-156.
6. **Structural Identification of Distinct Inversions of Planar Kinematic Chain**, Sanyal Shubhashis, IIUM Engineering Journal, Special Issue, Malaysia, Mechanical Engineering, 2011, pp 87 – 94.
7. **Design Optimization of Rectangular Isotropic/Orthotropic Plate with Opposite Semicircular Notches subjected to In-Plane Static Loading for Reduction of Stress Concentration Factor**, Ms. Shubhrata Nagpal, Dr. S. Sanyal and Dr. Nitin Jain,

Dr. Shubhashis Sanyal, Professor in Mechanical Engineering

International Journal of Applied Engineering Research, Volume 6, Number 18(2011), pp.2239-2242.

8. **Three dimensional parametric analyses on effect of fibre orientation for stress concentration factor in fibrous composite cantilever plate with central circular hole under transverse loading-** Moon Banerjee, Dr. N. K. Jain and Dr. S. Sanyal, IIUM Engineering Journal, Malaysia, Vol.13, No-2, 2012.
9. **Mitigation Curves for determination of relief holes to mitigate stress concentration factor in thin plates loaded axially for different discontinuities**, Shubhrata Nagpal, S.Sanyal, Nitin Jain, International Journal of Engineering and Innovative Technology Volume 2, Issue 3, September 2012, pp1-7.
10. **Three Dimensional Parametric Analyses of Stress Concentration Factor and It's Mitigation in Isotropic and Orthotropic Plate with Central Circular Hole Under Axial In-Plane Loading**, Shubhrata Nagpal, Nitin Kumar Jain, Shubhashis Sanyal, Journal of the Institution of Engineers (India): Series C, ISSN: 2250-0545, August 2015.
11. **Numerical simulation of crack propagation under fatigue loading in piezoelectric material using extended finite element method**, S. Bhattacharya, G. Pamnani, S. Sanyal, K. Sharma, International Journal of Computational Materials Science and Engineering Vol. 4, No. 4 (2015).
12. **Parametric Study of Interaction effect between closely - spaced nozzles in a thin cylindrical pressure vessel**, D. S. Kushan, Shubhashis Sanyal, Shubhankar Bhowmick, International journal of Pressure Vessel and Pipings, Elsevier Publication, <https://doi.org/10.1016/j.ijpvp.2018.05.009>, 31 May 2018.
13. **An Anisotropic Analysis of Human Femur Bone with Walking Posture: Experimental and Numerical Analysis**, Ritu Painkra, Shubhashis Sanyal, Arindam Bit, BioNanoScience, <https://doi.org/10.1007/s12668-018-0560-1>, Springer, 17th Sept. 2018.
14. **Modified experimental procedure to determine the output variable in an optimum range – A case study: Pulley belt experiment** by Ankur Verma, Shubhashis Sanyal, International Journal of Mechanical Engineering Education, SAGE Journals, Oct. 4, 2018.

B. National Journals:

Dr. Shubhashis Sanyal, Professor in Mechanical Engineering

1. **Stress Mitigation in Infinite Thin Plate with Two Circular Holes Under Tensile Loading** by S.Sanyal, M.Swarnakar, S.Dehariya and M.Dewangan, CSVTU Research Journal, pp 67-69, Vol.2, No.1, Jan 2009.
2. **Joint Connectivity : A New Approach for Detection of Isomorphism and Inversions of Planar Kinematic Chains** by G.S.Bedi and Sanyal S, Journal of Institution of Engineers (India), 2010, Vol. 90, pp. 23 – 26.
3. **Joint - Loop Representative Table for Detection of Isomorphism among Kinematic Chains**, G.S. Bedi and S.Sanyal, CSVTU Research Journal, Vol. 05, 2012, pp 82 - 87.

