

PROMOTION RECOMMENDATION  
University of Michigan-Flint  
College of Arts and Sciences  
Department of Computer Science, Engineering and Physics

Quamrul H. Mazumder, assistant professor of mechanical engineering, Department of Computer Science, Engineering and Physics, College of Arts and Sciences, is recommended for promotion to associate professor of mechanical engineering, with tenure, Department of Computer Science, Engineering and Physics, College of Arts and Sciences.

Academic Degrees:

Ph.D.	2004	The University of Tulsa, Tulsa, Oklahoma
M.B.A.	1998	Oklahoma State University, Stillwater, Oklahoma
M.S.	1988	South Dakota State University, Brookings, South Dakota
B.S.	1982	Bangladesh Agricultural University, Mymensing, Bangladesh

Professional Record:

2006 – Present	Assistant Professor of Mechanical Engineering, College of Arts and Sciences, University of Michigan-Flint
2005 – 2006	Assistant Professor of Mechanical Engineering Technology, Pittsburg State University, Pittsburg, Kansas

Summary of Evaluation:

Teaching – Professor Mazumder has taught over a dozen courses, developed curriculum in mechanical engineering, advised and recruited students tirelessly, and consistently honed his pedagogy to balance necessary rigor with the needs of our student population. Students and peers alike praise his efforts as a committed, gifted teacher.

Research – Professor Mazumder has developed dual lines of research in fluid dynamics and in engineering education. Peer evaluators praise his innovative work, which frequently involves students in undergraduate research. With ten refereed articles and one book published since 2005, Professor Mazumder's record is a fine one that bodes well for future productivity.

Recent and Significant Publications:

*Books Published:*

Mazumder, Quamrul H. Prediction of Erosion in Particulated Multiphase Flows, VDM Publishing Company, ISBN 978-3-639-0263-2. July 2010.

*Refereed Journal Papers Published or Accepted for Publication:*

Mazumder, Quamrul H. "CFD Analysis and Validation of Single and Multiphase Flow Behavior in an Elbow," *Engineering Applications of Computational Fluid Mechanics*, The Hong Kong Polytechnic University, Hong Kong, Paper Ref no. Ref No: M225201105, Accepted for Publication 2011.

- Mazumder, Quamrul H. and Siddique, Saiful. "CFD Analysis of Two-Phase Flow Characteristics in a 90 Degree Elbow," *The Journal of Computational Multiphase Flow*, Multi-Science Publishing, Volume 3, Number 3. 2011.
- Mazumder, Quamrul H. and Aluko, Olanrewaju. "The Accuracy of Characteristic Length method on Failure Prediction of Composite Pinned Joints." *Journal of Mechanics Engineering and Automation*, David Publishing Company. Accepted for Publication June 2011.
- Mazumder, Quamrul H., McLaury, B., Shirazi, S., Viswanathan V., and Santos, G. "Distribution of Sand Particles in Horizontal and Vertical Multiphase Flow in Pipes and the Effects of Sand Erosion." *ASME Journal of Energy Resources and Technology*, Volume 133, pages 02300101 - 0230010. June 2011.
- Mazumder, Quamrul H. "Fostering Passion Among First Year Engineering Students." *American Journal of Engineering Education*, Volume 1, Number 1, pages 21-34. December 2010.
- Mazumder, Quamrul H. "A Comparative Analysis and Evaluation of Different Approaches of Globalization of Engineering Curriculum in the USA." *International Journal of Modern Engineering*, Volume 10, Number 1. Spring/Summer 2009.
- Mazumder, Quamrul H., Shirazi, S., and McLaury, B. "Experimental Investigation of the Location of Maximum Erosive Wear Damage in Elbows." *Journal of Pressure Vessel and Technology*, Volume 130, Number 1, pages 113031- 38. February 2008.
- Mazumder, Quamrul H., Shirazi, S., and McLaury, B. "Prediction of Solid Particle Erosive Wear of Elbows in Multiphase Annular Flow-Model Development and Experimental Validations." *Journal of Energy Resources and Technology*, Volume 130, Issue 2, 023001-1 to 1-10. June 2008.
- Mazumder, Quamrul H. "Prediction of Erosion Due to Solid Particle Impact in Single-Phase and Multiphase Flows." *Journal of Pressure Vessel and Technology*, Volume 129, Number 4, p 576-582. November 2007.
- Mazumder, Quamrul H., Shirazi, S., McLaury, B., Rybicki, E., and Shadley, J. "Development and Validation of a Mechanistic Model to Predict Solid Particle Erosion in Multiphase Flow." *Journal of Wear*, Volume 259, Issue 1-6, pages 203-207. July-August 2005.

*Refereed Conference Proceedings Published or Accepted for Publication:*

- Mazumder, Quamrul H. and Ainsworth, Anita. "Metacognition Strategies to Improve Confidence and Academic Performance of First Year Engineering Students." Paper number 83, American Society of Engineering Education, North Central Section Conference, Midland, Michigan. April 1-2, 2011.
- Mazumder, Quamrul H. "Improvement of Engagement and Participation of First Year Engineering Students Through Metacognition Learning Tool." Paper number 81, American Society of Engineering Education, North Central Section Conference, Midland, Michigan. April 1-2, 2011.
- Mazumder, Quamrul H. "Metacognition Approaches to Enhance Learning Effectiveness in Engineering Classroom." World Congress on Engineering, London, UK. June 30-July 2, 2010.
- Mazumder, Quamrul H. and Aluko, Olanrewaju. "The Accuracy of Failure Prediction of Composite Pinned Joint by Characteristic Length Method." World Congress on Engineering, 2010, London, UK. June 30-July 2, 2010.
- Mazumder, Quamrul H. and Ainsworth, Anita. "Use of Metacognition Tools to Improve Student Learning." Paper number AC2010-1265, ASEE Annual Conference, Louisville, KY. June 20-23, 2010.
- Mazumder, Quamrul H. and Finney, Mary Jo. "Factors Affecting Passion Towards Learning in Engineering Classroom." Paper number CICE-2010-650, Canada International Conference on Education, Toronto, Canada. April 26-28, 2010.

