

# RESUME

Name : **Dr. Sisir Kumar Guha**

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## Educational Qualifications

Sl. No.	Examination	Board/University	Subject/ Specialization
1.	Higher Secondary	West Bengal Board of Secondary Education	Science stream
2.	Bachelor of Engineering	Bengal engineering College, Shibpur	Mechanical Engineering
3.	Master of Technology	Indian Institute of Technology, Kharagpur	Mechanical Engineering (Specialisation: Machine Design)
4.	Ph. D.	Indian Institute of Technology, Kharagpur	Tribology (Bearing Lubrication)

### *Details of P.G. thesis & doctoral research dissertation:*

- (i) **Master's thesis title:** Design & Fabrication of a compact machine to determine the stress intensity factor of Charpy specimens
- (ii) **Doctoral dissertation title:** Theoretical Analysis of Conical Whirl Instability of unloaded Porous Journal Bearings including the effect of velocity slip.

### **Courses taught till date:**

Sl. No.	Subject Title	Branch & Year	UG / PG Level
1.	Basics of Machine Design (ME-401)	4th Sem. Mechanical	UG
2.	Design of Power Transmission Elements (ME-601)	6th Sem. Mechanical	UG
3.	Tribo-Design of Machine Elements (TME-701)	7th Sem. Mechanical	UG
4.	Fundamentals of Tribology (ME-805 / 1)	8th sem. Mechanical	UG
5.	Advanced Solid Mechanics for Mechanical Design (ME-909)	1st Sem Mechanical (PG)	PG

6. Fatigue, Creep & Fracture (ME- 2nd Sem Mechanical PG  
1013) (PG)

**Sessional Classes undertaken till date:**

- Basics of Machine Design Sessional (UG 5th Sem Mechanical)
- Design of Power Transmission Elements Sessional (UG 6th Sem. Mechanical)
- Tribo-Design of Machine Elements Sessional (UG 7th Sem. Mechanical)
- Computational Methods Sessional (UG 8th Sem. Mechanical)

**Research / Project Guidance till date:**

**Details of Guidance of Doctoral Students:**

Sl. No.	No. of doctoral students registered for Ph.D. / awarded the doctoral degree	Ph. D.		Title of the doctoral thesis work or Tentative topic of doctoral work
		Awarded on	Enrolled / registered on	
01	First Research Scholar(Awarded the doctoral degree)	5th February 2006	-	Topic of the doctoral dissertation: Steady-state & dynamic analysis including stability of hydrodynamic journal bearings with micro-polar lubrication
02	Second Research Scholar (Registered)	-	Registered on 30-07-2012	<b>Topic of the doctoral dissertation:</b> Theoretical Analysis of steady-state and dynamic characteristics including stability of finite hydrodynamic journal bearings under turbulent micro-polar lubrication (In the process of submission)
03	Third Research Scholar(Registered)	-	Registered on 13-05-2016	<b>Topic of the doctoral dissertation:</b> Theoretical Analysis of Steady-state & dynamic characteristics of hydrostatic double-layered Porous Journal Bearings with Slip Flow including additives percolation into pores under coupled-stress lubrication (Ongoing)