C. International Conference:

1. **Relief Holes for Stress Mitigation in Infinite Thin Plates with Single Circular Hole Loaded Axially** by Sanyal S and Ms. Priti Yadav, ASME International Mechanical Engineering Congress and Exposition, 5 – 11 November 2005, Orlando, Florida, USA.
2. **Multiple Relief Holes for Stress Mitigation in Infinite Thin Plates with Single Circular Hole under axial loading** by Sanyal S and Ms. Priti Yadav, 5 - 8 July 2006, 2nd IC-SCCE, From Scientific Computing to Computational Engineering” Athens, 5-8 July, 2006.
3. **Detection of Isomorphism amongst Planar Kinematic Chains using Link Joint Connectivity Table**, Sanyal Shubhashis, 25 - 27 Dec.2009, International Conference on Applied Mechanics and Machines, WASET09, Bangkok.
4. **Structural Identification of Distinct Inversions of Planar Kinematic Chains**, Sanyal Shubhashis, 17 - 19 May 2011, International Conference on Mechanical, Automotive and Aerospace Engineering, ICMAAE'11, Kuala Lumpur, Malaysia.
5. **Effect of fiber orientation on stress concentration factor in fixed rectangular fibrous composite plate with center circular hole subjected to transverse loading**, Dr. N. K. Jain, Moon Banerjee, Dr. S. Sanyal, Third Asian Conference on Mechanics of Functional Materials and Structures, ACMFMS 2012, 5-8 December at IIT Delhi.
6. **Thermal Comfort Analysis : A Case Study of LIG Housing in Chhattisgarh**, Nisha Netam, S.Sanyal, S. Bhowmick, ICME 2015, 18 - 20 Dec. 2015, Dhaka, Bangladesh.
7. **An approximate solution to the stress and deformation states of functionally graded rotating disks**, Lakshman Sondhi, S.Sanyal, S. Bhowmick, ICME 2015, 18 - 20 Dec. 2015, Dhaka, Bangladesh.

D. National Conferences:

Dr. Shubhashis Sanyal, Professor in Mechanical Engineering

1. **Computer Aided Design and Drafting of Flange Coupling Through Parametric processing**, by V.Verma, S.Sanyal, NACOMM 1993, I.I.T. Kharagpur.
2. **Photoelastic Analysis for Safe Spacing of Nozzles In A Pressure Vessel**, by S.Sanyal, K.B.Mulchandani, NACOMM 1993, I.I.T. Kharagpur.
3. **Computer Aided Synthesis of Slider Crank Mechanism with Four Accuracy Points**, by S.Khandekar, P.Sharma, S.Sanyal, NACOMM 1993, I.I.T. Kharagpur.
4. **Analysis of Walking Mechanism and Design of the Shoe Insole Through Mathematical Modelling**, by A.Chaturvedi, S.Sanyal, NACOMM 1995, C.M.E.R.I., Durgapur.
5. **Detection of Isomorphism Among Kinematic Chains Using Joint-Loop Probability Matrices**, by A.Ganguly, S.Sanyal, NACOMM 1997, I.I.T. Kanpur.
6. **Analysis of Stress Concentration for Rectangular Plate with Hole under Transverse Loading by Three Dimensional Finite Element Analyses**, Moon Banerjee, Dr. N. K. Jain and Dr. S. Sanyal, The Indian Society of Theoretical and Applied Mechanics ISTAM, 17-20 December 2012, Organized by IIT KGP at DIAT, Pune.

Case Study Presentation:

1. **SUSTAINABLE MODEL OF REVENUE GENERATION** at Show-Case Conference held at GOA on 2004.

Curriculum Development and Training Provided:

1. Two Competencies based Course Curriculum's using **DACUM** techniques **Chemical Process Operator** and **Commissioning and Maintenance of Transformer**.
2. Provided training for development of **Institute's Strategic Plan** to four technical institutes.

Industry Institute Interaction:

1. Developed **Testing and Consultancy brochure** for promoting Institute's testing and consultancy.
2. Identified the **training needs** of the students and arranged summer training and industrial visits for the students.
3. **Interaction with Various State Govt. Dept's and Industries** for identification of the institute as consultancy provider.

Projects:

1. **Computer Aided Design and Drafting Lab Development**, by Dr. S.Sanyal funded under FIST-DST scheme.

Others: Certified **Applied DACUM Facilitator** and **Applied Strategic Planning Trainer** under Canada India Industry Institute Linkage Project.

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