

Md. Abu Hayat Mithu, PhD

Associate Professor

Department of Industrial and Production Engineering
Shahjalal University of Science and Technology (SUST),
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**RESEARCH FIELD**

Conventional and nonconventional manufacturing process, Micro-manufacturing processes,
Environment conscious manufacturing, Electrochemical dynamics, Process monitoring.

Educational Background**Doctor of Philosophy (PhD)**

January 2008 – March 2011

University of Pisa, Italy

Department of Mechanical, Nuclear and Production Engineering

Degree awarded on 25 March 2011

Thesis: New Methodologies in the Field of Micromanufacturing

Supervisors: Prof. M. Santochi and Prof. G. Tantussi, DIMNP, University of Pisa, Italy

M. Engg. in Industrial and Production Engineering

April 2003 – September 2005

Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh

Department of Industrial and Production Engineering

Degree awarded on 03 September 2005

***Thesis: Effects of Minimum Quantity of Lubrication on Tool Wear and Surface Roughness
in Turning AISI-1040 Steel with Uncoated Carbide Tool***

Supervisor: Prof. N. R. Dhar, IPE, BUET, Dhaka, Bangladesh

B.Sc. (Engg) in Industrial and Production Engineering

April 1996 – February 2002

Shahjalal University of Science & Technology (SUST), Sylhet, Bangladesh

Department of Industrial and Production Engineering

Degree awarded on January 2002

***Thesis: Design and Fabrication of Two Measuring Instruments (Angle Measurement and
Radius Measurement)***

Supervisor: Muhammad Mahamood Hasan, IPE, SUST, Sylhet, Bangladesh

PUBLICATIONS**International Journals**

- Published**
1. **Mithu, M.A.H.**, Fantoni, G., Ciampi, J. "How microtool dimension influences electrochemical micromachining", *International Journal of Advanced Manufacturing Technology*, 2013, DOI 10.1007/s00170-013-5346-6. **2013**.
 2. **Mithu, M.A.H.**, Fantoni, G., Ciampi, J., Santochi, M., "On how tool geometry, applied frequency and machining parameters influence electrochemical microdrilling", *CIRP - Journal of Manufacturing Science and Technology*, Vol. 5, No. 3, pp. 202 – 213,

3. **Mithu, M.A.H.**, Fantoni, G., Ciampi, J., "Fabrication of micro nozzles and micro pockets by electrochemical micromachining", *International Journal of Machining and Machinability of Materials*, Vol. 11, No. 4, pp. 353 – 370, July, **2012**.
4. **Mithu, M.A.H.**, Fantoni, G., "Etching behavior of tungsten microtool and its applications in electrochemical micromachining", *International Journal of Precision Technology*, Vol. 2, No. 4, pp. 301- 312, January, **2012**.
5. M.M.A. Khan, **M.A.H. Mithu**, Zaheed Halim, A. Sayem, "Statistical design approach to process parameter optimization for turning AISI 9310 alloy steel using minimum quantity lubrication environment", *International Journal of Machining and Machinability of Materials*, Vol. 11, No. 2, pp. 154 -182, March, **2012**.
6. **Mithu, M.A.H.**, Sayem, A. and Khan, M.M.A., "Assessment of factors affecting employee appeal and retention of nurses in Bangladesh", *International Journal of Engineering Management and Economics*, Vol. 3, No. 4, pp. 326 - 340, **2012**.
7. **Mithu, M.A.H.**, Fantoni, G., Ciampi, J., "A step towards the inprocess monitoring for electrochemical microdrilling", *International Journal of Advanced Manufacturing Technology*, Vol. 57, pp. 969-982, December, **2011**.
8. **Mithu, M.A.H.**, Fantoni, G., Ciampi, J., "The effect of high frequency and duty cycle in electrochemical microdrilling", *International Journal of Advanced Manufacturing Technology*, Vol. 55, no. 9-12, pp. 921- 933, August, **2011**.
9. M. M. A. Khan, A.B.M. Abdul Malek, **M. A. H. Mithu**, D. K. Das, "Design, fabrication and performance evaluation of natural circulation rectangular box-type solar domestic water heating system" *International Journal of Sustainable Energy*, 29: 3, 164 -177, February, **2010**.
10. M.M.A. Khan, **M.A.H. Mithu**, and N.R. Dhar, "Effects of minimum quantity lubrication (MQL) by vegetable oil-based cutting fluid on turning AISI-9310 alloy steel", *Journal of Material Processing Technology*, Vol. 209, pp. 5573–5583, August, **2009**.
11. **Mithu, M.A.H.**, Khan, M. M. A. and Dhar, N. R., "Effects of Minimum Quantity Lubrication (MQL) on Chip Formation Mode, Tool Wear, and Surface Roughness in Turning AISI-1040 Steel with Uncoated Carbide Tool", *International Journal for Manufacturing Science and Production*, Vol. 9, No. 1-2, pp. 107-118, June, **2008**.
12. N.R. Dhar, M.W. Islam, S. Islam, and **M.A.H. Mithu**, "The Influence of Minimum Quantity of Lubrication (MQL) on Cutting Temperature, Chip and Dimensional Accuracy in Turning AISI-1040 Steel", *Journal of Materials Processing Technology*, Vol. 171, pp. 93-99, January, **2006**.