**No. of UG thesis guided:** Twenty One (completed) One (ongoing)

**No. of PG thesis guided:** Twenty Three (completed) Two (ongoing)

***List of ME/M.Tech. Thesis Guided (till date):***

<b><i>Sl. No.</i></b>	<b><i>Name of the P.G. student</i></b>	<b><i>Year</i></b>	<b><i>Title of the P.G. Thesis</i></b>
01	Dipankar Sen	2000	Analysis of dynamic characteristics of hydrodynamic journal bearings with the effects of inertia and roughness
02	TarunBera	2001	Analysis of dynamic characteristics of isotropically rough hydrodynamic journal bearings with micro-polar lubricant under translatory whirl motion
03	Konark Sen	2002	On the steady-state performance characteristics of finite hydrodynamic journal bearings with misalignment effect.
04	KalyanMajumdar	2002	On the dynamic characteristics of finite journal bearings lubricated with coupled stress fluid
05	PranabSamanta	2003	Steady-state performance analysis of porous hydrodynamic journal bearings with misalignment effect considering the velocity slip flow
06	PolakiKesaba	2004	Analysis of steady-state performance characteristics of misaligned porous externally pressurized journal bearings with velocity slip
07	RafiqulHaque	2005	Analysis of the steady-state performance characteristics of finite hydrodynamic isotropically rough porous journal bearings with the effect of tangential velocity slip
08	Amit Sarda	2006	On the steady-state performance characteristics of finite hydrodynamic longitudinal rough porous journal bearings with the effect of slip flow
09	Apurba Das	2007	On the static performance characteristics of tilted externally pressurized circular step thrust bearings with the rotation-induced adiabatic thermal effect
10	Tapas Samanta	2007	On the steady-state performance analysis of finite hydrodynamic porous journal bearings with tangential slip flow of coupled stress fluid
11	Surajit Chowdhury	2009	Effect of roughness on the static performance characteristics of finite aerated oil journal bearings

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12	UjjalBaidya	2009	Steady-state characteristics of externally pressurized finite porous journal bearings with percolation of coupled stress fluid
13	BikashRouth	2010	Linear stability analysis of finite rough hydrodynamic journal bearings under micro-polar lubrication
14	Subrata Das	2011	Dynamic analysis of coupled stress fluid-lubricated finite journal bearings with multiple axial grooves
15	SwarupShee	2012	Steady-state analysis of finite magneto hydrodynamic journal bearing under micro-polar lubrication
16	Soumitra Goswami	2013	Linear dynamic analysis of compliant journal bearing of finite width considering deformation of thin liner under micro-polar lubrication
17	Shitendu Some	2014	Steady –state analysis of finite hydrodynamic journal bearing lubricated with coupled stress fluid under turbulent regime
18	Abhishek Ghosh	2015	Linear Dynamic analysis of finite hydrodynamic journal bearing under turbulent lubrication with coupled stress fluid
19	Mukul Ghosh	2016	On the steady state characteristics of finite hydrodynamic journal bearings lubricated with power law fluid with misalignment effect
20	Arun Kumar Dinda	2016	On the steady-state performance characteristics of finite herringbone grooved journal bearings lubricated with coupled stress fluids
21	VinitRanjan	2017	On the steady-state analysis of herringbone grooved journal bearing lubricated with power law fluid
22	Anand Kumar Singh	2017	The steady-state characteristics of wide tapered land slider bearings under elasto-hydrodynamic lubrication with Newtonian fluid
23	Soumik Ghosh	2018	Steady-state performance analysis of Rayleigh step bearing with texture surface
24	Arup Patra	2019	Steady-state characteristics analysis of Rayleigh step bearing lubricated with power law fluid with textured surface (Ongoing)
25	DweepJyotiDhar	2019	Steady-state analysis of finite porous journal bearings under the turbulent regime of couple-stressed fluid with percolation effect (Ongoing)

## Post Doctoral Research if any:

Post-doctoral research experience of two years in the area of "Dynamic characteristics of Multi-recess hydrostatic Journal bearings with lubricant's inertia effect" under the *Research Associateship of Council of Scientific & Industrial Research tenable at Indian Institute of Technology, Kharagpur*

