BHASKARAN GOPALAKRISHNAN

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EDUCATION

- Ph.D. in Industrial Engineering and Operations Research, Virginia Tech, Blacksburg, Virginia, 1988.
- M.S. in Operations Research, Southern Methodist University, Dallas, Texas, 1985.
- B.E. (Hons) in Production Engineering, College of Engineering Guindy, University of Madras, India, 1983.
- C.E.M., Certified Energy Manager, By Examination, Association of Energy Engineers, 1997-present, # 4983.
- Registered Professional Engineer (PE), West Virginia State Board of Registration for Professional Engineers, 2003-present, Registration # 15546.
- Qualified AIRMaster+ (Compressed Air) Specialist and Expert by Examination, US Department of Energy (US DoE), 2004.
- Qualified PHAST (Process Heating) Specialist and Expert by Examination, US DoE, 2007.
- Qualified FSAT (Fans) Specialist by Examination, US DoE, 2009.
- Qualified SSAT (Steam Systems) Specialist by Examination, US DoE, 2011.
- Qualified PSAT Specialist (Pump Systems) by Examination, US DoE, 2012.
- LEED Green Associate by Examination, 2014. GBCI#: 0010930207.

PROFESSIONAL EXPERIENCE

August 2003 - to present	Full Professor with Tenure, Department of Industrial and Management Systems Engineering (IMSE), West Virginia University
August 2005 - to present	Director, Industrial Training and Assessment Center (ITAC)
August 1992 - August 2005	Assistant Director of ITAC
August 2008 -	Co-Director, Industries of the Future – West Virginia

August 2011	(IOF-WV) and Energy Efficiency Research Fellow, National Research Center for Coal and Energy (NRCCE), West Virginia University
August 1994 - August 2003	Associate Professor with Tenure, Department of Industrial and Management Systems Engineering, West Virginia University
August 1988 - August 1994	Assistant Professor, Department of Industrial and Management Systems Engineering, West Virginia University
July 1987 - August 1988	Graduate Project Assistant, Department of Industrial Engineering and Operations Research, Virginia Tech
January 1986 - July 1987	Graduate Teaching and Research Assistant, Department of Industrial Engineering and Operations Research, Virginia Tech
July 1985 - December 1985	Computer Aided Design Engineer, MB and Associates, California
January 1984 - May 1985	Micro-computer Laboratory Assistant, Southern Methodist University, Texas
August 1983 - December 1983	Graduate Research Assistant, Department of Mechanical Engineering, Iowa State University, Iowa
July 1982 - May 1983	Engineer in Training (Part time), Brakes India Ltd., and Best & Crompton Ltd., India

RESEARCH ACCOMPLISHMENTS

- Graduated 102 graduate students (M.S. and PhD) under my guidance.
- Currently supervising Ph.D. and M.S students.

Funded research projects

1. Principal Investigator, (PI), Evaluation of the Energy Efficiency of the Blower Heater Non-Purge Desiccant Compressed Air Dryer, Hana Plant in South Korea, 2017 – 2019, $55,000
2. Principal Investigator (PI), Energy Efficiency for Maryland State Buildings, Maryland Energy Administration, 2013, $65,000.
3. Co-PI, Advancing an Interdisciplinary and Competitive Bioenergy Research Team at WVU, West Virginia University, 2011-2012, $179,500.
4. Principal Investigator (PI) and Director, Industrial Assessment Center (IAC) – Energy, Waste, and Productivity Assessment for Manufacturing Facilities, US DoE funding, 1992-2026, $ 7,855,000.

5. PI, Energy Efficiency Training and Climate Mitigation Research in China, Lawrence Berkeley National Laboratory and Oakridge National Laboratory, US DoE, 2010-2011, $ 60,000.
6. PI, Save Energy Now (SEN) Project, US DoE/WVOE (West Virginia Office of Energy) funding, 2008-2009, $ 50,000.
7. PI, Energy Assessments for West Virginia Industries of the Future (IOF), WVOE funding, 2008-2012, $ 350,000.
8. PI and Co-I, Energy Assessments, Industrial and Buildings Workshops, Lean Review, Benchmarking, and Carbon Footprint Analysis for Small Rural Businesses in WV, Sustainable Manufacturing through E3: Economy, Energy and Environment Initiative, EPA, USDA, WVDEP and WVOE funding, 2008-2027, $ 1,897,444.
9. PI, Energy Efficiency for Buildings, WVOE funding, 2010-2013, $150,000.
10. Co-PI, Market Transformation for EERE Technologies through State and Multi-State Implementation of Clean Energy Standard Offer Programs, WVOE funding, 2009-2011, $ 50,000.
11. PI, Development of a Regional Assessment/Implementation SEN Delivery System Partnership, US DoE/WVOE funding, 2009-2013, $ 1,458,431.
12. Co-PI, Biomass Plant Layout and Feedstock Supply, RDS, LLC, National Energy Technology Laboratory funding, 2009-2010, $ 100,000.
13. PI, Enhancement of GEPDSS model in Continuous Galvanizing Lines for Increased Productivity - ILZRO (International Lead Zinc Research Organization) funding, 2008-2013, $ 110,000.
14. PI, Plant Wide Energy Assessment for PPG Industries, US DoE/PPG Inc funding, $ 100,000, 2005-2007.
15. Co-PI, Improving Quality and Utilization of Upland Hardwoods in the Appalachian Region, USDA/CSREES funding, 2004-2010, $ 660,000.
16. PI, Energy Assessments for West Virginia Industries of the Future (IOF), West Virginia Development Office (WVDO) funding, 2002-2008, $ 375,000.
17. Co-PI, Life Improvement of Pot Hardware in Continuous Steel Hot Dipping Processes, US DoE funding, 2001-2005, $ 1,188,000.
18. Co-PI, Multifunctional Metallic and Refractory Materials for Energy Efficient Handling of Molten Metals, US DoE funding, 2004-2007, $ 655,000.
19. PI, Energy Validation Task for the IMF Project, UT-Battelle (ORNL) funding, 2004-2007, $ 30,000
20. Co-PI, Industries of the Future-West Virginia (IOF-WV) Special Projects Submission, US DoE/WVDO funding, 2002-2007, $ 300,000.

