

# Dr. Pranab Kumar Kundu

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Department of Mechanical Engineering  
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## **Areas of Interest**

Microfabrications, Microfluidics, Transport Phenomena, Micro Heat Spreaders, Heat transfer, Thermodynamics, Grinding, Non-traditional Machining Processes.

## **Educational Qualifications**

Exam/Degree	Institute/University	Year
Ph.D (Engg.)	Indian Institute of Technology Kharagpur, India	2015
M.E.	Jadavpur University, Kolkata, India	2002
B.Tech.	Kalyani Government Engineering College (University of Kalyani)	1999

## **Work Experiences**

Duration	Position	Organization
Aug. 1999 – July 2000	Lecturer	Kalyani Government Engineering College, West Bengal- 741235
Jan. 2002 – July 2002	Lecturer	BPPIMT, Kolkata 700052
July 2002 – Oct. 2007	Lecturer	Heritage Institute of Technology, Kolkata
Oct. 2007 – Mar. 2010	Junior Project Officer	IIT Kharagpur
April 2010 – May 2011	Senior Project Officer	IIT Kharagpur
Oct. 2011 – Jan. 2015	Senior Research Fellow	IIT Kharagpur
Feb. 2015 – Jan. 2016	Research Associate	IIT Kharagpur
Jan. 2016 – Nov. 2019	Assistant Professor	NIT Sikkim
March 2019 – Till date	Assistant Professor	MNNIT Allahabad

## **Major Administrative Experiences**

Duration	Position	Organization
July 2005-Oct. 2007	Chairman, Sports Committee	Heritage Institute of Technology, Kolkata
Feb. 2016-Nov. 2019	Faculty In-charge of Games, Sports & Cultural Activities	NIT Sikkim
Jan. 24, 2018 – Nov. 2019	NBA Coordinator	NIT Sikkim

## **Membership of society/position held in society**

- (i) Associate Member of Institute of Engineers (I)
- (ii) Life Member of Association of Engineers (I)

## **Supervisions**

**PhD:** Completed-01, ongoing-02;    **MTech:** Completed-03;    **BTech:** Completed-08

## **Courses Taught**

Thermodynamics  
Fluid Mechanics  
Heat Transfer  
Manufacturing Sc.  
Advanced Manufacturing Processes  
Engineering Mechanics

## **List of Publications**

### **International Journals (SCI/Scopus Index)**

1. P. K. Kundu, S. Chakraborty, S. DasGupta, Experimental Investigation of Enhanced Spreading and Cooling from a Micro-grooved Surface, *Microfluidics and Nanofluidics*, 2011, Volume 11, Number 4, pp 489 – 499. <https://doi.org/10.1007/s10404-011-0814-5>
2. P. K. Kundu, S. Mondal, S. Chakraborty, S. DasGupta, Experimental and Theoretical Evaluation of On-Chip Micro Heat Pipe, *Nanoscale and Microscale Thermophysical Engineering*, 2015, Volume 19, Issue 1, pp 75-93. <https://doi.org/10.1080/15567265.2014.1003342>
3. P. K. Mondal, H. Gaikwad, P. K. Kundu, S. Wongwises, Effect of thermal asymmetries on the entropy generation analysis of a variable viscosity Couette-Poiseuille flow, *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 2017, Volume 231, Issue 5, pp 1011-1024, <https://doi.org/10.1177/0954408916688234>
4. M. Mukhopadhyay, P. K. Kundu, Development of a simple and efficient delivery technique for grinding Ti-6Al-4V. *International Journal of Machining and Machinability of Materials* 2018, Volume 20, Number 4, pp 345-357. <https://doi.org/10.1504/IJMMM.2018.10013115>
5. M. Mukhopadhyay, P. K. Kundu, Laser dressing of grinding wheels – a review. *International Journal of Mechatronics and Manufacturing Systems* 2018, Volume 11, Number 2/3, pp 167 – 181. <https://doi.org/10.1504/IJMMS.2018.10013117>
6. M. Mukhopadhyay, P. K. Kundu, Optimization of Dressing Infeed of Alumina Wheel for Grinding Ti-6Al-4V. *Materials and Manufacturing Processes* 2018, Volume 33, Issue 13, pp 1453–1458. <https://doi.org/10.1080/10426914.2018.1453164>
7. M. Mukhopadhyay, P. K. Kundu and S. Das, Experimental investigation on enhancing grindability using alkaline based fluid for grinding Ti-6Al-4V. *Materials and Manufacturing Processes* 2018, Volume 33, Issue 16, pp 1775–1781. <https://doi.org/10.1080/10426914.2018.1476759>
8. M. Mukhopadhyay, P. K. Kundu, S. Chatterjee and S. Das, “Impact of Dressing Infeed on SiC Wheel for Grinding Ti-6Al-4V”. *Materials and Manufacturing Processes* 2018, Volume 34, Issue 1, pp 54–60. <https://doi.org/10.1080/10426914.2018.1532588>
9. P. Kaushik, Pranab Kumar Mondal, Pranab Kumar Kundu and Somchai Wonwises, “Rotating electroosmotic flow through a polyelectrolyte-grafted microchannel: An analytical solution”. *Physics of Fluids*, volume 31, 2, 022009. <https://aip.scitation.org/doi/abs/10.1063/1.5086327>
10. M. Mukhopadhyay, P. K. Kundu, “Evaluating Application Potentiality of Unconventional Fluids for Grinding Ti-6Al-4V using Alumina Wheel”. *Materials and*

