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SUMMARY

Dr. Fazleena Badurdeen is an Associate Professor in the Department of Mechanical Engineering at the University of Kentucky and also serves as the Director of Graduate Studies for the Manufacturing Systems Engineering MS Program. Dr. Badurdeen's research is focused on the design and management of manufacturing systems and supply chains to enhance efficiency, productivity and sustainability performance. More recent research is in the area of developing tools and techniques to enable value creation through sustainable manufacturing, including methods to facilitate more sustainable product design for closed-loop material flow. Her research has been supported by more than \$10.7 million in external funding as PI or Co-PI from NSF, AFRL, NIST, DOE, US Army, DMDII as well as from industry. She has mentored undergraduate and graduate students (4 Ph.D., 17 M.S. Thesis and 8 M.S. Non-thesis) which have so far led to 31 journal publications, 13 book chapters, and 80 refereed conference proceedings. Dr. Badurdeen's team has received numerous awards in recognition for the quality of the work that has been produced. She teaches undergraduate and graduate courses in the manufacturing systems area and her initiatives to improve teaching effectiveness have been recognized through national awards.

EDUCATION

Ph.D.: Integrated Engineering , Ohio University	2005
MS: Industrial Engineering , Ohio University	2002
MBA: Business Administration , Postgraduate Institute of Management, Sri Lanka	2000
B.Sc.: Engineering University of Peradeniya, Sri Lanka	1996

ACADEMIC APPOINTMENTS

10/2013 - Present	Director of Graduate Studies , Manufacturing Systems Engineering (MFS) Program, Department of Mechanical Engineering, University of Kentucky
7/2011 – Present	Associate Professor of Mechanical Engineering, University of Kentucky
8/2005 – 6/2011	Assistant Professor of Mechanical Engineering, University of Kentucky
W/F 2003, S2002	Instructor , Department of Industrial and Manufacturing Systems Engineering, Ohio University
12/1997 – 8/2000	Lecturer , Department of Production Engineering, University of Peradeniya, Sri Lanka

- 2/1999 – 12/1999 **Visiting Lecturer**, Department of Science, University of Peradeniya, Sri Lanka
- 9/1996 – 12/1997 **Instructor**, Department of Production Engineering, University of Peradeniya, Sri Lanka

OTHER EDUCATION & TRAINING

- 2/1999 – 3/1999 Intensive Training Program in Ergonomics
Luleå University of Technology, Luleå, Sweden
- 9/1989 – 6/1991 Chartered Institute of Management Accountants (CIMA)
United Kingdom (Passed Finalist)

RESEARCH PUBLICATIONS

(Including Books, Book Chapters, Refereed Journal and Conference Papers)

(a) Books

1. **Badurdeen, F.** and Goldsby, T.J. “*Design and Management of Sustainable Supply Chains*”, to be published by Cambridge University Press, Anticipated publication date: Summer 2017.

(b) Edited Books: Special Issue of Journal

1. **Badurdeen, F.** (Editor), “Sustainable Manufacturing: A Systems Perspective”, *Special Issue of the International Journal of Strategic Engineering Asset Management*, Vol. 2, No. 3, Inderscience Publishers, 2015, 83 pages.

(c) Book Chapters

1. **Badurdeen, F.**, Jawahir, I.S. and Rouch, K., “A Metrics-based Evaluation of Sustainable Manufacturing at Product and Process Levels”, *Encyclopedia of Sustainable Technologies*, (Ed. S. Sikdar), Elsevier Publishers. In Press.
2. Goldsby, T.J. **Badurdeen, F.**, “Energy Efficiency in the Supply Chain”, *Energy Efficient Manufacturing with Applications*, (Eds: J. Sutherland, D. Dornfeld, D. and B. Linke), Scrivener Publishers. In Press.
3. Amundson, J., Sukumara, S., Seay, S. and **Badurdeen, F.**, Decision Support Models for Integrated Design of Bioenergy Supply Chains, *Handbook of Bioenergy: Bioenergy Supply Chain Models and Applications*, (Eds: Eksioglu, S., Rebenack, S. and Pardalos, P. M.), Springer Publishers, 2015, pp. 163-190
4. **Badurdeen, F.**, Shuaib, M., Lu, T. and I.S. Jawahir, “Sustainable Value Creation in Manufacturing at Product and Process Levels: Metrics-based Evaluation”, *Handbook of*

Manufacturing Engineering and Technology (Ed: A.Y.C. Nee), Springer Publishers, 2014, pp. 3343-3376.

5. **Badurdeen, F.**, Thomas J. Goldsby, Deepak Iyengar and I. S. Jawahir, "Transforming Supply Chains to Create Sustainable Value for All Stakeholders", *Treatise on Sustainability Science and Engineering*, (Eds: I.S. Jawahir, S. Sikdar and Y. Huang), Springer Publishers (ISBN 978-94-007-6228-2), pp. 311-338, 2013.
6. Huang, A., K. Wijekoon, and **Badurdeen, F.**, "Goal Programming-based Approach to Identify Sustainable Product Service System Designs", *Leveraging Technology for a Sustainable World*, (Eds: D. Dornfeld, D. and B. Linke), Springer Publishers, 2012, pp. 19-24.
7. **Badurdeen, F.**, A.D. Jayal and I.S. Jawahir, "Towards a systems approach for developing sustainable products from sustainable manufacturing", *Designing Sustainable Products, Services and Manufacturing Systems*, Chakrabarti, A., Rachuri, S., Sarkar, P., and Kota, S., (eds.), Research Publishing Services, 2010, Singapore.
8. Lu, T., A. Gupta, A. D. Jayal, **Badurdeen, F.**, S. C. Feng, O. W. Dillon, Jr., and I. S. Jawahir, (2011), "A framework for product and process metrics for sustainable manufacturing", *Advances in Sustainable Manufacturing*, (Eds: Seliger, G., Khraisheh, M.K. and Jawahir, I.S.), Springer Publishers, 2011, pp. 333-338.
9. Zhang X., Lu, T., Shuaib, M., Rotella, G., Huang, A., Feng, S.C., Rouch, K., **Badurdeen, F.** and Jawahir, I.S., "A Metrics-Based Methodology for Establishing Product Sustainability Index (*ProdSI*) for Manufactured Products", *Leveraging Technology for a Sustainable World*, (Eds: D. Dornfeld and B. Linke), Springer Publishers, 2012, pp. 435-441.
10. **Badurdeen, F.**, M. Shuaib, and J. P. Liyanage, "Risk Modeling and Analysis for Sustainable Asset Management", *Engineering Asset Management and Infrastructure Sustainability*, (Eds: J. Mathew, L. Ma, A. Tan, M. Weijnen and J. Lee), Springer Publishers, 2012, pp. 61-75.
11. Shuaib, M., H. Metta, T. Lu, **Badurdeen, F.**, I.S. Jawahir, T. Goldsby, "Design and Performance Evaluation of Sustainable Supply Chains: Approach and Methodologies", *Advances in Sustainable Manufacturing*, (Eds: G. Seliger, M.K. Khraisheh and I.S. Jawahir), Springer Publishers, 2011, pp. 345-350.
12. **Badurdeen, F.**, H. Metta and B. Stump, "Simulation Models to Demonstrate Mass Customization Strategies", *Advances in Mass Customization and Personalization*, (Eds: F. Piller and M. Tseng), Volume 3, World Scientific Publishing, 2010, pp: 1063-1078.
13. Liyanage, J.P., **Badurdeen, F.**, and R.M.C. Ratnayake, "Industrial Asset Maintenance and Sustainability Performance: Economical, Environmental and Societal Implications", *Handbook on Maintenance Management and Engineering*, (Eds: Ben-Daya, M., Duffuaa, S.O., Raouf, A., Knezevic, J. and Ait-Kadi,D.), Springer Publishing, 2009, pp: 665-694.

(d) Refereed Journal Papers

Published Journal Papers

1. Huang, A. and **Badurdeen, F.**, "Sustainable Manufacturing Performance Evaluation at the Enterprise Level: Integrating Product, Process and Systems Metrics", *ASTM Journal of Smart and Sustainable Manufacturing Systems*, In Press.
2. K. Wijekoon, A. Huang and **Badurdeen, F.**, Approach and Model Development to Evaluate and Optimize Sustainability Performance of Customizable Product Service Systems, *International Journal of Strategic Engineering Asset Management*, In Press.
3. Bilge, P., **Badurdeen, F.**, Seliger, G. and Jawahir, I.S., "A Novel Manufacturing Architecture for Sustainable Value Creation", *Annals of the CIRP*, Vol. 65, No. 1, 2016, pp. 455-458.
4. Bilge, P., **Badurdeen, F.**, Seliger, G. and Jawahir, I.S., "Conceptual Modeling of Interactions among Value Creation Factors for Improved Sustainable Value Creation, *Journal of Strategic Engineering Asset Management, Special Issue on Sustainable Manufacturing*, Vol. 2, No. 3, 2015, pp. 287-311.
5. Sukumara, S., Amundson, J., **Badurdeen, F.** and Seay, J. "A Comparative Techno-economic Analysis Tool to Validate Long-term Viability of Emerging Biorefining Processes", *Clean Technology and Environmental Policy*, Vol. 17, No. 7, 2015, pp. 1793-1806.
6. Shuaib, M., Seevers, D., Zhang X., **Badurdeen, F.**, Rouch, K. and Jawahir, I.S., "Product Sustainability Index (ProdSI): A Metrics-based Framework to Evaluate the Total Life Cycle Sustainability of Manufactured Products", *Journal of Industrial Ecology*, Vol. 18, No. 4, 2014, pp. 491-507.
7. Seay, J. and **Badurdeen, F.**, "Current trends and directions in achieving sustainability in the biofuel and bioenergy supply chain", *Current Opinion in Chemical Engineering*, Vol. 6, 2014, pp. 55-60. (Invited paper).
8. Faulkner, W. and **Badurdeen, F.**, "Sustainable Value Stream Mapping (Sus-VSM): methodology to visualize and assess manufacturing sustainability performance", *Journal of Cleaner Production*, Vol. 85, No. 15, 2014, pp. 8-18.
9. Brown, A., Amundson, J. and **Badurdeen, F.**, "Sustainable value stream mapping (Sus-VSM) in different manufacturing system configurations: application case studies", *Journal of Cleaner Production*, Vol. 85, No. 15, 2014, pp. 164-179.
10. Roy, U., M. M. Baysal, M.I. Sarigecili, M. Shuaib, **Badurdeen, F.**, and I.S. Jawahir, "Development of the Integrated Product Information Model for Product Sustainability Assessment", *International Journal of Sustainable Manufacturing*, Vol. 3, No. 2, 2014, pp. 156-169.
11. Sukumara, S., W. Faulkner, J. Amundson, **Badurdeen, F.**, and J. Seay, "A multidisciplinary decision support tool for evaluating multiple biorefinery conversion