21. Co-PI, Industries of the Future Plant Wide Energy Efficiency Opportunity Assessment at the Bayer Corporation Plant, New Martinsville, WV, US DoE funding, 2001-2003, $ 85,960.
22. Co-PI, Outreach Strategies to Promote State-Level Partnerships that Expand Participation in Industries of the Future, US DoE funding, 2001- 2002, $ 50,000.
23. Co-PI, Wood Industry Assistance Program – Energy Assessments for Wood Processing Facilities, US DoE/WVDO funding, 2000-2008, $ 325,000.
24. Co-PI, FEMP US Bureau of Engraving and Printing - Energy Assessment, US DoE funding, 2001-2002, $ 11,150.
25. Co-PI, Industries of the Future-West Virginia (IOF-WV) Special Projects Submission, US DoE/WVDO funding, 1999-2001, $ 185,000.
26. Co-PI, Product Design for Worker Safety and Health (TEXPERT), National Environmental Education and Training Center (NEETC) funding, $ 1,620,310, 1998-2003.
27. PI, Evaluation of Multi-Product Interactions for Southern Appalachian Hardwood Stands, United States Department of Agriculture, Forest Service (USDA) funding, $ 10,000, 1998-99.
28. PI, Evaluation of Materials for Use in Zn-Al Liquid Metal Coating Systems, Lockheed Martin Energy Research Corporation – Oak Ridge National Laboratory funding, $ 54,391, 1998-99.
29. PI, Plastics Recycling: Knowledge Engineering for Enabling Expert Systems Development, DN American Inc funding, $ 15,000, 1998-99.
30. PI, Design Stage Recognition and Evaluation of Worker and Environmental Safety and Health (TEXPERT), NEETC funding, $ 251,498, 1997-98.
31. Co-PI, Projects for Positive Effect on Energy Efficiency and the Environment, Pennsylvania Department of Environmental Protection funding, $ 67,250, 1997-99.
32. Co-PI, Industries of the Future - West Virginia Support Program, US DoE/WVDO funding, $ 100,000, 1997-99.
33. Co-PI, Industrial Assessments for WV Glass Plants, WVDO funding, $ 50,000, 1996-98.
34. PI, Development of an Expert System for Hardwood Group Selection, USDA Forest Service funding, $ 21,000, 1994-98.
35. PI, Expert Systems for Industrial Waste Minimization, National Research Center for Coal and Energy (NRCCE) funding, $ 30,000, 1995-97.
36. PI, Computer Based Forest Stand Management Incorporating Wildlife Impacts, USDA Forest Service funding, $ 25,000, 1994-96.

37. PI, Design and Development of Expert Systems for Energy Analysis and Diagnostics: Energy Self-Assessment for Industries (ENERGEX), US DoE funding, $ 50,000, 1994-95.
38. PI, Expert Systems for Energy Analysis and Diagnostics in Manufacturing Industries (ENERGEX), NRCCE funding, $ 45,000, 1993-95.
39. PI, Expert Systems for Forest Stand Management, USDA Forest Service funding, $ 37,000, 1992-94.
40. PI, A Machine Learning Model for Robotic Applications, NASA/WV Space Grant Consortium, $ 10,000, 1992-93.
41. Co-PI, Machinability Analysis of Product Designs in Concurrent Engineering, DARPA Initiative in Concurrent Engineering (DICE), US Department of Defense funding, $ 172,000, 1988-91.