International Conference

13. **Mithu, M.A.H.**, A. Salman Imtiaz, "Experimental Investigation on the Formation of Conical Shaped Microelectrode by Electrochemical Micromachining Process" *Proceedings of the International Conference on Engineering Research, Innovation and Education*. Bangladesh, pp. 964-970 January, 2013.
14. Adhikari, B.B., Sah, R.K., **Mithu, M.A.H.**, "Study on CNG Station Distributions in Inter-City Network Using ARENA", *Proceedings of the International Conference on Engineering Research, Innovation and Education*. Bangladesh, pp. 863-869, January, 2013.

Article in Progress

Tentative Title

1. Modification of Vitrectomy Needles for Eye-ball operation.

2. Microdrilling on High Corrosion Resistant Materials and comparison with microEDM.
3. Effect of Electrolyte Temperature in Electrochemical Microdrilling.
4. Development of Electrochemical Micromachining Workcell with CNC Machine Augmentation.

WORK EXPERIENCE

Faculty, Associate Professor

Department of Industrial and Production Engineering (IPE)

Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh

- Assistant Professor, 26 December 2006 to 2 November 2011
- Lecturer, 01 March 2004 to 25 December 2006.
- Lectured in diverse areas of Production Engineering such as, Manufacturing Processes-I & II, Material Handling and Maintenance Management, Product Design and Development, Machine Tools, Tool Engineering, Machine Elements Design, Statistical Quality Control, Engineering Statistics.
- Under-graduate, and Post-graduate Syllabus Committee Member.
- Chairman, Exam Committee and Maintenances of IPE machine shop.
- Chief, Advanced Manufacturing Processing Lab, IPE department.

Teaching Assistantship

Department of Industrial and Production Engineering

Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

April 2003 – March 2004

RESEARCH PROJECTS (Completed)

1. *Development of Electrochemical Micromachining Workcell with CNC Machine Augmentation*

Department of Industrial and production Engineering

Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh

This research work has been funded by The Research Center and Bangladesh Higher Education Commission through Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh.

2. *Design and Development of Electrochemical Micromachining Workcell for Electrochemical Micromachining*

Department of Mechanical, Nuclear and Production Engineering (DIMNP)

University of Pisa, Italy.

This research work has been funded by Ministero dell'Istruzione dell'Università e della ricerca, Programmi di ricerca cofinanziati (COFIN), Italia. All sorts of arrangements are provided by Production Section, DIMNP, Università degli Studi di Pisa, Italia.