- Mazumder, Quamrul H. and Castro-Cedeno, Mario. "Motivation and Maturity Level of Engineering and Engineering Technology Students With and Without Co-op Experience." Paper number AC2010-82, ASEE Annual Conference, Louisville, KY. June 20-23, 2010.
- Mazumder, Quamrul H. and Aluko, Olanrewaju. "A Pre-Engineering Program to Motivate High School Students Towards Engineering." AC2010-1265, ASEE Annual Conference, Louisville, KY. June 20-23, 2010.
- Mazumder, Quamrul H. "Evaluation of Magnitude and Location of Solid Particle Erosive Wear in an Elbow Geometry Using CFD Analysis." Paper number ASME FEDSM 2009-78282. 2009 ASME Summer Meeting, Vail, Colorado. August 2-5, 2009.
- Mazumder, Quamrul H., Kolavennu, Panini, Das, Susanta K. and Berry, K. Joel. "Hydrogen Generation On-Site by Steam Reforming of Hydrocarbons for High Temperature PEM Fuel Cell." Paper number A-110-0012-00197, HFC2009 Conference, Vancouver, British Columbia, Canada. May 31-June 3, 2009.
- Mazumder, Quamrul, H. "Integration of Computational Fluid Dynamics Analysis in Undergraduate Research Program." Paper number F-73, ASEE North Central Section Conference, Grand Rapids, MI. April 3-4, 2009.
- Mazumder, Quamrul H. "A Comparative Analysis and Evaluation of Different Approaches of Globalization of Engineering Curriculum in the USA." Paper number 115, IJME 2008 Conference, Nashville, TN. November 2008.
- Mazumder, Quamrul H. and Baishya, Dhruva. "Globalization of Engineering Education: Are We Preparing Students to Succeed in the Global Economy?" Paper number AC 2008-752, ASEE Annual Conference, Pittsburgh, PA. June 24-27, 2008.
- Mazumder, Quamrul H., McLaury, B., Viswanath, V., and Shirazi, S. "Effect of Upstream Pipe Orientation on Erosion/Corrosion in Bends for Annular Flow." Paper 06572, Corrosion 2006, San Diego, CA. March 2006.
- Mazumder, Quamrul H. "Prediction of Erosion Due to Solid Particle Impact in Single-Phase and Multiphase Flows." Paper number IMECE2005-75948, ASME International Mechanical Engineering Congress and Exposition, Orlando, Florida. November 2005.
- Mazumder, Quamrul H., McLaury, B., Shirazi, S., Viswanath, V., and Santos, G. "Distribution of Sand Particles in Horizontal and Vertical Annular Multiphase Flow in Pipes and Their Effects on Sand Erosion." International Conference of Multiphase Technology, BHR Group (UK), Barcelona, Spain. May 2005.

Service – Professor Mazumder is among the more visible junior faculty working highly effectively in service activities to the University and to his profession and community. He has substantive committee work to his credit at the Department and College levels. He has been active in general education reform efforts and also on the College's Curriculum Committee. Professional and community ties are extensive and create meaningful links between these groups and the University

#### External Reviewers:

Reviewer (A):

"... some of his works published as first author in the *Journal of Pressure Vessel and Technology*, in particular the papers entitled 'Experimental Investigation of The Location of Maximum Erosive Wear Damage in Elbows' and 'Prediction of Erosion Due to Solid Particle Impact in Single-Phase and Multiphase Flows' are significant works."

Reviewer (B):

"The quality of his Scholarly [sic] work is outstanding as evidenced by his publication records. He was able to publish 10 journal papers and 18 conference papers in last five years. ... Overall my assessment of scholarly and service accomplishments of Dr. Mazumder is 'outstanding' and praiseworthy as an assistant professor in five years' timeframe. His potential for continued research and commitment is also very high."

Reviewer (C):

"Professor Mazumder has generated an impressive body of work. He has published one book, ten peer reviewed journal articles, eighteen refereed conference papers and nine student co-authored conference papers. Dr. Mazumder's research focuses on an important area, erosion damage in the pipe wall due to solid particle impact. ... He is certainly considered as a leader in this area."

Reviewer (D):

"Since 2007, Professor Mazumder has listed nine articles and 12 conference papers, .... Six articles are related to his primary research interest (CFD), two are general in nature (failure analysis and educational issues), and one article involves 'experimental' work."

Reviewer (E):

"Professor Mazumder [sic] research on pipe erosion is innovative and has important practical applications."

Reviewer (F):

"... my impressions about the scholarly impact of his work on erosion are excellent. A search on Google Advanced Scholar showed his publications on erosion have been cited a total of 45 times as of today. This is very good. One publication had 14 citations and others had 12, 8, and 7. This shows a strong interest in all of his work."

Summary of Recommendation:

Professor Mazumder shines in service and as a teacher and scholar. Based on the unanimous recommendation of his department and the CAS Executive Committee, I warmly and enthusiastically recommend the promotion of Quamrul H. Mazumder to the rank of associate professor of mechanical engineering, with tenure, Department of Computer Science, Engineering and Physics, College of Arts and Sciences.

Recommended by:



D. J. Trzela, Dean  
College of Arts and Sciences

Recommendation endorsed by:



Gerard Voland, Provost and  
Vice Chancellor for Academic Affairs



Ruth J. Person, Chancellor  
University of Michigan-Flint

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