PUBLICATIONS

Peer-reviewed Journal Articles and Book Chapters

1. Subnom, R., Recktenwald, J.J., Gopalakrishnan, B., Qiu, S., Johnson, D., Li, H., Performance Evaluation of a 140 kW Rooftop Grid-Connected Solar PV System in West Virginia, ***Sustainability,*** pp.1-20, 2025.
2. Vaish, P., Means, K., Gopalakrishnan, B., Li, H., Rectenwald, J.J., Sustainability-Based Development of a Remote Technique to Assess the Effectiveness of Thermal Insulation in Households in West Virginia, ***Sustainability***, pp.1-28, 2025.
3. Abolhassani, A., Rahimikollu, J., Gopalakrishnan, B., Towards a cleaner future: A novel approach to enhance energy efficiency in the US manufacturing industry with fuzzy logic-TOPSIS, ***Energy***, pp.1-18, 2025.
4. Adhikari, N., Li, H., Gopalakrishnan, B., A Bibliometric and Systematic Review of Carbon Footprint Tracking in Cross-Sector Industries: Emerging Tools and Technologies, ***Sustainability***, pp.1-30, 2025.
5. Das, R., Mostafa, R., Gopalakrishnan, B., Occupancy Based Building Energy Analysis Using Discrete Event Simulation, ***Energy Engineering***, pp.1-26, 2025.
6. Lamichhane, S., Mostafa, R., Gopalakrishnan, B., Devaru, G.D., eQUEST Based Building Energy Modeling Analysis for Energy Efficiency of Buildings, ***Energy Engineering***, pp.1-25, 2024.
7. Chowdhury N.I., Gopalakrishnan, B., Adhikari, N., Li, H., Liu, Z., Evaluating Electrification of Fossil-Fuel-Fired Boilers for Decarbonization Using Discrete-Event Simulation, ***Energies***, 2024, 17(12), 2882.
8. Bisht, P.S., Gopalakrishnan, B., Dahal, R., Li, H., Liu, Z., Parametric Energy Efficiency Impact Analysis for Industrial Process Heating Furnaces Using the Manufacturing Energy Assessment Software for Utility Reduction, ***Processes***,

Vol. 12, No. 4, pp. 1-22, 2024.

9. Perera, J.C., Gopalakrishnan, B., Chaudhari, S., Sundaramoorthy, S., A Sustainability-Based Expert System for Additive Manufacturing and CNC Machining, ***Sensors***, Vol. 23, Number 7770, pp. 1-22, 2023.
10. Wagle, S., Gopalakrishnan, B., Li, H., Liu, Z., Chaudhari, S., Sundaramoorthy, S., Simulating Energy Performance of Buildings: A Study Using eQuest and Energy Star Portfolio Manager, ***Architectural Engineering and Design Management***, pp. 1-22, 2023.
11. Abolhassani, A., Boyd, G., Jaridi, M., Gopalakrishnan, B., Harner, J., Is Energy That Different from Labor? Similarity in Determinants of Intensity for Auto Assembly Plants, ***Energies***, Vol. 16, Number 1776, pp. 1-35, 2023.
12. Karki, U., Gopalakrishnan, B., Evaluation of Process and Economic Feasibility of Implementing A Topping Cycle Cogeneration, ***Energy Engineering***, Vol. 120, pp. 345-365, 2023.
13. Karki, V., Mostafa, R., Gopalakrishnan, B., Johnson, D.R., Determination of Effectiveness of Energy Management System in Buildings, ***Energy Engineering***, Vol. 120, pp. 561-586, 2023.
14. Alahmadi, M.F., Gopalakrishnan, B., Wagle, S., Determination of Cost-effective Range in Surface Finish for Single Pass Turning, ***International Journal of Manufacturing Research***, in press, 2023.
15. Devaru, D.G., Pooviah, P.K., Mohan, N., Gopalakrishnan, B., Energy Conservation Potential in Micro, Small and Medium Enterprises (MSME) of India - Case Study, ***JSS Journal of Scientific Studies***, Vol. 1, pp. 11-20, June 2022.
16. Jammulamadaka, H.S., Gopalakrishnan, B., Chaudhari, S., Sundaramoorthy, S., Mehta, A.R., Mostafa, R., Evaluation of Energy Efficiency Performance of Heated Windows, ***Energy Engineering***, Vol. 119, Number 1, 2022.
17. Nimbarte, A., Smith, N., Gopalakrishnan, B., Human Factors Evaluation Of Energy Visualization Dashboards, ***Ergonomics in Design: The Quarterly of Human Factors Applications,*** July 2021. DOI:10.1177/106480-46211028693
18. Botts, A., Gopalakrishnan, B., Nimbarte, A., Currie, K., Karki, V., Energy Efficiency of Blower Heater Non-Purge Compressed Air Dryers, ***International Journal of Energy Technology and Policy (IJETP)***, Vol. 17, No. 3, July 2021.
19. Kianpour, P., Gupta, D.P., Gopalakrishnan, B. Automated Job Shop Scheduling With Dynamic Processing Times And Due Dates Using Project Management And Industry 4.0, ***Journal of Industrial and Production Engineering (TJCI)***, Vol. 38, Issue 7, pp. 485-498, June 2021.
20. Al-Shebeeb, O., Gopalakrishnan, B., Currie, K., Wuest, T., Analysis of the Synergistic Integration of DFMT with CAPP and MP in Metal Parts Manufacturing based on Cost Analysis and Systematic Algorithm, ***International Journal of Manufacturing Research***, in press,

2023.