Manufacturing Processes 2019. Volume 34, Issue 10, pp 1151–1159.  
<https://doi.org/10.1080/10426914.2019.1615086>

11. M. Mukhopadhyay, P. K. Kundu, “Enhancing Grindability of Ti-6Al-4V Applying Ecological Fluids under SQL using SiC Wheel”. Springer Nature Applied Sciences 219, 1, 600. <https://doi.org/10.1007/s42452-019-0616-z>
12. M. Mukhopadhyay, P. K. Kundu, “Improving Grindability of Ti-6Al-4V using an Economic and Environmental Friendly Drop by Drop Delivery Technique”, Material Today: Proceedings (2019). In press. <https://doi.org/10.1016/j.matpr.2019.09.072>

### **National Journal**

1. Anil Ghorai, Manish Mukhopadhyay, Pranab Kumar Kundu and Santanu Das, “Experimental Investigation on Enhancing Grindability of Ti-6Al-4V Under Varying Coolant Concentration”, Journal of Association of Engineers (I) 2019, Volume 89, Issue 1&2, pp 47–56. <https://doi.org/10.22485/jaei/2019/v89/i1-2/185674>

### **International Conferences**

1. P. K. Kundu, S. Das, S. Sinha, P. P. Chowdhury, On Grinding Wheel Performance in Dry and Wet Conditions, Proc. 4th Int. Conf. On Mech. Engg., Dec.26-28, 2001, Mech. Engg. Dept., BUET, Dhaka, Bangladesh, Vol. IV, Sec. V, pp 19-24.
2. P. K. Kundu, S. P. Chaudhuri, S. Chakraborty, Computational Modelling of Heat Transfer and Mass Transfer in Laser Surface Melting, Proc. 4th Workshop on Application of Laser in Mechanical Industry (WALMI), Feb.22-24, 2002, Dept. of Mech. Engg., Jadavpur University, Kolkata.
3. P. K. Kundu, S. P. Chaudhuri, S. Chakraborty, Cutting of Mild Steel Specimens in CO<sub>2</sub> Laser, Proc. Int. Conf. On Manufacturing, Aug.9-11, 2002, Industrial & Production Engg. Dept., BUET, Dhaka, Bangladesh, Vol. I, pp 519- 526.
4. M. Mukhopadhyay, P. K. Kundu, Performance Evaluation of Conventional Abrasive Wheels for Grinding Ti-6Al- 4V, IOP Conf. Series: Materials Science and Engineering 377 (2018) 012043. <https://doi.org/10.1088/1757-899X/377/1/012043>.
5. Bishan Raj Rai, Manish Mukhopadhyay and Pranab Kumar Kundu, Evaluating the grinding ratio and surface quality of Ti-6Al-4V under varying grinding pass count and depth of cut, IOP Conf. Series: Journal of Physics 1240 (2019) 012143. <https://doi.org/10.1088/1742-6596/1240/1/012143>.
6. Pranab Kumar Kundu, Bishan Raj Rai and Manish Mukhopadhyay, “Experimental investigation on the effect of grinding infeed and pass counts on grindability of mild steel”. 6th International Conference on Production and Industrial Engineering (CPIE-2019), June 8-10, NIT Jalandhar, India.