- technologies and supply chain performance”, *Clean Technologies and Environmental Policy*, Vol. 16, Issue 6, 2014, pp.1027-1044.
12. **Badurdeen, F.**, M. Shuaib, K. Wijekoon, A. Brown, W. Faulkner, J. Amundson, I.S. Jawahir, T.J. Goldsby and D. Iyengar, Quantitative Modeling and Analysis of Supply Chain Risks using Bayesian Theory, *Journal of Manufacturing Technology Management*, Vol. 25 No. 5, 2014, pp. 631-654.
 13. Metta, H. and **Badurdeen, F.**, “Integrating Sustainable Product and Supply Chain Design: Modeling Issues and Challenges”, *IEEE Transactions on Engineering Management*, Vol. 60, No. 2, 2013, pp. 438-446.
 14. Hassan, M.F., M. Z. M. Saman, S. Sharif, B. Omar, X. Zhang, **Badurdeen, F.**, and I. S. Jawahir, “Selection of Product Design Configuration for Improved Sustainability using the Product Sustainability Index (*ProdSI*) Scoring Method”, *Applied Mechanics and Materials*, Vol. 315, 2013, pp. 51-56.
 15. Metta, M. and **Badurdeen, F.**, “The Influence of Product Design on the Sustainability Performance of the Supply Chain”, *CSCMP Explores*, Vol. 9, Winter 2012.
 16. Sukumara, S., J. Amundson, W. Faulkner, **Badurdeen, F.**, J. Seay, “Multidisciplinary Approach in Developing Region Specific Optimization Tool for Sustainable Biorefining”, *Computer Aided Chemical Engineering*, Vol. 30, 2012, pp. 157-161.
 17. Amundson, J., W. Faulkner, S. Sukumara, J. Seay, **Badurdeen, F.**, “A Bayesian Network Based Approach for Risk Modeling to Aid in Development of Sustainable Biomass Supply Chains”, *Computer Aided Chemical Engineering*, Volume 30, 2012, pp. 152-156.
 18. **Badurdeen, F.** and J.P. Liyanage, “Sustainable Value Co-creation through Mass Customization: A Framework”, *International Journal of Sustainable Manufacturing*, Vol. 2, Nos. 2/3, 2011, pp. 180-203.
 19. Marksberry, P., **Badurdeen, F.**, and A. Maginnis, “An investigation of Toyota’s social-technical systems in production leveling”, *Journal of Manufacturing Technology Management*, Vol. 22 No. 5, 2011, pp. 604-620. (**Received Emerald Literati Award for Best Papers Published in Emerald Journals in 2011**).
 20. **Badurdeen, F.**, K. Wijekoon and P. Marksberry, “An Analytical Hierarchy Process-based Approach to Evaluating Organizational Value Systems for Effective Lean Transformations”, *Journal of Manufacturing Technology Management*, Vol. 22, No. 1, 2011, pp. 46-65.
 21. Marksberry, P., K. Kreamle, **Badurdeen, F.**, and B. Gregory, “Management Directed Kaizen – Toyota’s Jishuken Process for Management Development”, *Journal of Manufacturing Technology Management*, Vol. 21, No 6, 2010, pp. 670-686.
 22. Jayal, A.D., **Badurdeen, F.**, O. W. Dillon, Jr. and I. S. Jawahir, “New Challenges for Sustainable Manufacturing: Modeling Issues at the Product, Process and System Levels”, *CIRP Journal of Manufacturing Science and Technology*, Vol. 2, No. 3, 2010, pp. 144-152. (Listed among *most cited papers since 2009 by CIRP Journal JMST*).

23. **Badurdeen, F.**, P. Marksberry, A. Hall and B. Gregory, (2010), Teaching Lean Manufacturing with Simulations and Games: A Survey and Future Directions, *International Journal of Simulation and Gaming*, Vol. 41, Issue 4, pp. 465 – 486.
24. **Badurdeen, F.**, D. Iyengar, T. Goldsby, H. Metta, S. Gupta and I.S. Jawahir, “Extending Total Life-cycle Thinking to Supply Chain Design”, *International Journal of Product Lifecycle Management*, Vol. 4, Nos. 1/2/3, 2009, pp. 49-67.
25. **Badurdeen, F.**, P. Marksberry, A. Hall and B. Gregory, “No Instant Prairie: Planting Lean to Grow Innovation”, *International Journal of Collaborative Enterprises*, Vol. 1, No. 1, 2009, pp. 22-38.
26. Stump, B. and **Badurdeen, F.**, “Integrating Lean and Other Strategies for Mass Customization Manufacturing: A Case Study”, *Journal of Intelligent Manufacturing*, Vol. 23, Issue 1, 2012, pp. 109-124.
27. Metta, H. and **Badurdeen, F.**, “Multi-objective Adaptive Job Scheduling using Genetic Algorithms”, *Transactions of NAMRI/SME*, Vol. 37, 2009, pp. 2389-248.
28. Thuramalla, S. and **Badurdeen, F.**, “Establishing Rules to Design a Minicell-based Manufacturing System for Mass Customization”, *International Journal of Agile Systems and Management*, Vol. 3, Nos. 1/2, 2008, pp. 93-111.
29. **Badurdeen, F.** and D.T. Masel, (2008), “A Genetic Algorithm-based Approach to Design Minicells for Mass Customization Manufacturing”, *International Journal of Mass Customization*, Vol. 2, Issue 3/4, 2008, pp. 282 – 302.
30. Suer, G., **Badurdeen, F.**, and N. Dissanayake, “Capacitated Lot Sizing by Using Multi-Chromosome Crossover Strategy”, *Journal of Intelligent Manufacturing*, Vol. 19, No. 3, 2008, pp. 273 – 282.
31. **Badurdeen, F.** and D.T. Masel, “A Modular Minicell Configuration for Mass Customization Manufacturing”, *International Journal of Mass Customization*, Vol. 2, Nos. 1/2, 2007, pp. 39-56.

Journal Papers Submitted and Under Review

1. Bradley, R., Jawahir, I.S., **Badurdeen, F.**, and Rouch, K., “A Total Life-Cycle Cost Model (TLCCM) for the Circular Economy and its Application to Post-Recovery Resource Allocation”, *Resources, Conservation and Recycling*, Under Review.
2. Huang, A., and **Badurdeen, F.**, “Metrics-based Approach to Sustainable Manufacturing Performance Evaluation at the Line and Plant Levels”, *Journal of Cleaner Production*, Under Review.
3. Sparks, D. and **Badurdeen, F.**, “Assessing Supply Chain Sustainability Performance with Value Stream Mapping”, *International Journal of Production Economics*, Under Review.
4. Brown, A. and **Badurdeen, F.**, “A Structured Literature Review of Supply Chain Resilience-enabling Factors and their Role in Supplier Segmentation”, *European Journal of Logistics, Purchasing, and Supply Chain Management*. Under Review.

5. Fadnavis, S. and **Badurdeen, F.**, “Role of Organizational Culture Traits in Enabling Structured Problem Solving for Lean Transformations”, *Journal of Manufacturing Technology and Management*, Under Review.

Journal Papers in Preparation to be Submitted

1. **Badurdeen, F.**, Aydin, R., Brown, A. and Jawahir, I.S., “Multiple Lifecycle-based Approach to Sustainable Product Configuration Design Optimization”. Pending submission to the *Journal of Cleaner Production*.
2. Calik, E. and **Badurdeen, F.**, “Cooperation Networks and Sustainable Innovation: A Conceptual Model with Organizational Factors”. In preparation for submission to *International Journal of Technology Management*.
3. **Badurdeen, F.**, Gregory, R. and Sekulic, D., “Developing and Teaching a Multidisciplinary Course in Systems Thinking for Sustainability”. In preparation for submission to *Harvard Education Review*.
4. **Badurdeen, F.**, Brown, A., Goldsby, T. and Boden, B., “Multi-tier Supply Chain Risk Modeling and Analysis: Make vs. Buy Decision Assessment using Bayesian Belief Networks”. In preparation for submission to *International Journal of Production Research*.
5. Lu, T., M. Shuaib, G. Rotella, S.C. Feng, **Badurdeen, F.**, O.W. Dillon, Jr., K.E. Rouch, I.S. Jawahir, “Sustainability Evaluation of Manufacturing Processes Using a Metric-based Process Sustainability Index (*ProcSI*) – Part 1: Development of a Comprehensive Methodology”, In preparation for submission to *Journal of Cleaner Production*.
6. Lu, T., M. Shuaib, G. Rotella, S.C. Feng, **Badurdeen, F.**, O.W. Dillon, Jr., K.E. Rouch, I.S. Jawahir, “Sustainability Evaluation of Manufacturing Processes Using a Metric-based Process Sustainability Index (*ProcSI*) – Part 2: Method Applications and Validation”, In preparation for submission to *Journal of Cleaner Production*.

(e) Refereed Conference Papers

Published Conference Papers

- Huang, A. and **Badurdeen, F.**, “Metrics-based Hierarchical Approach for Sustainable Manufacturing System Performance Evaluation”, *Proceedings of the 24th International Conference on Production Research*, July 31 – August 3, 2017, Poznan, Poland.
- Hapuwatte, B.M., **Badurdeen, F.**, and Jawahir, I.S., “Metrics-based Integrated Predictive Performance Models for Optimized Sustainable Product Design”, *Proceedings of the 4th International Conference on Sustainable Design and Manufacturing*, April 26-28, 2017, Bologna, Italy. (**Keynote Paper**)
- Brown, A. and **Badurdeen, F.**, “Supplier Segmentation Method for Selection of Resilience-Enabling Procurement Strategies”, *Proceedings of IISE Annual Conference and Expo*, May 20-23, 2017, Pittsburgh, PA.