21. Kianpour, P., Gupta, D.P., Krishnan, K.K., Gopalakrishnan, B., Optimizing Unrelated Parallel Machine Scheduling in Job Shops With Maximum Allowable Tardiness Limit, ***International Journal of Industrial and Systems Engineering***, Vol. 37, No. 3, 2021.
22. Al-Shebeeb, Omar., Gopalakrishnan, B., Devaru, Dayakar., Evaluating the Influence of Energy Consumption on Process Plan Attributes: Process Plans Indexing Based on Electrical Demand and Energy Consumption, ***Handbook of Research on Advancements in Manufacturing, Materials, and Mechanical Engineering***, Chapter in the book edited by Dr. Leonid Burstein, IGI Global, DOI:10.4018/978-1-7998-4939-1.ch005, 2020.
23. Mandlem, K., Gopalakrishnan, B., Nimbarte, A., Mostafa, R., Das, R., Energy Efficiency of Smart Thermostat Based BEMS, ***Energy Engineering***, Tech Science Press, Vol. 117, No. 4, 2020.
24. Devaru, D.G., Gopalakrishnan, B., Regression Model to Estimate Electrical Energy Consumption of Lumber Sawing Based on Product, Process, and System Parameters, ***Energy Efficiency Journal***, Volume 13, No.8, pp. 1799-1824, October 2020.
25. Devaru, D.G., Maddula, R., Gopalakrishnan, B., Establishing and Comparing Electrical Energy Consumption of Sawmills, ***International Journal of Applied Management Science***, Vol. 12, No.1, pp. 23-49, 2020.
26. Smith, N., Nimbarte, A., Gopalakrishnan, B., Wuest, T., Real-time Energy Visualization System for Light Commercial Businesses, ***Sustainable Energy Technology and Assessments Journal***, Vol. 34, pp. 68-76, August 2019.
27. Chowdhury, S.K., Nimbarte, A.D., Hsiao, H., Gopalakrishnan, B., and Jaridi, M., A Biomechanical Shoulder Strain Index Based on Stabilizing Demand of Shoulder Joint, ***Journal of Ergonomics***, pp. 1657-1670, 2018.
28. Gopalakrishnan, B., Nimbalkar, Sachin U., Wenning, Thomas J., and Thirumaran, Kiran. ***Industrial Assessment Center (IAC) Operations Manual***. United States: N. p., 2017. Web. doi:10.2172/1352768.
29. Kanneganti, H., Gopalakrishnan, B., et al., Specification of Energy Assessment Methodologies to Satisfy ISO 50001 Energy Management Standard, ***Sustainable Energy Technology and Assessments***, Vol. 23, pp. 121-135, 2017.
30. Latif, H., Gopalakrishnan, B., Nimbarte, A., Currie, K., Sustainability Index Development for Manufacturing Industry, ***Sustainable Energy Technology and Assessments***, Vol. 24, pp. 82-95, 2017.
31. Abolhassani, A., Harner, J., Jaridi, M., Gopalakrishnan, B., Productivity Enhancement Strategies in North American Automotive Industry, ***International Journal of Production Research***, pp. 1-18, August 2017.
32. Kaiser, J., Nimbarte, A., Davari, D., Gopalakrishnan, B., He, X., Study of Skin

Conductance and Perceived Discomfort of the Hand/Finger System Under Controlled Atmospheric Conditions, ***Theoretical Issues in Ergonomic Science***, Vol. 18, No. 5, pp. 442-454, 2017.

