Dr. Tushar Banerjee

Current Correspondence Address
Department of Production & Industrial Engineering
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EDUCATIONAL QUALIFICATION

- **PhD** in Manufacturing Specialization **(IIT Kharagpur, 2017)**, Thesis title: Development and Machining Performance of Titanium Nitride-Tungsten Disulphide Composite Coating using Pulsed Direct Current Closed Field Unbalanced Magnetron Sputtering

- **Master of Engineering** in Mechanical Engineering (Production Specialization) **(Jadavpur University, Kolkata, 2011)**, Thesis title: Some Parametric Studies of Electroless Nickel-Cobalt-Phosphorus Coating on Copper Substrate through Design of Experiments

- **Bachelor of Engineering** in Mechanical Engineering **(NIT Agartala, 2008)**

PUBLICATIONS

Papers published in International Journals:

1. **Tushar Banerjee**, A.K. Chattopadhyay **(2018)**, Influence of substrate bias on structural and tribo-mechanical properties of pulsed magnetron sputtered TiN-WS_x hard-lubricious coating, **Tribology International (SCI, Publisher: Elsevier)**, Vol. 123, Pages 81-91.

2. **Tushar Banerjee**, A. K. Chattopadhyay **(2016)**, Structure, mechanical and tribological characterisations of pulsed DC magnetron sputtered TiN-WS_x composite coating, **Vacuum (SCI, Publisher: Elsevier)**, Vol. 130, pp. 93–104.

3. Jhumpa De, **Tushar Banerjee**, Rajat Subhra Sen, Buddhadeb Oraon, Gautam Majumdar **(2016)**, Multi-objective optimization of electroless ternary Nickel–Cobalt– Phosphorous coating using non-dominant sorting genetic algorithm-II, **Engineering Science and Technology, an International Journal (Scopus, Publisher: Elsevier),** Vol. 19, pp. 1526–1533.

4. **Tushar Banerjee**, A. K. Chattopadhyay **(2015)**, Structural, mechanical and tribological properties of pulsed DC magnetron sputtered TiN-WS_x/TiN bilayer coating, **Surface & Coatings Technology (SCI, Publisher: Elsevier)**, Vol. 282, pp. 24–35.

5. **Tushar Banerjee**, A. K. Chattopadhyay **(2014)**, Structural, mechanical and tribological properties of WS_2-Ti composite coating with and without hard under layer of TiN, **Surface & Coatings Technology (SCI, Publisher: Elsevier)**, Vol. 258, pp. 849–860.

6. **Tushar Banerjee,** R. S. Sen, B. Oraon, G. Majumdar **(2013)**, Predicting electroless Ni–Co–P coating using response surface method, **The International Journal of Advanced Manufacturing Technology (SCI, Publisher: Springer)**, Vol. 64, pp. 1729–1736.

Papers published in International Conference Proceedings:

1. **Tushar Banerjee,** A. K. Chattopadhyay, Deposition and dry machining performance of PVD hard-lubricious composite coating, **Proceedings of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016)**, Pages 2063 to 2066, December 16th – 18th, 2016, College of Engineering, Pune, Maharashtra, India.

2. Sandeep Devarakonda, **Tushar Banerjee**, Saranath Bhaduri, A. K. Chattopadhyay, Wear characteristics of CVD Al_2O_3 and PVD TiAlN coatings in high speed machining of medium carbon steel under dry condition, **Proceedings of the 6th International & 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016)**, Pages 1275 to 1279, December 16th – 18th, 2016, College of Engineering, Pune, Maharashtra, India.

3. **Tushar Banerjee,** A. K. Chattopadhyay, On deposition and characterisation of TiN-WS_2 composite coating and its performance evaluation in dry machining of AISI 1060 steel, **Proceedings of the 38th International MATADOR Conference**, Pages 331 to 338, 28th – 30th March, 2015, National Formosa University, Huwei, Taiwan.

4. **Tushar Banerjee**, A. K. Chattopadhyay, On improvement of tribological performance of pulsed DC CFUBM sputtered WS_2 solid lubricant coating through addition of Ti or TiN, **Proceedings of the 5th International & 26th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014)**, Pages 554–1 to 554–6, December 12th – 14th, 2014, Indian Institute of Technology Guwahati, Assam, India.

5. **Tushar Banerjee**, Kundan Kumar Singh, Sadhan K Ghosh, An Overview of the Waste to Energy Facilities in Europe and its potential in India, **Proceedings of the 1st International Conference on Solid Waste Management**, Pages 7 to 11, November 4th – 6th, 2009, Kolkata, West Bengal, India.