## List of Publications:

### Journals

1. SK Guha. Study of conical whirl instability of externally pressurized porous oil journal bearings considering tangential velocity slip. *Journal of Tribology, Trans. ASME*, 1986, Vol. 108, pp. 256 – 261.
2. SK Guha. Study of conical whirl instability of self-acting porous oil journal bearings considering tangential velocity slip. *Tribology International, Elsevier*, 1986, Vol. 19, No. 2, pp. 72 – 78.
3. SK Guha, NS Rao and BC Majumdar. Study of conical whirl instability of self-acting porous gas journal bearings considering tangential velocity slip. *Journal of Tribology, Trans. ASME*, 1988, Vol. 110, pp. 139 – 143.
4. MK Ghosh, SK Guha and BC Majumdar. Rotordynamic coefficients of multi-recess hybrid bearings: I. *Wear*, 1989, Vol. 129, pp. 245 – 259.
5. SK Guha, MK Ghosh and BC Majumdar. Fluid inertia effect on the rotordynamic coefficients of multi-recess hybrid bearings: II. *Wear*, 1989, Vol. 129, pp. 261- 272.
6. SK Guha. Analysis of dynamic characteristics of hydrodynamic journal bearings with isotropic roughness effects. *Wear*, 1993, 167 (2), 173-179.
7. SK Guha. Analysis of steady-state characteristics of misaligned hydrodynamic journal bearings with isotropic roughness effect. *Tribology International*, 2000, 33 (1), 1-12.
8. S Das, SK Guha, AK Chattopadhyay. On the conical whirl instability of hydrodynamic journal bearings lubricated with micro polar fluids. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 2001, 215(5), 431-439.
9. S Das, SK Guha, AK Chattopadhyay. On the steady-state performance of misaligned hydrodynamic journal bearings lubricated with micro polar fluids. *Tribology International*, 2002, 35 (4), 201-210.
10. S Das, SK Guha, AK Chattopadhyay. Theoretical analysis of stability characteristics of hydrodynamic journal bearings lubricated with micro polar fluids. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 2004, 218(1), 45-56.

11. SK Guha. A theoretical analysis of dynamic characteristics of finite hydrodynamic journal bearings lubricated with coupled stress fluids. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 2004, 218(2), 125-133.
12. S Das, SK Guha, AK Chattopadhyay. Linear stability analysis of hydrodynamic journal bearings under micro polar lubrication. *Tribology International*, 2005, 38 (5), 500-507.
13. R Haque, SK Guha. On the steady-state performance of isotropically rough porous hydrodynamic journal bearings of finite width with slip-flow effect. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 2005, 219(11), 1249-1267.
14. SK Guha, AK Chattopadhyay. On the linear stability analysis of finite-hydrodynamic porous journal bearings under coupled stress lubrication. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 2007, 221(7), 831-840.
15. SK Guha. Linear stability performance analysis of finite hydrostatic porous journal bearings under the coupled stress lubrication with the additives effects into pores. *Tribology International*, 2010, 43 (8), 1294-1306.
16. SK Guha. On the steady-state performance of hydrodynamic flexible journal bearings of finite width lubricated by ferro-fluids with micro-polar effect. *International Journal of Mechanical Engineering & Robotic Research*, 2012, Vol.1, pp.32 – 50.
17. S Das, SK Guha. On the Steady-State Performance Characteristics of Finite Hydrodynamic Journal Bearing under Micro-Polar Lubrication with Turbulent Effect. *International Journal of Mechanical, Industrial Science and Engineering, WASET*, 2013, 7(4), 654-662.
18. AK Dinda and SK Guha. On the steady-state performance characteristics of finite herringbone grooved journal bearing lubricated with couple stress fluids. *Journal of material science and mechanical engineering(JMSME)*, 2016, 3(2), 59-6.
19. A Ghosh, SK Guha. Linear stability analysis of finite hydrodynamic journal bearing under turbulent lubrication with coupled-stress fluid. *Industrial Lubrication and Tribology*, 2016, 68(3), 386-399.
20. S Das, SK Guha. Turbulent effect on the dynamic response coefficients of finite journal bearings lubricated with micro polar fluid. *Procedia technology, Elsevier Ltd.*, 2016, 23, 193-200.
21. S Das, SK Guha. Linear stability analysis of hydrodynamic journal bearing operating under turbulent micro polar lubrication. *Proceedings of the IEEE*, 2017,1, 20-26.
22. S Some and SK Guha. Steady state solution of finite hydrostatic double-layered porous journal bearings with tangential velocity slip including percolation effect of polar additives of coupled stress fluids. *Indian J. Sci. Res.* 2017, 14 (2): 237-244.