33. Al-Shebeeb, O., Rangaswamy, S., Gopalakrishnan, B., Devaru, D., Evaluation and Indexing of Process Plans Based on Electrical Demand and Energy Consumption, ***International Journal of Manufacturing, Materials, and Mechanical Engineering***, Vol. 7, Issue: 3, pp. 1-19, July- September 2017.
34. Abolhassani, A., Layfield, K., Gopalakrishnan, B., Lean and US Manufacturing Industry: Popularity of Practices and Implementation Barriers, ***International Journal of Productivity and Performance Management***, Vol. 65, Issue 7, pp. 875 – 897, 2016.
35. Sundaramoorthy, S., Quang, P., Gopalakrishnan, B., Latif, H., Heat Balance Analysis of Annealing Furnaces and Zinc Pot in Continuous Hot Dip Galvanizing Lines, ***Energy Engineering Journal***, Vol. 113, No. 2, pp. 12-47, 2016.
36. Devaru, D., Banuri., Gopalakrishnan, B., Halabe, U., Latif, H., Feasibility Analysis for Implementing GPR Scanning System in Sawmills for Productivity Improvement, ***International Journal of Advances in Management Science***, Vol. 4, No. 1, pp. 1-15, July 2015.
37. Devaru, D.G., Maddula R., Grushecky, S., Gopalakrishnan, B., Motor- Based Energy Consumption in West Virginia Sawmills, ***Forest Products Journal***, Vol. 64, No. ½, pp. 33-40, 2014.
38. Gopalakrishnan, B., Gupta, D.P., Chaudhari, S., The Effect of System Storage on the Performance Profile of Rotary Screw Air Compressors, ***Energy Engineering Journal***, Vol. 111, No. 4, pp. 25-33, 2014.
39. Gopalakrishnan, B., Ramamoorthy, K., Crowe, E., Chaudhari, S., Latif, H., A Structured Approach for Facilitating the Implementation of ISO 50001 Standard in the Manufacturing Sector, ***Sustainable Energy Technologies and Assessments Journal***, Vol. 7, pp. 154–165, 2014.
40. Munisamy, A., Gopalakrishnan, B., Chaudhari, S., Jaridi, M., Crowe, E., Gupta, D.P., A Computer Based Total Productive Maintenance Model for Electrical Motors, ***International Journal of Productivity and Quality Management***, Vol.13, No.2, pp.178 – 200,2014.
41. Chaudhari, S., Gupta, D., and Gopalakrishnan, B., Using IAC Database for Longitudinal Study of Small to Medium Sized Automotive Industry Suppliers' Energy Intensity Changes, ***SAE International Journal of Materials and Manufacturing***, Vol. 6, No. 3, pp. 427-435, 2013.
42. Alkadi, N.E., Gopalakrishnan, B., Chaudhari, S., Product Design for Energy Reduction in Concurrent Engineering: An Inverted Pyramid Approach, ***International Journal of Industrial and Systems Engineering***, Vol. 15, No. 1, pp. 90-117, 2013.

43. Gopalakrishnan, B., Mardikar, M., Gupta, D.P., Jalali, S., Chaudhari, S., Establishing Baseline Electrical Energy Consumption in Wood Processing Sawmills: A Model Based on Energy Analysis and Diagnostics, ***Energy Engineering Journal***, Vol. 109, No. 5, pp. 40-80, 2012.
44. Lin, W., Wang, J., Grushecky, S.T., Summerfield D., Gopalakrishnan, B., Energy Consumption and Efficiency of Appalachian Hardwood Sawmills, ***Forest Products Journal***, Vol. 62, No. 1, pp. 32-38, 2012.
45. Chaudhari, S., Gupta, D.P., Gopalakrishnan, B., Investigation of Relationship between System Efficiency Curve and Measurement and Verification (M&V) of Energy Savings, SAE, ***International Journal of Materials and Manufacturing,*** Vol. 4 No. 1 pg. 486-494, June 2011.
46. Halabe, U., Gopalakrishnan, B., Jadeja, J., Advanced Lumber Manufacturing Model for Increasing Yield in Sawmills Using GPR Based Defect Detection Systems, ***International Journal of Advanced Manufacturing Technology***, Vol. 56, pp. 649–661, 2011.
47. Gupta, D.P., Gopalakrishnan, B., Chaudhari, S., Jalali, S.M., Development of an Integrated Model for Process Planning and Parameter Selection for Machining Processes, ***International Journal of Production Research***, ISSN 0020–7543 print/ISSN 1366–588X online, Taylor and Francis, Vol. 49, Issue 21, pp. 6301-6319, 2011.
48. Gopalakrishnan, B., Gajera, D., Athinarayanan, R., Chaudhari, S., Process Costing of the Microchip, ***International Journal of Industrial and Systems Engineering,*** Vol. 8, No. 3, pp. 326-345, 2011.
49. Gerdes, K., Fuller, J.A., Gopalakrishnan, B., Gupta, D.P., Energy Supply Concerns: A United States Perspective on Electric Power Generation, ***Energy Studies Review***, Vol. 17, No. 1, 2010.
50. Gopalakrishnan, B., Chavan R., Gupta, D.P., Alkadi, N., Energy Consumption Modeling and Benchmarking in Continuous Galvanising Lines, ***International Journal of Energy Technology and Policy***, Vol. 7, No. 3, 2010.
51. Gopalakrishnan, B., Mardikar, M., Korakakis, D., Energy Analysis in Semi-Conductor Manufacturing, ***Energy Engineering Journal***, Vol. 107, No. 2, pp. 6-40, 2010.
52. Gupta, D.P., Gopalakrishnan, B., Energy Sensitive Machining Parameter Optimization, ***International Journal of Industrial and Systems Engineering***, Vol. 5, No. 4, pp.405-423,2010.
53. Halabe, U.B., Agrawal, S., Gopalakrishnan, B., Nondestructive Evaluation of Wooden Logs using Ground Penetrating Radar, ***Nondestructive Testing and Evaluation***, Vol. 24, No. 4, pp. 329-346, December 2009.
54. Devaru, D., Halabe, U., Gopalakrishnan, B., Agrawal, S., Ground Penetrating Radar (GPR) Based System for Non-Destructive Detection of Interior Defects in Wooden Logs, ***International Journal of Manufacturing***

Research**,** Vol. 3, No. 4, pp. 425-451, 2008.