- Aydin, R., Brown, A., Ali, A., and **Badurdeen, F.**, "Assessment of End-of-life Product Lifecycle 'ilities'", *Proceedings of IISE Annual Conference and Expo*, May 20-23, 2017, Pittsburgh, PA. (**Best Paper Award 3rd Place, Manufacturing and Design Track**)
- **Badurdeen, F.** and Jawahir, I.S., "Strategies for Value Creation through Sustainable Manufacturing", *Procedia Manufacturing*, Vol. 8, pp. 20-27, (**Keynote Presentation by F. Badurdeen** at 14th *Global Conference on Sustainable Manufacturing*, October 3-5, 2016, Stellenbosch, South Africa).
- Huang, A. and **Badurdeen, F.**, "Sustainable Manufacturing Performance Evaluation: Integrating Product and Process Metrics for Systems Level Assessment", *Proc. 14th Global Conference on Sustainable Manufacturing*, October 3-5, 2016, Stellenbosch, South Africa.
- Hapuwatte, B., Seevers, D., **Badurdeen, F.** and Jawahir, I.S., "Total Life Cycle Sustainability Analysis of Additively Manufactured Products", *Procedia CIRP*, Vol. 48, 2016, pp. 376-381.
- Bradley, R., Jawahir, I.S., **Badurdeen, F.** and Rouch, K.E., "A Framework for Material Selection in Multi-Generational Components: Sustainable Value Creation for a Circular Economy", *Procedia CIRP*, Vol. 48, 2016, pp. 370-375.
- Bilge, P., Seliger, G., **Badurdeen, F.** and Jawahir, I.S., "A Novel Framework for Achieving Sustainable Value Creation Through Industrial Engineering Principles", *Procedia CIRP*, Vol. 40, 2016, pp. 516-523.
- Jawahir, I.S., **Badurdeen, F.** and Rouch, K.E., "Innovation in sustainable manufacturing education", *Proc. 11th Global Conference on Sustainable Manufacturing*, September 23-25, 2013, Berlin, Germany, pp. 9-16. (Keynote paper)
- **Badurdeen, F.**, "Teaching Lean Manufacturing Online: Lessons Learned and Challenges Faced", *Proc. 2016 Industrial and Systems Engineering Research Conference*, May 21-24, 2016, Anaheim, CA.
- Huang, A. and **Badurdeen, F.**, "Framework for Sustainable Manufacturing Performance Evaluation at Systems Level", *Proc. 2016 Industrial and Systems Engineering Research Conference*, May 21-24, 2016, Anaheim, CA.
- **Badurdeen, F.**, J.R. Baker, K.E. Rouch, K.E. Goble, G.M. Swan, A. Brown and I.S. Jawahir, "Development of an Online Master's Degree Program in Manufacturing Systems Engineering", *Proc. 122nd ASEE Annual Conference and Exposition*, Seattle, WA, USA, June 14-17, 2015.
- Hogan, B., Huang, A. and **Badurdeen, F.**, "Wayfinding in the Graduate School: Structured problem solving in a non-manufacturing environment", *Proc. 2015 IIE Engineering Lean and Six Sigma Conference*, Atlanta, GA, USA, September 23-25, 2015.
- Calik, E. and **Badurdeen, F.**, "A measurement scale to evaluate sustainable innovation performance in manufacturing organizations", *Proc. 13th Global Conference on Sustainable Manufacturing*, Ho Chi Minh City, Vietnam, September 16-18, 2015.

- Brown, A. and **Badurdeen, F.**, Increased supply chain resilience through consideration of disruption impact severity in the supplier segmentation process, *Proc. 2015 Industrial and Systems Engineering Research Conference*, May 30-June 2, 2015, Nashville, TN, USA.
- **Badurdeen, F.**, Sekulic, D., Gregory, R., Brown, A. and Fu, H., (2014), "Developing and teaching a multidisciplinary course in systems thinking for sustainability: Lessons learned through two iterations", *Proc. 121st ASEE Annual Conference and Exposition*, Indianapolis, IN, USA, June 15-18, 2014. (**ASEE Best Paper Award in Systems Engineering Track**)
- Bilge, P., **Badurdeen, F.**, Seliger, G. and I.S. Jawahir, I.S., "Model-based Approach for Assessing Value Creation to Enhance Sustainability in Manufacturing", *Procedia CIRP*, Vol. 17, 2014, pp. 106-111.
- Sparks, D. and **Badurdeen, F.**, "Combining sustainable value stream mapping and simulation to assess supply chain performance", *Proc. 2014 Industrial and Systems Engineering Research Conference*, May 31- June 4, 2014, Montreal, Canada.
- Amundson, J., Brown, A., Grabowski, M. and **Badurdeen, F.**, "Life-cycle risk modeling: Alternate methods using Bayesian Belief Networks", *Procedia CIRP*, Vol. 17, 2014, pp: 320-325.
- Amundson, J., Brown, A., Shuaib, M., **Badurdeen, F.**, Jawahir, I.S., Goldsby, T. and Iyengar, D., "Bayesian methodology for supply chain risk analysis: Concept and case studies", *Proc. 2013 Industrial and Systems Engineering Research Conference*, May 18- 22, 2013, San Juan, Puerto Rico.
- Jawahir, I.S., **Badurdeen, F.** and K.E. Rouch, K.E., "Innovation in Sustainable Manufacturing Education", *Proc. 11th Global Conference on Sustainable Manufacturing (GCSM)* (Ed: G. Seliger), Berlin, Germany, September 23-25, 2013, pp. 9-16, ISBN 978-3-7983-2609-5. (**Keynote paper**)
- Shuaib, M., Seevers, K.D., T. Lu, T., **Badurdeen, F.** and Jawahir, I.S., "Sustainability Evaluation using a Metrics-based Product Sustainability Index (ProdSI) Methodology – A Case Study of a Consumer Electronics Product", *Proc. 11th Global Conference on Sustainable Manufacturing (GCSM)* (Ed: G. Seliger), Berlin, Germany, September 23-25, 2013.
- Zhang, X, **Badurdeen, F.**, K. Rouch and I.S. Jawahir, "On Improving the Product Sustainability of Metallic Automotive Components by Using the Total Life-cycle Approach and 6R Methodology", *Proc. 11th Global Conference on Sustainable Manufacturing (GCSM)* (Ed: G. Seliger), Berlin, Germany, September 23-25, 2013.
- Seevers, K.D., **Badurdeen, F.**, and I.S. Jawahir, "Sustainable Value Creation through Innovative Product Design", *Proc. 11th Global Conference on Sustainable Manufacturing (GCSM)* (Ed: G. Seliger), Berlin, Germany, September 23-25, 2013.
- **Badurdeen, F.**, A. Brown, R. Gregory, H. Fu, M. Schroeder, D. Sekulic, L. Vincent, and G. A. Luhan, "Reframing Interdisciplinary Approaches to Systems Thinking for

Sustainability”, *Proc. International Symposium on Sustainable Systems & Technologies (ISSST)*, May 15 – 17, 2013, Cincinnati, OH USA.

- Brown, A. and **Badurdeen, F.**, “A Queuing Model for Systems with Rework and Process Downtime”, *Proc. 9th IEEE International Conference on Automation Science and Engineering (CASE)*, August 17-21, 2013, Madison, WI, USA, pp. 789-794.
- Brown, A., J.A. Amundson, and **Badurdeen, F.**, “Bayesian Informed Simulation for Supply Chain Risk Probability and Impact Assessment”, *Proc. 22nd International Conference on Production Research (ICPR)*, July 28-August 1, 2013, Iguazu Falls, Brazil.
- Shuaib, M. and **Badurdeen, F.**, “Designing Sustainable Supply Chains for 6R Operations through Functional Modeling and Simulation”, *Proc. 22nd International Conference on Production Research (ICPR)*, July 28-August 1, 2013, Iguazu Falls, Brazil.
- Hassan, M.F., M.Z.M. Saman, S. Sharif, B. Omar, B., X. Zhang, **Badurdeen, F.**, and I.S. Jawahir, “Selection of Product Design Configuration for Improved Sustainability using the Product Sustainability Index (ProdsI) Scoring Method”, *3rd International Conference on Mechanical and Manufacturing Engineering (ICME)*, November 20-21, 2012, Bhatu Pahat, Malaysia.
- Lu, T., G. Rotella, **Badurdeen, F.**, O. W. Dillon, Jr., K.E. Rouch, I. S. Jawahir, “A Metrics-based Sustainability Assessment for Different Coolant Applications in a Turning Process”, *Proc. 10th Global Conf. on Sustainable Manufacturing (GCSM 2012)*, Istanbul, Turkey, Oct. 30 – Nov. 2, 2012.
- Zhang X., M. Shuaib, A. Huang, **Badurdeen, F.**, K., Rouch, I. S. Jawahir, “Total Life-cycle Based Product Sustainability Improvement: End-of-life Strategy Analysis for Metallic Automotive Components”, *Proc. 10th Global Conference on Sustainable Manufacturing (GCSM 2012)*, Istanbul, Turkey, Oct. 30 – Nov. 2, 2012.
- Roy, U., Baysal, M.M., Sarigecili, M.I., Shuaib, M., **Badurdeen, F.**, Jawahir, I.S., “Development of the Integrated Product Information Model for Product Sustainability Assessment”, *Proc. 10th Global Conference on Sustainable Manufacturing (GCSM 2012)*, Istanbul, Turkey, Oct. 30 – Nov. 2, 2012.
- Bilge, P., Badurdeen, F., **Jawahir, I.S.** and Seliger, G., “Integrated Sustainable Maintenance: A New Framework for Improved Manufacturing Efficiency And Productivity”, *Proc. 10th Global Conference on Sustainable Manufacturing (GCSM 2012)*, Istanbul, Turkey, Oct. 30 – Nov. 2, 2012.
- Faulkner, W., W. Templeton, D. Gullett, and **Badurdeen, F.**, “ Visualizing Sustainability Performance of Manufacturing Systems using Sustainable Value Stream Mapping (Sus-VSM)”, *3rd International Conference on Industrial Engineering and Operations Management (IEOM)*, July 3-6, 2012, Istanbul, Turkey. (**Best Track Paper Award**).
- **Badurdeen, F.**, B. Gregory, G. Luhan, M. Schroeder, L. Vincent and D. Sekulic, “Systems Thinking for Sustainability – Envisioning Trans-disciplinary Transformations in STEM Education”, *International Symposium on Sustainable Systems & Technology (ISSST)*, May 16-18, 2012, Boston, MA, USA.