### **National Conferences**

1. P. K. Kundu, S. P. Chaudhuri, S. Chakraborty, Study on Temperature During Cutting of Low Carbon Steel Specimens in CO<sub>2</sub> Laser , Proc. 20th All Indian Manufacturing Technology, Design and Research Conference, December 13-15, 2002, Dept. of Prod. Engg., BIT Mesra, Ranchi, pp 349-354.
2. P. K. Kundu, T. Das, A. Mohapatra, S. DasGupta and S. Chakraborty, Initiation of Super Hydrophobic Silicon Surface Using Electrostatic Self-Assembly, CHEMCON, December 27-29, 2011, Bengaluru, India.
3. T. Das, P. K. Kundu, S. DasGupta, S. Chakraborty, Analysis of Fluid Flow and Heat Transfer in Triangular Microgrooves, ChemBridge Conference Proceedings, Kolkata, 2012.
4. M. Mukhopadhyay, P. K. Kundu, Laser Assisted Conditioning of Aluminium Oxide Grinding Wheel using Nd:YAG Laser: A Review, Proc. National Conference on

Advanced Functional Materials Processing & Manufacturing, February 2-3, 2017, CMERI Durgapur, pp 63-66.

### **Books:**

1. S. Sarkar and P. K. Kundu, Engineering Mechanics, Matrix Educare Pvt. Ltd., 2015, 231/A, C. R. Avenue, 700006, ISBN 978-93-80221-01-4 (Pages 640), July 2016.
2. S. Sarkar and P. K. Kundu, Engineering Thermodynamics and Fluid Mechanics, Matrix Educare Pvt. Ltd., 231/A, C. R. Avenue, 700006, ISBN 978-93-80221-21-2 (Pages 670), January 2017.
3. S. Sarkar and P. K. Kundu, Thermal Power Engineering, Matrix Educare Pvt. Ltd., 231/A, C. R. Avenue, 700006, ISBN 978-93-80221-45-8 (Pages 459), January 2017.

### **Book chapters**

1. M. Mukhopadhyay, S. Chatterjee, P. K. Kundu, S. Das, Effect of Dressing Infeed on Alumina Wheel During Grinding Ti-6Al-4V Under Varying Depth of Cut. In: Shunmugam M., Kanthababu M. (eds) Advances in Forming, Machining and Automation. Lecture Notes on Multidisciplinary Industrial Engineering. Springer, Singapore, 2019, pp 551-560. [https://doi.org/10.1007/978-981-32-9417-2\\_46](https://doi.org/10.1007/978-981-32-9417-2_46)

### **Awards and Achievements**

1. Recipient of **Visvesvaraya Young Faculty Research Fellowship**, MEITY (Govt. of India)
2. **Best Paper award** at the International Conference on Mechanical Materials and Renewable Energy, Dec. 8-10, 2017, SMIT Majhitar
3. **Best Paper award** at the International Conference on Materials and Manufacturing Methods (3M – 2019), July 5-7, 2019, NIT Tiruchirappalli, India.
4. National Scholarship Merit Certificate from Education Department, Government of West Bengal.
5. Qualified GATE 2000
6. Institute Fellowship Autumn Semester 2006-2007 in the Department of Mechanical Engineering of IIT Kharagpur
7. Institute Fellowship Autumn Semester 2006-2007 in the Department of Aerospace Engineering of IIT Kharagpur

### **Invited Talks**

At Short term Course on “Advances in Micro System Technologies (AMST)” , Department of Mechanical Engineering, NIT Durgapur, West Bengal, India.

### **Details of Foreign Visit**

**Research Visit:** University of California, Irvine, CA, USA (June – July 2009).

**Date:** 12<sup>th</sup> December 2019

**(Pranab Kumar Kundu)**