55. Gopalakrishnan, B., McCoy, M., Adaptive Process Control for Turning Operation using Expert System, ***International Journal of Industrial and Systems Engineering*****,** Vol. 3, No. 6, 2008.
56. Gopalakrishnan, B., Chandrasekharan, A., Maintenance Risk Reduction for Effective Facilities Management, ***Journal of Facilities Management*****,** Vol. 6, No. 1, 2008.
57. Gopalakrishnan, B., Gupta, D., Insulation Recommendations for Manufacturing Facilities From An Industrial Assessment Center, ***Insulation Outlook, The Official Journal of the National Insulation Association***, Vol. 52, No. 5, pg. 4-8, June 2007.
58. Gopalakrishnan, B., Jaraiedi, M., Iskander, W., Ahmad, A., Tolerance Synthesis Based on Taguchi Philosophy, ***International Journal of Industrial and Systems Engineering***, Vol. 2, No. 3, 2007**.**
59. Gopalakrishnan, B., Gupta, D.P., Mardikar, Y., Chaudhari, S., Industrial Energy Efficiency, ***Handbook of Environmentally Conscious Manufacturing***, John Wiley & Sons, Inc., March 2007**.**
60. Gopalakrishnan, B., Banta, L., Bhave, G., Modeling Steam Based Energy Supply Chain in an Integrated Steel Manufacturing Facility: A Simulation Based Approach, ***International Journal of Industrial and Systems Engineering***, Vol.2, No. 1, pp.1-29,2007.
61. Gopalakrishnan, B., Kokatnur, A., Gupta, D. P., Design and Development of a Target-Costing System for Turning Operation, ***Journal of Manufacturing Technology Management***, Vol. 18, No.2, pp. 217-238, 2007.
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63. Gopalakrishnan, B., Mate, A., Mardikar, Y., Gupta, D., Plummer, R., Anderson, B., Energy Efficiency Measures in the Wood Manufacturing Industry, ***Proceedings of the 2005 ACEEE*** *(American Council for an Energy Efficient Economy) Summer Study on Energy Efficiency in Industry on CD ROM*, ISBN 0-918249-54-6, West Point, New York, July 2005.
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65. Gopalakrishnan, B., Selvaraj, R., Turton, R., Plummer, R. W., Sukumar, S., A Systems Approach to Plant-Wide Energy Assessment, ***Energy Engineering Journal***, Volume 102, No. 5, pp. 49-80, 2005.
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an Autonomous Mobile Smart Vehicle: A Mechatronics Application, ***Mechatronics,*** Vol. 14, pp. 491-514, 2004.

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73. Gopalakrishnan, B., Yoshii, T., Dappili, S.M., Decision Support System for Machining Center Selection, ***Journal of Manufacturing Technology Management,*** Vol. 15, Number. 2, pp.144-154,2004.
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76. Gopalakrishnan, B., R.W. Plummer, N.M. Alkadi, Analysis of Energy Conservation Opportunities in Glass Manufacturing Facilities, ***Energy Engineering,*** Journal of the Association of Energy Engineers, Vol. 98, No. 6, pp. 27-49, 2001.
77. Reynold Franklin, Udaya B. Halabe, Gopalakrishnan, B., Knowledge Based Assistant for Ultrasonic Testing Methodology of Metals, ***Materials Evaluation***, Vol. 59, No. 12, pp. 1399-1405, December 2001.

78. Gopalakrishnan, B., R.W. Plummer, N.M. Alkadi, Comparison of Glass Manufacturing Facilities based on Energy Consumption and Plant Characteristics, ***Journal of Energy and Development,*** Vol. 27, No. 1, pp. 101-115, Autumn 2001.
79. Gopalakrishnan, B., Plummer, R.W., and Nagarajan, S., ENERGEX: Expert Systems for Industrial Energy Conservation and Management, ***Energy Engineering,*** Journal of the Association of Energy Engineers, Vol. 94, No. 2, pp. 58-79, 1997.
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81. Gopalakrishnan, B., Adhikari, S., Chintala, S., and Bhaskaran, G., Design for Effective Product Storage and Distribution in Concurrent Engineering, ***Design for X: Concurrent Engineering Imperatives***, chapter in the book edited by Dr. George Huang, Chapman and Hall, pp. 230-244, 1996.
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88. Gopalakrishnan, B., Computer Integrated Machining Parameter Selection in a Job Shop using Expert Systems**,** ***Journal of Mechanical Working Technology***, Vol. 20, No. 3, September 1989.