- Zhang X., T. Lu, M. Shuaib, G. Rotella, A. Huang, S.C. Feng, K. Rouch, **Badurdeen, F.**, I. S. Jawahir, "A Metrics-based Methodology for Establishing Product Sustainability Index (*ProdSI*) for Manufactured Products", *Proc. 19th Life Cycle Engineering Conference*, Berkeley, CA, May 2012, pp. 435-441.
- Shuaib, M., Zhang X., **Badurdeen, F.**, Feng S., and Jawahir, I.S., "Total Life-Cycle Based Product Sustainability Improvement: End-Of- Life Strategy Analysis for Metallic Automotive Components", *10th Global Conference on Sustainable Manufacturing*, October 31 – November 2, 2012, İstanbul, Turkey.
- Lu, T., Rotella, G., **Badurdeen, F.**, Dillon, O., Feng S., and Jawahir, I.S., "A Metrics-Based Sustainability Assessment For Different Coolant Applications in a Turning Process", *10th Global Conference on Sustainable Manufacturing*, October 31 – November 2, 2012, İstanbul, Turkey.
- Lu, T., G. Rotella, S.C. Feng, **Badurdeen, F.**, O.W. Dillon, Jr., KE. Rouch and I.S. Jawahir, "Metrics-based Assessment of a Drilling Process", *Proc. 9th Global Conf. on Sustainable Manufacturing*, Saint Petersburg, Russia, September 28-30, 2011, pp. 66-71.
- Dassisti, M., M. Chimienti, M. Shuaib, **Badurdeen, F.** and I.S. Jawahir, "Sustainable Manufacturing: A Framework for Ontology Development", *Proc. 9th Global Conf. on Sustainable Manufacturing*, Saint Petersburg, Russia, September 28-30, 2011, pp. 43-47.
- Metta, H. and **Badurdeen, F.**, "Optimized Closed-loop Supply Chain Configuration Selection for Sustainable Product Designs", *IEEE International Conference on Automation Science and Engineering (CASE)*, August 24-27, 2011, Trieste, Italy.
- Brown, A. and **Badurdeen, F.**, "Optimization of Multi-skilled Operator Allocation to Minimize Inventory Waiting Time", *IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, December 6-9, 2011, Singapore. **(Honorable Mention Award)**.
- **Badurdeen, F.**, M. Shuaib, H. Metta, C. Stovall, I.S. Jawahir and T.J. Goldsby, "An Ontology-based Approach to Develop Sustainable Manufacturing Metrics for Supply Chain Evaluation", *Proc. NAMRI/SME*, Corvallis, OR, June 2011, Vol. 39, 2011.
- **Badurdeen, F.**, M. Shuaib and J.P. Liyanage, "Risk Modeling and Analysis for Sustainable Asset Management", *Proc. 5th World Conference on Engineering Asset Management*, October 25-27, 2010, Brisbane, Australia.
- **Badurdeen, F.**, K. Wijekoon, M. Shuaib, T. J. Goldsby, D. Iyengar and I.S. Jawahir, "Integrated Modeling to Enhance Resilience in Sustainable Supply Chains", *Proc. IEEE Computers and Automation Systems Conference (CASE)*, August 21-23, 2010, Toronto, Canada.
- **Badurdeen, F.**, M. A. Shuaib and I.S. Jawahir, "Ontology Development for a Systems Approach to Sustainable Supply Chains", *Proc. 4th International Conference on Sustainable Energy and Environmental Protection (SEEP)*, June 29 – July 2, 2010, Bari, Italy.

- Lu, T., A. Gupta, A. D. Jayal, **Badurdeen, F.**, S.C. Feng, O. W. Dillon, Jr., I. S. Jawahir, "A Framework of Product and Process Metrics for Sustainable Manufacturing", *Proc. 8th Global Conf. on Sustainable Manufacturing*, Abu Dhabi, UAE, November 22-24, 2010.
- Shuaib, M., H. Metta, **Badurdeen, F.**, I.S. Jawahir and T. Goldsby, "Methodologies for Design and Performance Evaluation in Sustainable Supply Chains", *Proc. 8th Global Conf. on Sustainable Manufacturing*, Abu Dhabi, UAE, November 22-24, 2010.
- Zhihong, C., C. Guangzhu, **Badurdeen, F.**, and G. Ding, "Scheduling Optimization of Capacitated Lot Sizing Problem Based on Immune Complement Algorithm", *Proc. International Conference on Computer Design and Applications (ICCD)*, June 25-27, Qinhuangdao, Hebei, China.
- Ladd, S. and **Badurdeen, F.**, "Quality Function Deployment-based Approach to Supplier Sustainability Evaluation and Selection", *Proc. 19th Industrial Engineering Research Conference*, June 5-9, 2010, Cancun, Mexico.
- **Badurdeen, F.**, M. Shuaib and Jawahir, I.S., "Ontology Development for a Systems Approach to Sustainable Supply Chains", *Proc. 4th Int. Conf. on Sustainability and Environmental Protection (SEEP)*, Bari, Italy, June 29 – July 2, 2010.
- Jawahir, I.S., **Badurdeen, F.**, A. Gupta and A.D. Jayal, "Towards developing Metrics for Sustainable Manufacturing", *Proc. 7th Global Conference on Sustainable Manufacturing*, Chennai, India, December 2009, pp. 27-37.
- Metta, H. and **Badurdeen, F.**, "A Framework for Coordinated Sustainable Product and Supply Chain Design", *Proc. 2nd International Conference on Value Chain Sustainability (ICOVACS)*, October 19-20, 2009, Louisville, KY. (*Ann Taylor Best Paper Award*).
- Iyengar, D., T. Goldsby, **Badurdeen, F.**, I.S. Jawahir, H. Metta, C. Stoval and K. Wijekoon, "Sustainable Supply Chains: A Framework for Implementation and Performance Measurement", *Proc. 2nd Int. Conf. on Value Chain Sustainability (ICOVACS)*, Louisville, KY, USA, October 19-22, 2009.
- **Badurdeen, F.**, A.D. Jayal, and I.S. Jawahir, "Towards a Systems Approach for Developing Sustainable Products from Sustainable Manufacturing", *Proc. Indo-US Workshop on Designing Sustainable Products, Services and Manufacturing Systems*, Bangalore, India, August 2009.
- Iyengar, D., **Badurdeen, F.**, T. J. Goldsby, A.D. Jayal and I.S. Jawahir, "Sustainable Supply Chain Operations in Manufacturing: A Closed-Loop Supply Chain Approach", *Proc. 5th Annual IEEE Conference on Automation Science and Engineering (CASE)*, Bangalore, India, August 22-25, 2009.
- Jayal, A.D., **Badurdeen, F.**, O.W. Dillon, Jr., and I.S. Jawahir, "New Challenges for Sustainable Manufacturing: Modeling Issues at the Product, Process and Systems Levels", *Proc. 42nd CIRP Conference on Manufacturing Systems*, Grenoble, France, June 2009.

- **Badurdeen, F.**, J.P. Liyanage and S. Gupta , “Product Lifecycle-based Approach to Mass Customization for Sustainable Manufacturing”, *Proc.5th Mass Customization and Personalization*, October 3-6, 2009, Helsinki, Finland.
- Liyanage, J.P. and **Badurdeen, F.**, “Strategies for Integrating Maintenance for Sustainable Manufacturing: Developing Integrated Platforms”, *Proc. World Congress on Engineering Asset Management*, September 28-30, 2009, Athens, Greece.
- Tsavatapalli, N. and **Badurdeen, F.**, “Single Machine Scheduling to Minimize Total Tardiness with Sequence Dependent Setup Times”, *Proc. 18th Industrial Engineering Research Conference*, May 19-21, 2009, Miami, FL.
- H. Metta, S. Gupta and **Badurdeen, F.**, “Taxonomy of Research Directions for Sustainable Supply Chain Management”, *Proc. 18th Industrial Engineering Research Conference*, May 19-21, 2009, Miami, FL.
- M. Shuaib and **Badurdeen, F.**, “Job Scheduling in Associative Parallel Machines to Minimize Average Flow Time”, *Proc. Indian Sub-continent Decision Sciences Institute (ISDSI) Conference*, January 3-5, 2009, Mumbai, India, pp. 102-112.
- A. Hall, L. Holloway, P. Marksberry, **Badurdeen, F.**, J. Price, A. McGinnis, B. Cooper and K. Kreaflle, “Lean Manufacturing Bootcamps at the University of Kentucky”, *Proc. 17th Industrial Engineering Research Conference*, Vancouver, Canada, May 19 – 23, 2008.
- H. Metta, A. Goyal, B. Stump, K. Inala, S. Thuramalla and **Badurdeen, F.**, “A Simple Simulation Model to Demonstrate Mass Customization Strategies”, *Proc. 3rd Mass Customization and Personalization Conference*, October 7-9, 2007, Boston, MA.
- **Badurdeen, F.**, B. Meriden and S. Thuramalla, “Performance Analysis of Minicell-based Manufacturing System for Mass Customization”, *Proc. 3rd Mass Customization and Personalization Conference*, October 7-9, 2007, Boston, MA.
- **Badurdeen, F.**, and P. K. Chadalavada, “Job Scheduling in Minicells for Mass Customization Manufacturing”, *Proc. 16th Industrial Engineering Research Conference*, Nashville, TN, May 19 – 23, 2007.
- **Badurdeen, F.**, G. A. Suer, N. Dissanayake, and K. Bedida, “Capacitated Lot Sizing Problem using Adaptive Multi-Chromosome Crossover Strategy”, *Proc. 16th Industrial Engineering Research Conference*, Nashville, TN, May 19 – 23, 2007.
- **Badurdeen, F.**, S. Thuramalla, B. Meriden, and D.T. Masel, “Increasing Mass Customization Manufacturing Flexibility using Minicells”, *Proc. 40th CIRP International Seminar on Manufacturing Systems*, Liverpool, United Kingdom, May 30 – June 1, 2007.
- **Badurdeen, F.**, D.T. Masel, and S. Thuramalla, “A Modular Manufacturing System for Mass Customization Using Minicells”, *Proc. 3rd International Conference on Group Technology/Cellular Manufacturing*, July 3-5, 2006, Groningen, The Netherlands, pp. 45-51.
- **Badurdeen, F.**, D.T. Masel, and S. Thuramalla, “A Multi-objective Genetic Algorithm to Design Minicells for Mass Customization Manufacturing”, *Proc. 15th Industrial Engineering Research Conference*, Orlando, FL, May 20-24, 2006.