23. S Some and SK Guha. Effect of slip and percolation of polar additives of coupled-stress lubricant on the steady-state characteristics of double-layered porous journal bearings. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 2018, 40,68.
24. S Some and SK Guha. Static characteristics of hydrostatic doubled-layered porous journal bearings with slip flow including additives percolation into pores under coupled stress lubrication. *Proceedings of the Institution of Mechanical Engineers-Part J: Journal of Engineering Tribology*, 2018, 232 (8): 927-939.
25. S Some and SK Guha. Comparison between steady-state characteristics of isotropic and anisotropic doubled-layered porous journal bearings under coupled stress lubrication. *IOP Conf. Series: Materials Science and Engineering*, 2018, 377: 2018012106.
26. S Das and SK Guha. Non-Linear Stability Analysis of Micro-polar Fluid Lubricated Journal Bearings with Turbulent Effect. *Industrial Lubrication and Tribology*. (In press)
27. S Das and SK Guha. Numerical Analysis of Steady-state Performance of Misaligned Journal Bearings with Turbulent Effect. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*. (Under review).

### **Book Chapter**

1. Das S and Guha SK. (2018) “Effect of Turbulence on Stability of Journal Bearing with Micropolar Lubrication: Linear and Non-Linear Analysis”. **Book Volume: Advances in Materials, Mechanical and Industrial Engineering, Series: Lectures Notes on Multidisciplinary Industrial Engineering, Springer International Publishing. (In press)**

### **Administrative / Institute Support Work:**

<i>Sl. No.</i>	<i>Post Held</i>	<i>From</i>	<i>To</i>
1.	Head of the Department. of Mechanical Engineering	18-12-2008	20-12-2010
2.	Head examiner of the 5th semester examination in the Department	22-12-2010	Till Now
3.	Member of the Departmental. Purchase Committee	01-01-2015	Till Now
4.	Member of the Senate	2014	Till Now

**Seminar(s) / Short Term Course(s) / Summer School(s) / Winter School(s) attended, if any**

<i>Sl. No.</i>	<i>From</i>	<i>To</i>	<i>Institute/ Industry</i>	<i>Sponsored by</i>	<i>Name of the Course(s)</i>
1.	03-07-2007	05-07-2007	Central Mech Engg Research Institute, Durgpur	Council of Scientific & Industrial Research	National Workshop on Bearing
2.	24-07-2000	26-07-2000	IIT Kanpur	QIP Scheme	Computer aided optimal design techniques using genetic algorithms

## **Research Project(s) / Sponsored Project(s) / Consultancy Activities / Patent(s)**

<i>Sl. No.</i>	<i>Sponsoring Agency</i>	<i>Title of the Project(s)</i>	<i>Period</i>	<i>Amount</i>	<i>Status</i>
1.	University Grant Commission (Ref. NO: F14-30/2003 (SR) Dated 27/03/2003)	Investigation into the steady-state and dynamic characteristics of porous journal bearings with slip flow of coupled stress fluids as lubricant	01-07-2003 to 10-11-2006	Three Lakh	Completed

## **Membership of Professional Bodies**

<i>Sl. No.</i>	<i>Name of the Professional Body</i>	<i>Membership No.</i>	<i>Valid upto</i>
1.	Indian Society for Technical Education	LM11118	Life Member
2.	Indian Society of Mechanical Engineers	L245	Life Member

## **Additional Information**

Acted as a reviewer of papers of the following journals of repute:

- IMECHE Part- J: Journal of Engineering Tribology
- Journal of Tribology, Trans. ASME



- Tribology International, Elsevier
- Industrial Tribology & Lubrication Engg.,