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2. Al-Shebeeb, O., Gopalakrishnan, B., Computer Aided Process Planning Approach for Cost Reduction and Increase in Throughput, ***Proceedings of the International Conference on Industrial Engineering and Operations Management***, Detroit, MI, September 2016.
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4. Gopalakrishnan, B., Jalali, S.M., Chaudhari, S., Gupta D.P., Crowe. E., Design and Development of an Energy Efficiency Knowledge Center, ***Proceedings of ICINCO 2014***, Vienna, Austria, September 2014.
5. Bhadra, S., Gopalakrishnan, B., Chaudhari, S., Energy Efficiency in Continuous Galvanizing Lines, ***Proceedings of the International Renewable and Sustainable Energy Conference (IRSEC'13)***, Ouarzazate, Morocco, March 2013.
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9. Crowe, E., Gopalakrishnan, B., Cullen, K., Chaudhari, S., Results of an Enhanced Save Energy Now (SEN) Energy Assessment, A Case Study of a Steel Mini-Mill, ***Proceedings of the Industrial Energy Technology Conference***, New Orleans, USA, May 2011.
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11. Cullen, K., Crowe, E., Gopalakrishnan, B., Chaudhari, S., Save Energy Now Regional Partnership: Advancing Energy Productivity through Government, Industrial, and University Collaboration, ***Proceedings of the ACEEE Summer Study on Energy Efficiency in Industry***, Niagara Falls, USA, 2011.

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20. Devaru, D., Halabe, U.B., Gopalakrishnan, B., Agrawal, S., Grushecky, S., Algorithm for Detecting Defects in Wooden Logs using Ground Penetrating Radar, ***Proceedings of the Intelligent Systems in Design and Manufacturing VI Conference***, Society of Photo Optical Instrumentation Engineers (SPIE), Boston, MA, Vol.5999, 2005.
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for Load Estimation in Electrical Motors, ***Proceedings of the Intelligent Systems in Design and Manufacturing V Conference*****,** SPIE, Philadelphia, Vol. 5605, 2004.

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25. Gopalakrishnan, B., Alkadi, N.M., Plummer, R.W., Design for Energy: An Inverted Pyramid Approach, ***Proceedings of the Industrial Energy Technology Conference***, Texas A and M University, Houston, 2002.
26. Akladios, M., McMullin, D., Gopalakrishnan, B., Becker, P.E., Carr, M., Lobo, P., Farmani, M., Decker, A., Safety by Design & Future Developments, ***Proceedings of the Intelligent Systems in Design and Manufacturing IVConference***, Society of Photo Optical Instrumentation Engineers (SPIE), Newton, MA, October 2001.
27. Gopalakrishnan, B., Gunasekaran, A., Editors**,** ***Proceedings of the Intelligent Systems in Design and Manufacturing Conference IV***, SPIE, Newton, MA, 2001.
28. Gopalakrishnan, B., Gunasekaran, A., Editors, ***Proceedings of the Intelligent Systems in Design and Manufacturing Conference III***, SPIE, Boston, 2000.
29. McMullin, D.L., Akladios, M., Gopalakrishnan, B., Myers, W., Becker, P., Development, Validation, and Limitations of an Expert System for Safety and Health Concerns in Technology Development, ***Proceedings of the 14th Triennial Congress of the International Ergonomics Association***, Human Factors and Ergonomics Society, 2000.
30. Akladios, M., McMullin, D., Becker, P.E., Gopalakrishnan, B., Carr, M., Lobo, P., Advances in Safety by Design, ***Proceedings of the Intelligent Systems in Design and Manufacturing III***, SPIE, Vol. 4192, 2000.
31. Ammar, H.H., Yacoub, S.M., Mili, A., Gopalakrishnan, B., Toward an Integrated Approach to Systems Design, ***Proceedings of the International Conference on Intelligent Systems in Design and Manufacturing II,*** SPIE, Boston, 1999.
32. Akladios, M., McMullin, D., Gopalakrishnan, B., Design for Worker Safety:

    An Expert Systems Approach, ***Proceedings of the International Conference on Intelligent Systems in Design and Manufacturing II***, SPIE, Boston, 1999.
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38. Gopalakrishnan, B., Murugesan, S., Struger, O., Zeichen, G., Editors, ***Proceedings of the Architectures, Networks, and Intelligent Systems for Manufacturing Integration Conference***, SPIE, Pittsburgh, 1997.
39. Irwin, C., and Gopalakrishnan, B., Industries of the Future in West Virginia (IOF-WV), Concept Paper, ***NRCCE publication***, West Virginia University, 1997.
40. Gopalakrishnan, B., Plummer, R.W., Srinath, S., Meffe, C., Veena, R., and Ipe, J., Energy Analysis and Diagnostics Data Analysis from Industrial Energy Assessments for Manufacturing Industries, ***Proceedings of the 19th National Energy Technology Conference,*** Texas A & M University**,** Houston, TX, 1997.
41. Gopalakrishnan, B., Akella, V., A Systematic Approach for the Selection and Evaluation of Suppliers: Application in the ISO 9000 Domain, ***Proceedings of the International Conference on Quality Engineering and Management***, PSG College of Technology, Coimbatore, India, August 1997.
42. Gopalakrishnan, B., and Pericherla, R., Design for Manufacturability of the Liquefied Petroleum Gas Cylinder**,** ***Proceedings of the International Industrial Engineering Research Conference***, IIE, Miami, FL, May 1997.
43. LeDoux, C.B., Gopalakrishnan, B., Mudiyanur, S., Maximizing Financial Yields while Meeting Landowner Objectives and Ecosystem Goals, ***Proceedings of the Joint Meeting of the Council on Forest Engineering and International Union of Forest Research Organizations Subject Group***, S3.04-00, Marquette, MI, August 1996.
44. Gopalakrishnan, B., Shashikiran, U.R., Sriram, T.L., Educational and