- **Badurdeen, F.**, and D.T. Masel, “Minicells for Mass Customization Manufacturing”, *Proc. 14th Industrial Engineering Research Conference*, Atlanta, GA, May 14–18, 2005.
- **Badurdeen, F.**, and D. T. Masel, “Cell Layout Heuristic for a Mass Customization Manufacturing Environment”, *Proc. 13th Industrial Engineering Research Conference*, Houston, TX, May 15–19, 2004.
- H. T. Zwahlen, A. Russ, **Badurdeen, F.**, and S. Vatan, “Roadway Weather Information Systems (RWIS) Pavement Sensor Bench Test”, *Proc. 83rd Annual Transportation Research Board Meeting*, Washington D.C., January 11-15, 2004.
- H.T. Zwahlen, **Badurdeen, F.**, and S. Vatan, “Legibility Performance Under High Luminance and Contrast”, *Proc. 83rd Annual Transportation Research Board Meeting*, Washington D.C., January 11 – 15, 2004.
- **Badurdeen, F.**, and D. T. Masel, “Determining Batch Size to Minimize Labor Requirements in Distribution Center Operations”, *Proc. 2nd Group Technology and Cellular Manufacturing World Symposium*, Columbus, OH, July 28-30, 2003, pp. 171-176.
- H.T. Zwahlen, S. Vatan, **Badurdeen, F.**, and E. Oner, “Daytime Legibility of White Landolt Rings on Green Traffic Sign Backgrounds”, *Proc. 82nd Annual Transportation Research Board Meeting*, Washington, DC, January 12-16, 2003.
- D.T. Masel and **Badurdeen, F.**, “Methods for Optimizing Staffing Levels in a Manual Order Picking Distribution Center”, *Proc. 31st International Conference on Computers and Industrial Engineering*, San Francisco, California, February 2-4, 2003.
- G. Suer, **Badurdeen, F.**, and T. Balajee, “Capacitated Lot Sizing by Using Multi-Chromosome Crossover Strategy”, *Proc. ANNIE Conference*, St. Louis, Missouri, November 10-13, 2002, **Nominated for Best Paper Award.**
- H. T. Zwahlen and **Badurdeen, F.**, “Daytime Legibility as a Function of Non-Fluorescent and Fluorescent Traffic Sign Colors”, *Proc. 81st Transportation Research Board Annual Conference*, Washington D.C., January 15-17, 2002.

Conference Papers Accepted

1. Koren, Y., **Badurdeen, F.**, Gu, X. and Jawahir, I.S., “Sustainable Reconfigurable Manufacturing Systems”, 15th Global Conference in Sustainable Manufacturing, September 25-27, 2017, Haifa, Israel (**Keynote presentation to be delivered by Y. Koren**)

Conference Presentations with Refereed Abstracts

1. Aydin, R., Brown, A. and **Badurdeen, F.**, “Total Lifecycle Product Design Optimization”, Accepted for presentation at the *International Congress on Sustainability Science and Engineering (ICOSSE '17)*, October 2-4, 2017, Barcelona, Spain.
2. **Badurdeen, F.**, “Extending 6R-based Closed-loop Sustainable Manufacturing Practices for Sustainable Built Environments”, *7th International Conference on Sustainable Built*

Environment (ICSBE), December 16-18, 2017, Colombo, Sri Lanka. (**Keynote Presentation**)

3. Bilge, P., **Badurdeen, F.**, and G. Seliger and I.S. Jawahir, "Design of Sustainable Value Creation for Production Systems through Principles of Industrial Engineering", *International Congress on Sustainability Science and Engineering (ICOSSE 2015)*, Balatonfured, Hungary, May 26-29, 2015.
4. Amundson, J., Brown, A. and **Badurdeen, F.**, "Quantitative Modeling to Assess Total Life-cycle Risk Implications across the Supply Chain for Sustainable Manufacturing Decision Making", *International Congress on Sustainability Science and Engineering (ICOSSE 2015)*, Balatonfured, Hungary, May 26-29, 2015.
5. **Badurdeen, F.**, A.J. Brown, J. Amundson and S. Roberts, "Manufacturing Sustainability Evaluation through Sustainable Value Stream Mapping (Sus-VSM): Approach and Case Study", *3rd International Congress on Sustainability Science and Engineering (ICOSSE)*, August 11-15, 2013, Cincinnati, OH.
6. Lan, T. and **Badurdeen, F.**, "Mathematical Modeling for Platform-based Product Design Considering Total Life-cycle Sustainability", *Industrial and Systems Engineering Research Conference (ISERC)*, May 18-22, 2013, San Juan, Puerto Rico.
7. Fadnavis, S. and **Badurdeen, F.**, "Problem Solving for Continuous Improvement: The Role of Organizational Culture", *Industrial and Systems Engineering Research Conference (ISERC)*, May 18-22, 2013, San Juan, Puerto Rico.
8. **Badurdeen, F.**, Gregory, R., Luhan, G., Schroder, M., Sekulic, D., Vincent, L., Brown, A. and Fu, H., "Systems Thinking for Sustainability: Experiences from Developing and Teaching a Multi-disciplinary Course", *Kentucky Innovations Conference*, May 16-17, 2013, Lexington, KY, USA
9. **Badurdeen, F.**, H. Metta, A. Gupta, C. Stovall, M. Shuaib, T. J. Goldsby and I. S. Jawahir, "System Level Metrics for Sustainable Manufacturing", *2nd International Congress on Sustainability Science and Engineering (ICOSSE)*, January 9-13, 2011, Tucson, AZ.
10. Sukumara, S., J. Seay, **Badurdeen, F.**, J. Amundson, W. Faulkner, "Feed Flexible Process Optimization Model for Region-Specific Sustainable Biorefining", *2012 AIChE Annual Meeting*, October 28th – November 2nd, 2012, Pittsburgh, PA, USA.
11. Sukumara, S., J. Seay, **Badurdeen, F.**, J. Amundson, W. Faulkner. "Multidisciplinary Optimization Model for Region Specific Sustainable Biorefining", *2012 AIChE Annual Meeting*, October 28th – November 2nd, 2012, Pittsburgh, PA, USA.
12. **Badurdeen, F.**, H. Metta, A. Gupta, C. Stovall, M. Shuaib, T. J. Goldsby and I. S. Jawahir, "System Level Metrics for Sustainable Manufacturing", *2nd International Congress on Sustainability Science and Engineering (ICOSSE)*, January 10-13, 2011, Tucson, AZ.

13. Shuaib, M., X. Zhang, A. Huang, **Badurdeen, F.**, S. Feng, K. Rouch, I.S. Jawahir, "Total Life-cycle Based Metrics for Product Sustainability Assessment", *Industrial and Systems Engineering Research Conference (ISERC)*, May 19-23, Orlando, FL
14. Dawson, T. and **Badurdeen, F.**, "Organizational Culture and Problem Solving Practices in the Context of Lean Implementation", *Industrial Engineering Research Conference (IERC)*, May 21 – 25, 2011, Reno, Nevada
15. Faulkner, W., J. Amundson, **Badurdeen, F.**, and J. Seay, (2011), "Coupled Optimization and Simulation for Multi-biomass Source-to-Biorefinery Supply Chain Modeling and Analysis", *AICHE Annual Meeting*, October 18, 2011, Minneapolis, MN.
16. Sukumara, S., J. Seay and **Badurdeen, F.**, "Region Specific Economic Modeling of Integrated Biorefining using Process Simulation and Supply Chain Optimization", *Presentation at the 10th AIChE Annual Conference*, November 7-12, 2010, Salt Lake City, UT.
17. Jawahir, I.S., **Badurdeen, F.**, and A. Jayal, "Metrics for Modeling and Optimization of Sustainable Manufacturing at Product, Process and System Levels", *SAE Aerospace Manufacturing and Automated Fastening Conference & Exhibition (AMAF)*, September 28-30, 2010, Wichita, KS.
18. Wijekoon, K. and **Badurdeen, F.**, "Organizational Value System for Lean Transformation: A Tool for Assessment", *19th Industrial Engineering Research Conference*, June 5-9, 2010, Cancun, Mexico.
19. **Badurdeen, F.**, D. Iyengar, T.J. Goldsby, I.S. Jawahir, M. Shuaib and K. Wijekoon, "RANGER: Risk Assessment for Next Generation Supply Chain Readiness – Demonstration", *Defense Manufacturing Conference (DMC)*, November 30 – December 3, 2009, Orlando, FL, USA.
20. **Badurdeen, F.**, T. Goldsby, H. Metta, S. Gupta and I. S. Jawahir, "Sustainable Supply Chain Operations: A Framework for Implementation", *Defense Manufacturing Conference (DMC)*, December 1-4, 2008, Orlando, FL, USA.
21. **Badurdeen, F.**, D. Iyengar, T.J. Goldsby, I.S. Jawahir, M. Shuaib and K. Wijekoon, RANGER: Risk Assessment for Next Generation Supply Chain Readiness – Demonstration, *Defense Manufacturing Conference (DMC)*, November 30 – December 3, 2009, Orlando, FL, USA.
22. Jawahir, I.S., **Badurdeen, F.**, T. Goldsby and D. Iyengar, "Assessment of Product and Process Sustainability: Towards Developing Metrics for Sustainable Manufacturing", *NIST Workshop on Sustainable Manufacturing: Metrics, Standards, and Infrastructure*, October 2009, Gaithersburg, MD, USA.
23. **Badurdeen, F.**, A.D. Jayal and I.S. Jawahir, Iyengar, D., T.J. Goldsby, **Badurdeen, F.**, I.S. Jawahir, I.S., H. Metta, K. Wijekoon, and C. Stovall, "Sustainable Supply Chains: A Framework for Implementation", *1st International Congress on Sustainability Science and Engineering (ICOSSE)*, August 9-11, 2009, Cincinnati, OH, USA.