3. *Microdrilling on High Corrosion Resistant Injection Needle and Modification of Vitrectomy Needles for Eye-ball operation*

Department of Mechanical, Nuclear and Production Engineering (DIMNP)

University of Pisa, Italy

This research work has been funded by Ministero dell'Istruzione dell'Università e della ricerca, Programmi di ricerca cofinanziati (COFIN), Italia. All types of facilities are taken from *Centro Piazza* (Central Research Department), University Medical Hospitals and work was done in

4. *Experimental Investigation on the Formation of Conical Shaped Microelectrode by Electrochemical Micromachining Process*

Department of Industrial and production Engineering
Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh

This research work has been funded by The Research Center and Bangladesh Higher Education Commission through Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh. Research work has been carried out in the Department of Industrial and Production Engineering, SUST, Sylhet, Bangladesh.

5. *Subprojects under MicroECM Projects*

- a) Parametric Analysis on Micro Tool Fabrication for Electrochemical Micromachining
- b) Fabrication of Conical Micro Tool by Electrochemical Conical Microdrilling and Micromilling (Micropockets)
- c) Development of In-process Monitoring System for Electrochemical Microdrilling

Department of Mechanical, Nuclear and Production Engineering (DIMNP)
University of Pisa, Italy

These research works have been funded by Ministero dell'Istruzione dell'Università e della ricerca, Programmi di ricerca cofinanziati (COFIN), Italia.

6. *Effect of Minimum Quantity of Lubrication (MQL) on Tool Wear and Surface Roughness in Turning AISI-1040 Steel with Uncoated Carbide Tool*

Department of Industrial and Production Engineering
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

This research was sponsored by Directorate of Advisory Extension and Research Services (DAERS), BUET, Dhaka, Bangladesh and commissioned by the Department of Industrial and Production Engineering, BUET, Dhaka.

7. *Effect of Cutting Parameters on Chip Formation and Tool Wear in Turning Mild Steel, Aluminum with Uncoated Carbide Tools and Turning Brass with Coated Carbide Tool*

Department of Industrial and Production Engineering
Shahjalal University of Science and Technology, Sylhet, Bangladesh

This research was sponsored by Shah Jalal University of Science and Technology (SUST) Sylhet, Bangladesh and commissioned by the Department of Industrial and Production Engineering, SUST, Sylhet.

8. *Assessment of factors affecting employee appeal and retention of nurses in Bangladesh*

Department of Industrial and Production Engineering
Shahjalal University of Science and Technology, Sylhet, Bangladesh

This research was sponsored by jointly Shah Jalal University of Science and Technology (SUST), and a Private organization and commissioned by the Department of Industrial and Production Engineering, Sylhet.

9. *Study on CNG Station Distributions in Inter-City Network Using ARENA*

Department of Industrial and production Engineering
Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh

This research estimates the optimum number of CNG stations in the selected intercity network and present an investigation prevailing queuing system and performance of the existing CNG filling stations by using ARENA software

EXTRA CURRICULUM ACTIVITIES

Joint Secretary

International Conference on Engineering Research, Innovation and Education (ICERIE 2013)
Shahjalal University of Science and Technology, Sylhet, Bangladesh
January 11 – 13, 2013.

Member, Publication Committee

International Conference on Engineering Research, Innovation and Education (ICERIE 2013)
Shahjalal University of Science and Technology, Sylhet, Bangladesh
January 11 – 13, 2013.

Reviewer

Non-professional reviewer of different internationally recognized journals.

LANGUAGE PROFICIENCY

Bengali Mother language

English Fluent in all 4 skills (reading, writing, speaking and listening)

Italian Average on reading, writing and speaking, listening

PERSONAL DETAILS

- Name : Md. Abu Hayat Mithu
- Father : Md. Abdul Malek Bhuiyan (Late)
- Mother: Habiba Akter Khatun
- Spouse: Shamsunnaher Aysa
- Daughter: Mrinmoyee Hayat
- Date of Birth : 15 May 1978
- Nationality : Bangladeshi
- Religion : Islam (Sunni)
- Marital Status : Married