6. Kundan Kumar Singh, Navin Kumar, **Tushar Banerjee**, Sadhan K Ghosh, Study of different types of Waste collection system – Waste Bins and Associated Cost, **Proceedings of the 1st International Conference on Solid Waste Management**, Pages 114 to 122, November 4th – 6th, 2009, Kolkata, West Bengal, India.

ACADEMIC WORK EXPERIENCE

Sl.No	Designation and Organization	Nature of Work	From	To
1.	**Assistant Professor (AGP 6000),** Production & Industrial Engineering Department (formerly Manufacturing Engineering Department), NIT Jamshedpur	Teaching, Research and Administrative Work	June, 2018	Ongoing
2.	**Temporary Faculty**, Manufacturing Engineering Department, NIT Jamshedpur	Teaching and Research	August, 2017	May, 2018

INDUSTRIAL WORK EXPERIENCE

Sl.No	Designation and Organization	From	To
1.	**Graduate Engineer Trainee,** Hindustan Motors Limited	September, 2008	April, 2009

COURSES TAUGHT

Theory Courses		
S. No.	**Name of the Course**	**Undergraduate/Postgraduate**
1.	Machine Tools and Machining	Undergraduate
2.	Manufacturing by Shaping and Joining (Casting, Forming, Welding)	Undergraduate
3.	Enterprise Resource Planning	Undergraduate
4.	Total Quality Management	Postgraduate
Laboratory Courses		
S. No.	**Name of the Course**	**Undergraduate/Postgraduate**
1.	Metrology and Machining Laboratory	Undergraduate
2.	Foundry and Welding Laboratory	Undergraduate
3.	Workshop Technology	Undergraduate

ACADEMIC THESIS/PROJECT SUPERVISION

(A) Doctoral Thesis/Project	
Completed	Ongoing
0	01
(B) Postgraduate Thesis/Project	
Completed	Ongoing
05	00
(C) Undergraduate Thesis/Project	
Completed	Ongoing
06	00

RESEARCH GRANTS

Sl. No.	Project Title	Project Scheme	Current Status
1.	Development of wear-resistant and corrosion-resistant electroless coating for different metallic instruments/tools used in rural areas	National Initiative for Design Innovation, Ministry of Human Resource Development, Government of India	Ongoing

RESEARCH EXPERTISE

- Thin Film Deposition Techniques
  - *Physical Vapour Deposition*
  - *Electroless Deposition*

- Performance Evaluation of Cutting Tools in Turning, Drilling Processes
- Material Characterisation Techniques
  - *Scanning Electron Microscopic Analysis*
  - *X-ray Diffraction Analysis*
  - *Raman Spectroscopic Analysis*
  - *X-ray Photoelectron Spectroscopic Analysis*
- Coating Characterisation Techniques
  - *Coating Adhesion Evaluation (Scratch Adhesion and Indentation Adhesion Tests)*
  - *Coating Hardness Evaluation (Vickers Microhardness and Nanoindentation Tests)*
  - *Tribological Test (Pin-on-Disc Configuration)*

ADDITIONAL RESPONSIBILITIES

- Faculty Coordinator of Training and Placement Cell, NIT Jamshedpur
- Faculty Advisor for 2nd Year undergraduate students at Production & Industrial Engineering Department (formerly Manufacturing Engineering Department), NIT Jamshedpur
- Laboratory In-charge for Non-traditional Manufacturing Laboratory and CAD-CAM Laboratory at Production & Industrial Engineering Department (formerly Manufacturing Engineering Department), NIT Jamshedpur
- Member of Disposal Committee at Production & Industrial Engineering Department (formerly Manufacturing Engineering Department), NIT Jamshedpur

SHORT TERM COURSE/WORKSHOP ORGANIZED

- Organized TEQIP-III sponsored six days short term course on **'Recent Developments in Surface Coatings and Composite Materials (RDSCCM-2019)'** from 27th May to 1st June, 2019, at Department of Production and Industrial Engineering, NIT Jamshedpur

AWARDS AND RECOGNITIONS

- Recipient of 'Full Financial Assistance' for presenting research paper at International MATADOR Conference, National Formosa University, Huwei, Yunlin, Taiwan from 28th to 31st March, 2015, awarded by Indian Institute of Technology Kharagpur

- Recipient of 'Research Fellowship' in July 2011 for pursuing PhD at Indian Institute of Technology Kharagpur

MEMBERSHIP OF PROFESSIONAL BODIES

- Institution of Engineers (India)