24. Liyanage, J.P. and **Badurdeen, F.**, Managing Strategic Engineering Assets: A Life-cycle Perspective, *1st International Congress on Sustainability Science and Engineering (ICOSSE)*, August 9-11, 2009, Cincinnati, OH, USA.
25. Goldsby, T.J., **Badurdeen, F.**, D. Iyengar, H. Metta, K. Wijekoon, C. Stoval and I.S. Jawahir, Sustainable Supply Chains: A Framework for Implementation, *presented at the 1st International Congress on Sustainability Science and Engineering (ICOSSE)*, August 9-11, 2009, Cincinnati, OH, USA.
26. **Badurdeen, F.**, T.J. Goldsby and D. Iyengar, "RADAR: Risk Assessment and Decision Analysis for Supply Chain Readiness", *United States Army Logistics Symposium*, June 11-13, 2009, Richmond, VA.
27. **Badurdeen, F.**, T. Goldsby, H. Metta, S. Gupta and I. S. Jawahir, "Sustainable Supply Chain Operations: A Framework for Implementation", *Defense Manufacturing Conference (DMC)*, December 1-4, 2008, Orlando, FL.
28. **Badurdeen, F.**, H. Metta, K. Bedida and P. Marksberry, "Moving Forward: Sustainable Asset Management", *ASME Mechanical Engineering International Congress and Exposition*, November 11-15, 2007, Seattle, WA.
29. **Badurdeen, F.** and D.T. Masel, "A Modular Manufacturing System for Mass Customization", *17th Annual Conference of the Production and Operations Management Society*, April 29-30, 2006, Boston, MA

Posters with Refereed Abstracts

1. Brown, A. and **Badurdeen, F.**, "Assessing Effects of Supplier Relationship Management Strategies on Supply Chain Resiliency, Efficiency and Sustainability Performance Trade-offs", *International Congress on Sustainability Science & Engineering (ICOSSE)*, May 26-29, 2015, Balatonfured, Hungary.
2. Amundson, J., E. Oner, J. Seay, **Badurdeen, F.**, Developing Availability Distributions for Biomass Feedstock Sources, *2012 AIChE Annual Meeting*, October 28th – November 2nd, 2012, Pittsburgh, PA, USA.
3. Amundson, J., W. Faulkner, J. Amundson, and **Badurdeen, F.**, "Coupled Optimization and Simulation for Modeling for the Design of Sustainable Biomass Supply Chains", , *2011 Environmental & Sustainability Research Showcase*, Tracy Farmer Institute for Sustainability and the Environment, University of Kentucky, Lexington, KY, USA.
4. Sukumara, S., J. Seay and **Badurdeen, F.**, "Multidisciplinary Approach in Developing Region Specific Models for Sustainable Biorefining", *2011 Environmental & Sustainability Research Showcase*, Tracy Farmer Institute for Sustainability and the Environment, University of Kentucky, Lexington, KY, USA. **(Best Poster Award)**.
5. Metta, H., **Badurdeen, F.**, and T. J. Goldsby, Coordinated Sustainable Product and Supply Chain Design and Modeling, *1st International Congress on Sustainability Science and Engineering (ICOSSE)*, August 9-11, 2009, Cincinnati, OH, USA.

6. **Badurdeen, F.** and K. Inala, "Assessing Product Configurator Capabilities for Successful Mass Customization", *17th Industrial Engineering Research Conference*, Vancouver, Canada, May 19 – 23, 2008.

(f) Technical Research Reports

1. **Badurdeen, F.**, "Report on the Workshop on Research and Education Needs in Sustainable Manufacturing", *NSF Project Final Report*, Grant No: CMMI 1649528, 2017, 17 pp.
2. Jawahir, I.S., **Badurdeen, F.** and Rouch, K.E., "Metrics-based evaluation of product and process sustainability and case studies," Institute for Sustainable Manufacturing, University of Kentucky, Lexington, KY, USA, *NIST Project Report*, 2013, 223 pp.
3. Sharp, C., **Badurdeen, F.**, Lenger, E., Neal, M., Anderson, C. and Graves, G., "Risk Assessment for Next Generation Supply Chain Readiness (RANGER)", *RANGER Final Report*, CDRL A001, Contract No: FA8650-08-C-5708, October 2011, 110 pp.
4. **Badurdeen, F.** and Wetzel, K., "Next Steps in Sustainable Manufacturing R&D", Report of a Two-day Workshop on Innovation for Sustainable Manufacturing & Workforce Effectiveness, Workshop held June 21-22, 2011, Lexington KY, 24 pp.
5. Zwahlen, H.T., A. Russ, **Badurdeen, F.**, and S. Vatan, "Evaluation of ODOT Roadway/Weather Sensor Systems for Snow and Ice Removal Operations Part II: RWIS Pavement Sensor Bench Test", Final Report prepared for the Ohio Department of Transportation, Report No. FHWA/OH – 2003/008B, May 2003, 92 pp.
6. H.T. Zwahlen, E. Oner, **Badurdeen, F.**, and A Russ, "Human Factors Opportunities to Improve Ohio's Transportation System", Final Report prepared for the Ohio Department of Transportation, Report No. FHWA/OH – 2005/007, June, 2005, 299 pp.

(g) Other Publications

1. **Badurdeen, F.** and R. Gregory, "The Softer Side of Lean: Analyzing corporate culture can point the way to necessary changes", *Industrial Engineer*, Vol. 44, No. 2, February 2012.

(h) Other Invited Technical Presentations

1. **Badurdeen, F.**, "Design and Management of Supply Chains for Sustainability", *Guest Lecture for IE 657: Models and Analysis for Logistical Systems*, April 14, 2015, University of Louisville, KY, USA.

2. **Badurdeen, F.**, "Lean Manufacturing: An Introduction", , *Guest Presentation for Gray Construction Inc.*, May 20, 2015, Lexington, KY, USA.
3. **Badurdeen, F.**, "Tomorrow's Manufacturing Landscape – Careers, Trends & Opportunities: Opportunities @ University of Kentucky", *21st Century Manufacturing Collaborium*, October 22, 2015, Louisville, KY.
4. **Badurdeen, F.**, "Leapfrogging from Lean to Sustainable Business Practices", *Guest Presentation at MAS Holdings (Pvt.) Ltd.*, December 14, 2012, Colombo, Sri Lanka.
5. **Badurdeen, F.**, "Sustainable Supply Chains: Design, Evaluation and Management", *Technical Lecture, Singapore Institute of Manufacturing Technology (SIMTech)*, November 29, 2012, Singapore.
6. **Badurdeen, F.**, "Total Life-cycle Based Approach to Sustainable Supply Chains", *Graduate Colloquium, Faculty of Mechanical Engineering, Universiti of Teknologi Malaysia*, November 25, 2012, Johor Bahru, Malaysia.
7. **Badurdeen, F.**, "Sustainable Manufacturing: The New Paradigm for Next Generation Manufacturing", *Undergraduate Seminar, Faculty of Mechanical Engineering, Universiti of Teknologi Malaysia*, November 28, 2012, Johor Bahru, Malaysia.
8. **Badurdeen, F.**, "Sustainable Manufacturing: Recent Advances in the Total Lifecycle-based Approach", *22nd International Conference on Flexible Automation and Intelligent Manufacturing (FAIM)*, June 10-13, 2012, Helsinki-Stockholm. (**Keynote Presentation**).
9. **Badurdeen, F.**, "The New Challenge: Managing Supply Chain Risks", *6th Competitive Sustainable Manufacturing Forum*, June 8, 2012, Tampere University of Technology, Tampere, Finland.
10. **Badurdeen, F.**, "Advances in 6R-based Approaches to Sustainable Supply Chains", *2nd Annual Supply Chain Forum*, February 24, 2012, Keeneland, Lexington, KY, USA.
11. **Badurdeen, F.**, T. Goldsby and B. Boden (**Invited Panel**), "Managing Risks in Supply Chains: Approach, Success Stories and Lessons Learned", *Council of Supply Chain Management Professionals (CSCMP) Annual Global Conference*, October 1, 2011, Philadelphia, PA, USA.
12. **Badurdeen, F.**, "Sustainable Manufacturing: The New Paradigm for Next Generation Manufacturing and Global Competitiveness", *SBIR National Conference*, April 21, 2010, Hartford, CT, USA.
13. **Badurdeen, F.**, "Sustainable Supply Chains: Design and Optimization", *IE 580 Distinguished Seminar Series, The Pennsylvania State University*, April 8, 2010, State College, PA, USA.
14. **Badurdeen, F.**, "Mass Customization Simulation: A Hands-on Approach", *5th World Conference on Mass Customization and Personalization*, October 3, 2009, Helsinki, Finland. (**Keynote Presentation**).

GRANT FUNDING

Active Research Grants

- 10/2016 - 9/2021 **Kentucky Industrial Assessment Center (KIAC): Developing the Next Generation Energy Assessment Engineering Workforce**
Role: Co-Principal Investigator
Agency: *U.S. Department of Energy*
Amount: \$ 1,851,564
Duration: 60 months
- 08/2016 – 08/2018 **Predictive Modeling for Digitally-enabled, Multi-criteria Decision Making in Innovation Product Design and Analysis with Total Lifecycle Sustainability**
Role: Principal Investigator
Agency: *Digital Manufacturing and Design Innovation Institute (DMDII)*
Amount: \$ 1,202,396 (\$560,587 Federal; \$641,809 Cost share)
Duration 24 months
- 01/01/16 - 09/30/17 **Re-inventing Erie: GE Transportation**
Role: Principal Investigator
Agency: *General Electric Transportation*
Amount: \$ 30,000
Duration: 19 months

Completed Research Grants

- 02/04/14 - 03/31/17 **eLII Online Manufacturing Systems Engineering MS Program Development Grant**
Role: Principal Investigator
Agency: *University of Kentucky*
Amount: \$125,000
Duration: 37 months
- 06/01/14 - 12/31/16 **PRISM: Partnership for Research and Innovation in Sustainable Manufacturing**
Role: Co-principal Investigator
Agency: *National Institute of Standards and Technology (NIST)*
Amount: \$ 500,000
Duration 30 months
- 07/2016 – 12/31/2016 **Workshop: Research and Education Needs in Sustainable Manufacturing: Atlanta, GA: July 2016**
Role: Principal Investigator
Agency: *National Science Foundation*

Amount: \$ 32,140
Duration: 6 months

07/2015 – 12/31/2016 **Value Creation through Sustainable Manufacturing**
Role: Principal Investigator
Agency: *National Science Foundation*
Amount: \$ 20,000
Duration: 17 months

05/2014 – 10/2015 **Proposal to Support 4th International Forum on Sustainable Manufacturing to be held September 12, 2014 at Lexington, KY**
Role: Principal Investigator
Agency: *National Science Foundation*
Amount: \$ 25,000
Duration: 17 months

12/2012 – 12/2013 **Advanced Next Generation Event Loss Minimization Systems (ANGELS) – Phase II**
Role: Principal Investigator
Agency: *General Electric Aviation*
Amount: \$ 50,000
Duration: 13 months

07/2011 – 6/2014 **Systems Thinking for Sustainability**
Role: Co-principal Investigator
Agency: *National Science Foundation*
Amount: \$ 200,000
Duration: 36 months

03/2011 – 12/2012 **Advanced Next Generation Event Loss Minimization Systems (ANGELS) – Phase I**
Role: Principal Investigator
Agency: *General Electric Aviation*
Amount: \$ 91,253
Duration: 21 months

01/2010 - 12/2012 **Development of Metrics, Metrology and a Framework for Product-Process Ontology for Interoperability in Model-Based Sustainable Manufacturing**
Role: Co-principal Investigator
Agency: *National Institute for Standards and Technology*
Amount: \$ 1,499,935
Duration: 36 months

07/2010 – 10/2011 **Risk Assessment for Next Generation Supply Chain Readiness (RANGER) – Phase II**
Role: Principal Investigator

Agency: *U.S. Air Force – South Carolina Research Authority*
Amount: \$ 300,000
Duration: 15 months

10/2010 – 9/2011 **Progressive Research Initiative for Sustainable Manufacturing (PRISM)**

Role: Co-principal Investigator
Agency: *U.S. Army*
Amount: \$ 700,000
Duration: 12 months

10/2008 – 12/2009 **Risk Assessment for Next Generation Supply Chain Readiness (RANGER) – Phase I**

Role: Co-principal Investigator
Agency: *U.S. Air Force – South Carolina Research Authority*
Amount: \$ 255,000
Duration: 14 months

08/2008 – 12/2009 **Next Generation Supply Chain Modeling Project**

Role: Co-principal Investigator
Agency: *Department of Defense – NGMTI*
Amount: \$ 350,000
Duration: 16 months

10/2006 – 3/2009 **A Comprehensive Training Factory & Laboratory System for Manufacturing Education at the University of Kentucky**

Role: Co-principal Investigator
Agency: *Society of Manufacturing Engineers Education Foundation*
Amount: \$ 243,695
Duration: 27 months

2/2008 – 12/2008 **Machine Scheduling for Mass Customization Manufacturing**

Role: Principal Investigator
Agency: *Kuhlman Electric Company*
Amount: \$ 10,000
Duration: 11 months

HONORS AND AWARDS

- **Best Track Paper Award – 3rd Place: Manufacturing and Design Track** for Aydin et al., (2017), “Assessment of End-of-life Product Lifecycle ‘ilities’”, Institute for Industrial and Systems Engineering (IISE) Annual Conference, 2017.
- **Honorable Mention Award** for Hogan et al., (2015), “Wayfinding in the Graduate School: Structured problem solving in a non-manufacturing environment”, IISE Engineering Lean and Six Sigma Conference, 2015.
- **Award for Excellence in Teaching Lean Concepts**, Institute for Industrial and Systems Engineering (IISE) Lean Division, 2014.
- **ASEE Best Paper Award in Systems Engineering Track 2014** for Badurdeen et al., (2014), “Developing and teaching a multidisciplinary course in systems thinking for sustainability: Lessons learned through two iterations”, *121st ASEE Annual Conference and Exposition*, Indianapolis, IN, USA, June 15-18, 2014.
- **Emerald Literati 2012 Award of Excellence – Outstanding Paper Award Winner** for the paper Marksberry, P., **Badurdeen, F.**, and A. Maginnis, “An investigation of Toyota’s social-technical systems in production leveling”, *Journal of Manufacturing Technology Management*, Vol. 22 No. 5, 2011, pp. 604-620.
- **IEOM Best Paper Award in Sustainability Track** for Faulkner, W., Templeton, W., Gullett, D. and **Badurdeen, F.**, (2012), Visualizing Sustainability Performance of Manufacturing Systems using Sustainable Value Stream Mapping (Sus-VSM), 3rd International Conference on Industrial Engineering and Operations Management, July 3 – 6, 2012, Istanbul, Turkey,
- **IEEM Conference Paper Award – Honorable Mention** for Brown, A. and **Badurdeen, F.** (2011), “Optimization of Multi-skilled Operator Allocation to Minimize Inventory Waiting Time”, IEEE Industrial Engineering and Engineering Management (IEEM) Conference, Singapore.
- **Best Poster Award for Graduate Research** for Sukumara et al., (2011) poster “Multidisciplinary Approach in Developing a Region Specific Optimization Model for Sustainable Biorefining”, *Tracy Farmer Institute for Sustainability and the Environment 2nd Annual Research Showcase*, Lexington, Kentucky.
- **Best Doctoral Dissertation Award from Council of Supply Chain Management Professionals (CSCMP) 2011** for advisee: Metta, H. “A Multi-stage Decision Support Model for Coordinated Sustainable Product and Supply Chain Design”.
- **ICOVACS Conference Ann Taylor Best Paper Award** for Metta, M. and F. Badurdeen (2009), “A Framework for Coordinated Sustainable Product and Supply Chain Design”, 2nd International Conference on Value Chain Sustainability (ICOVACS), October 21, 2009, Louisville, KY.
- **Teacher Who Made a Difference Award**, University of Kentucky, April 2009
- **Ohio University Student Research and Creative Activity Award 2005** for Industrial and Manufacturing Systems Engineering (Second Place)
- **National Materials Handling Student Design Competition, Honorable Mention Award** 2003, Material Handling Industry of America (MHIA).

- *Fellowship for Doctoral Students* 2002/03, 2003/04 Ohio University, Russ College of Engineering
- *Colombo Dockyard Award* for Third Year Performance Engineering 1993/94, University of Peradeniya, Sri Lanka.
- *Ceylon Tobacco Company Award* for First Year Performance in Engineering 1991/92, University of Peradeniya, Sri Lanka.

STUDENT and POSTDOCTORAL MENTORING

Post-doctoral Scholars

2016 - present **Ridvan Aydin** (PhD from Hong Kong Polytechnic University, 2016)

Ph.D. Advisees

Current

2017 – present **Christian Enyoghasi**, Dissertation Title: Product Design for Circular Economy (Tentative)

2016 - present **Amir Najarzadeh**, Dissertation Title: Organizational Interventions to Enhance Lean Transformation Effectiveness

Graduates

2013 – 2017 **Adam Brown**, Dissertation Title: Development of a Supplier Segmentation Method for Increased Resilience and Robustness: A Study Using Agent-based Modeling and Simulation

2012 – 2017 **Aihua Huang**, Dissertation Title: Metrics-based Sustainable Manufacturing Performance Evaluation at the Systems Level

2011-2015 **K. Daniel SeEVERS** (Co-Chair), Dissertation Title: Sustainable Lifetime Value Creation through Innovative Product Design: A Product Assurance Model (currently with Lexmark International)

2008 - 2011 **Haritha Metta**, Dissertation Title: A Multi-stage Decision Support Model for Coordinated Sustainable Product and Supply Chain Design (Currently with Big Fish Games)

MS Advisees (Thesis)

Current

2015 – Present **Leah Ralph**, Thesis Title: Standardized Process to Identify Pre-requisites for AGV System Implementation (currently with Genie Industries)

2015 - Present **Sudhir Punyamurthula**, Thesis Title: Assessing Production Line Risk using Bayesian Belief Networks and System Dynamics

2015 - Present **Ammar Ali**, Thesis Title: Quantitative Evaluation and Optimization of Product Recoverability, Reusability and Remanufacturability

2013 - Present **Bridgid Hogan**, Thesis Title: Quality Function Deployment-based Approach to Determining Curricular Requirements for Sustainable Manufacturing Graduate Program (currently with Schneider Electric)

Graduates

2014 - 2016 **Saket D. Fadnavis**, Thesis Title: An Empirical Investigation of Potential Relationships between Organizational Culture Traits and Problem Solving Practices to Support Lean Transformations (currently with Schneider Electric)

2015 - 2016 **Gnana Shekaran Arumugam**, Thesis Title: Alternate Models for Natural Gas Transportation System performance Optimization (Currently with TEAM Industrial Services)

2014 - 2015 **Daniel Sparks**, Thesis Title: Combining Sustainable Value Stream Mapping and Simulation to Assess Manufacturing Supply Chain Network Performance

2012 -2015 **Tian Lan**, Thesis Title: Mathematical Modeling for Platform-based Product Configuration Considering Total Life-cycle Sustainability (currently with Citizen's Financial Group, Inc.)

2010 - 2013 **Joseph Amundson**, Thesis Title: Modeling of Biorefinery Supply Chain Economic Performance with Discrete Event Simulation (currently with Michelin ASRC)

2010 - 2013 **Scott Ladd**, Thesis Title: Developing Sustainable Supplier Evaluation and Selection Methodologies (currently with Infiltrator Water Technologies)

2010 - 2012 **William Faulkner**, Thesis Title: Economic Modeling & Optimization of a Region Specific Multi-feedstock Biorefinery Supply Chain (currently with Propel Fuels)

2010 - 2012 **Adam J. Brown**, Thesis Title: A Study of Queuing Theory in Low-to-high Rework Environments with Process Availability

2009 - 2011 **Ken Wijekoon**, Thesis Title: Modeling and Optimization to Evaluate Sustainability Performance of Customizable Product Service Systems (currently with Cummins Inc.)

2007 - 2009 **Mohannad Shuaib**, Thesis Title: An Algorithm to Solve the Associative Parallel Machine Scheduling Problem (currently with Gerdau Inc.)

2006 - 2008 **Brandon Stump**, Thesis Title: Applying Lean Manufacturing and other Strategies for Mass Customization Environments (Currently with Institute for Lean Systems)

2006 - 2008 **Haritha Metta**, Thesis Title: Adaptive, Multi-objective Job Shop

- Scheduling using Genetic Algorithms (currently with Big Fish Games)
- 2006 - 2008 **Arvind Goyal**, Thesis Title: Application of Artificial Neural Network Techniques for Design of Modular Minicell Configuration (currently with Cummins, Inc.)
- 2005 - 2007 **Kirthi Bedida** (Co-advisor), Thesis Title: An Approach to Inverse Modeling through the Integration of Artificial Neural Networks and Genetic Algorithms (currently with Apple, Inc.)
- 2005 - 2007 **Kundana Inala**, Thesis Title: Assessing Product Configurator Capabilities for Successful Mass Customization (currently with Cummins, Inc.)
- 2005 - 2007 **Smitha Thuramalla**, Thesis Title: Rule Extraction to Establish Design Criteria in Mass Customization Manufacturing (currently with Quest Diagnostics)
- 2005 - 2006 **Phanindra Chadalavada**, Thesis Title: Minimum Flow Time Schedule Genetic Algorithm for Mass Customization Manufacturing using Minicells (currently with MeadWestvaco)

MS Advisees (Project/Non-thesis)

Current

- 2012 - present **Mahya Zavarian**, Project Title: Lean Applications in the Power Generation Industry

Graduates

- 2007 – 2017 **Sonal Gupta**, Project Title: Application of Hybrid Six Sigma Methodology for Customer Quality Management System Implementation in Service Industry (currently with Cummins, Inc.)
- 2012 - 2015 **Anthony Karam** (currently with Orbital ATK)
- 2008 - 2010 **Demarcus Dawson**, Project Title: Evaluating the Impact of Training on Team Leader Capabilities in a Lean Environment (currently with Toyota North America)
- 2008 - 2010 **Taylor Dawson**, Project Title: Impact of Organizational Culture on Problem Solving Practices: A Survey (currently with FirstBuild)
- 2006 - 2008 **Naresh Tsavatapalli**, Project Title: Single Machine Scheduling with Sequence –dependent Setup Times to Minimize Total Tardiness
- 2005 - 2007 **Bader Meriden**, Project Title: Evaluation of Minicell Performance under Stochastic Demand Conditions through Simulation (currently at Guardian Engineering and Manufacturing)
- 2005 - 2007 **Ramu Thumala**, Project Title: A Case Study on Improving Parts Operations in Komatsu Remanufacturing Plant

2005 -2006 **Wen Huan Ng**, Project Title: Restructuring Operations at Ingersoll
Rand, Campbellsville, KY

Visiting/International Student Mentoring

05/2015 - present **Abdul Rehman**, PhD student at Università degli Studi di Genova,
Italy (co-advised with Jeff Seay)

01/2014 – 01/2015 **Eyup Calik**, PhD student, Istanbul Technical University, Istanbul,
Turkey (Assistant Professor at Yalova University, Turkey)

08/2013 – 10/2013 **Matthias Grabowski**, Undergraduate student at Karlsruhe Institute
of Technology, Germany

02/2013 – 10-2013 **Pinar Bilge** (co-advised with I.S. Jawahir), PhD student at Berlin
Technical University (BTU), Germany (now with BTU)

05/2008 – 08/2008 **Chandima Ratnayake** PhD student at Stavanger University of
Norway (now with Stavanger University)

Undergraduate Student Mentoring

2011-2012 **William Templeton**, Project: Sustainable Value Stream Mapping –
Sus-VSM (currently with Uber)

2011-2012 **Tyler Gullett**, Project: Sustainable Value Stream Mapping – Sus-VSM

TEACHING

University of Kentucky (8/2005 – Present)

Course No.	Course Title
EM 221	Engineering Statics (U)
ME/MFS 503	Principles & Practices of Lean Manufacturing (U/G)
ME/MFS 512	Manufacturing Systems (U/G)
ME 599/ ARC 599/ MKT 390	Systems Thinking for Sustainability (U/G)
ME/MFS 599 (MFS 699 in Spring 2007)	Occupational Ergonomics (U/G)
ME/MFS 606	Global Issues in Manufacturing (G)
ME/BAE 647	Systems Optimization I (G)

Ohio University (2002 – 2003)

Course No.	Course Title
ISE 330/530	Engineering Economy (U/G)

University of Peradeniya (1997-2000)

Course No.	Course Title
ENG 108	Workshop Technology (U)
ENG 351	Production Technology (U)
ENG 401	Industrial Engineering (U)
ENG 553	Production Cost Analysis (U)
ENG 593	Ergonomics for Productivity (U)
SCI 482	Production Management (U)

(U: undergraduate, G: Graduate)

SERVICE

Department Level Service

- Graduate Studies Committee Member (2014 – present)
- Online Studies Committee Member (2016 – present)
- Communications Committee Member (2016-2017)
- Department Policy and Rules Committee Member (2015-2016)
- Department Chair Search Committee Member (2014-2015)
- Faculty Search Committee Member (2015-2016/2017)
- Undergraduate Studies Committee Member (2009-2013)

College Level Service

- Faculty Search Committee Member, Sustainable Manufacturing Cluster Hiring (2016-2017)
- Founder and Chair, International Forum on Sustainable Manufacturing, University of Kentucky (2009 – present)
- College Graduate Studies Committee (2014 – present)
- Faculty Advisor, Society of Manufacturing Engineers (SME) Student Chapter, University of Kentucky (2009 – 2013)
- Co-Chair, Two-day Workshop on Innovation for Sustainable Manufacturing & Workforce Development, June 21-22, 2011, University of Kentucky.
- Associate Dean Search Committee, College of Engineering, 2013.

University Level Service

- Sustainability Challenge Grant Committee (2017 – 2018)
- University of Kentucky Provost's Faculty Sustainability Council (2017 –2018)
- Astronaut Foundation Scholarship Review Committee, 2013
- Advisory Committee Member, Scholars in Engineering and Management (SEAM) Program, University of Kentucky (2008-2011)
- Steering Committee Member, University of Kentucky Corporate Sustainability Award administered by the Tracy Farmer Institute for Sustainability and the Environment (TFISE), September, 2010.

Service to the Profession

Advisory/Review Boards

- Member, **Expert Educator Team (EET)** for Lightweight Innovations for Tomorrow (LIFT) in collaboration with Association for Public Land-grant Universities (ACLU) and the National Center for Manufacturing Sciences (NCMS) (2017-2018).
- Member, **External Advisory Board**, Department of Industrial and Systems Engineering, Ohio University (2008-2020).
- Argonne National Laboratory, **Energy and Global Security (EGS) Directorate Review Committee** (2014).
- **External Program Review Committee**, Department of Manufacturing and Industrial Engineering, University of Technology (UTM) Malaysia (2012)

Leadership Roles in Professional Organizations

- **Chair**, Lean Teaching Award, Institute for Industrial and Systems Engineers (IISE), Lean Division (2010 – 2013, 2015-2016, Co-Chair 2017)
- **President**, Lean Division, Institute for Industrial and Systems Engineers (IISE) , (formerly IIE) (2011-2012)
- **Director**, Institute for Industrial and Systems Engineers (IISE) , (formerly IIE), Lean Division Board (2009 to 2011)
- **Editor**, Lean Division Newsletter, Institute for Industrial and Systems Engineers (IISE) , (formerly IIE), (2009-2011)

Professional Conference Leadership

- **Conference Local Co-Chair**, 16th Global Conference on Sustainable Manufacturing, October 2-4, 2018, Lexington, KY.
- **Conference Organizing Committee**, 28th Flexible Automation and Intelligent Manufacturing (FAIM) Conference, June 25-27, 2018, Columbus, OH.
- **Conference Program Committee**, Engineering Lean and Six Sigma Conference (ELSS), 2012, 2013, 2015, 2016, 2017.
- **Best Paper Award Committee Co-Chair**, Engineering Lean and Six Sigma Conference (ELSS), 2017.
- **Track Co-Chair**, Sustainable Supply Chains Track, International Congress on Sustainability Science and Engineering (ICOSSE) 2015, Balatonfured, Hungary.
- **Conference Academic Chair**, Engineering Lean Six Sigma (ELSS) Conference, September 28 – October 1, 2014, Orlando, FL.
- **Program Committee**, 4th International Industrial Engineering and Operations Management (IEOM) Conference, Bali Indonesia, January 2014.
- **Associate Editor**, IEEE Conference on Automation Science and Engineering, August 17-21, 2013, Madison, WI.
- **International Scientific Committee**, CIRP Conference on Life Cycle Engineering (LCE), 2012, 2014, 2015, 2016.

- **Track Chair**, MCP Manufacturing Systems & Supply Chain Management Track, Mass Customization, Personalization and Co-creation (MCPC) Conference, 2011, San Francisco, CA.
- **Organizing Co-Chair**, Lean Systems Track, Industrial Engineering Research Conference (ISERC): 2010, 2011.
- **Session Organizer and Chair**, MC Manufacturing Systems session, 3rd International Mass Customization and Personalization Conference 2007, October 7 – 9, Boston, MA
- **Session Organizer and Chair**, Mass Customization session, Industrial Engineering Research Conference, May 19-23, 2007, Nashville TN
- **Session Organizer**, Lean Education and Simulation session, Industrial Engineering Research Conference, May 17-21, 2008, Vancouver, Canada.
- **Session Organizer and Chair** – MC Manufacturing Systems session, 3rd International Mass Customization and Personalization Conference (MCPC) 2007, October 7 – 9, Boston, MA.
- **Session Chair** – Elements of Successful MCP Manufacturing Systems Session, 3rd International Mass Customization and Personalization Conference 2007, October 7-9, Boston, MA.
- **Session Chair** –Production and Performance Management Session, 40th CIRP International Manufacturing Systems Seminar 2007, May 30 – June 1, Liverpool, England.
- **Session Chair** – Manufacturing Systems 2, Industrial Engineering Research Conference, May 20-24, 2006, Orlando, FL.

Editorial Boards and Journal Reviews

- **Editorial Board Member**, International Journal of Industrial Engineering and Operations Management (2017 -)
- **Editorial Board Member**, Journal of Manufacturing Technology Management (2012 -)
- **Editorial Board Member**, International Journal of Strategic Engineering Asset Management (2011 -)
- **Editorial Board Member**, ASTM Journal for Smart and Sustainable Systems (2016 –)
- National Science Foundation **Proposal Review Panel Member**
- **Technical reviewer** for: Journal of Manufacturing Systems, Journal of Cleaner Production, Journal of Intelligent Manufacturing, Computers and Industrial Engineering, International Journal of Production Research

PROFESSIONAL ORGANIZATION MEMBERSHIPS

- Institute of Industrial Engineers (2001 - present)
- American Society for Engineering Education (2013 – present)
- Society of Manufacturing Engineers (2005 - present)
- American Society for Engineering Education (2012-present)
- Council of Supply Chain Management Professionals (2009-2011, 2013-2015)
- Alpha Pi Mu Industrial Engineering Honor Society (2003 – present)