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45. Ledoux, C., and Gopalakrishnan, B., FOREX - An Expert System for Managing Even-Aged Upland Oak Forests on Steep Terrain, ***Proceedings of the 10th Central Hardwood Forest Conference***, Morgantown, WV, 1995.
46. Chintala, S., and Gopalakrishnan, B., Product Design for Effective Storage in Concurrent Engineering, ***Proceedings of the Conference on Concurrent Engineering: Research and Applications***, ISPE, Pittsburgh, PA, 1994.
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48. Gopalakrishnan, B., CNC Machinability: A New Definition in Concurrent Engineering, invited paper, ***Proceedings of the IIE International Research Conference***, IIE, Chicago, May 1992.
49. Gopalakrishnan, B., and Pathak, M., Machine Parameter Selection and Cost Estimation Techniques: Applications in Concurrent Engineering, ***Proceedings of the Manufacturing International Conference***, (MI'92), SME, Dallas, TX, 1992.
50. Gopalakrishnan, B., and Song, J., Machine Learning Models for Machining Process Planning, ***Proceedings of the Flexible Automation and Information Management Conference***, Washington, D.C., 1992.
51. Gopalakrishnan, B., An Educational Perspective on Product Design for Manufacturing, ***Proceedings of the IBM Academic Computing Conference***, Dallas, TX, 1991.
52. Dwivedi, S., Gopalakrishnan, B., etal., A Manufacturing Knowledge-Based System with Integrated Forge, Machine, and Assemble Process Modelers, ***Proceedings of the International Conference and Workshop on Simultaneous Engineering***, New Delhi, India, 1991.
53. Gopalakrishnan, B., and Pandiarajan, V., Feature Based Machining Analysis and Cost Estimation for the Manufacture of Complex Geometries in Concurrent Engineering, ***Proceedings of the Fifth International Conference on CAD/CAM, Robotics, and Factories of the Future***, ISPE, Norfolk, VA, December 1990.
54. Gopalakrishnan, B., and Pathak M., Expert Systems for Milling Process Selection, ***Proceedings of the Fifth International Conference on CAD/CAM, Robotics, and Factories of the Future***, ISPE, Norfolk, VA, December 1990.
55. Gopalakrishnan, B., and Pandiarajan, V., Product Design and Process Planning for the Machining of Complex Geometries in Concurrent

Engineering, ***Proceedings of the 23rd International Symposium on Automotive Technology and Automation***, Vienna, Austria, December 1990.

56. Gopalakrishnan, B., and Pandiarajan, V., Product Design for Manufacturing: The Use of Knowledge Based Systems in Concurrent Engineering, ***Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics***, Los Angeles, November 1990.
57. Gopalakrishnan, B., Expert Systems Based Machining Process Evaluation and Selection in Concurrent Engineering, ***Proceedings of the 2nd Annual Symposium on Mechanical System Design in a Concurrent Engineering Environment***, Iowa City, October1990.
58. Gopalakrishnan, B., and Pathak, M., A Demonstration of the Concurrent Engineering Process using Feature Based Design, Machining Process Selection, and Machining Cost Estimation Models, ***Proceedings of the 2nd Annual Symposium on Mechanical System Design in a Concurrent Engineering Environment***, Iowa City, October1990.
59. Gopalakrishnan, B., Machining Advisor for Concurrent Engineering, ***Proceedings of the IIE Integrated Systems Conference***, Atlanta, GA, November 1989.
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COURSES TAUGHT

Student Evaluation of Instruction (SEI) scores predominantly between 4 (good) and 5 (excellent) for all courses taught. Refer to website for details.

- Energy Efficiency and Sustainability
- Expert Systems in Manufacturing
- Engineering Economy
- Design of Dynamic Materials Systems
- Facilities Planning and Materials Handling
- Computer Aided Process Planning
- Advanced Production Control
- Materials and Costing
- Advanced Engineering Economy
- Engineering Management
- Production Planning and Control
- Manufacturing Processes
- Computer Applications

TRAINING ACTIVITIES

- Industrial and Buildings Energy Efficiency, Beijing, China, 2010 and 2011.
- Energy Management Practices by SME, for IEA on behalf of US DoE, Guilin, China, 2015.
- Energy Efficiency in Compressed Air Systems, Compressed Air Challenge, 2013-2017.
- Fundamentals of Steam Systems, for SEI of National Environment Agency (NEA), Singapore, 2017.
- Industrial Waste Heat Recovery, for SEI of National Environment Agency (NEA), Singapore, 2018.
- Professional Sharing Series Lecture, for SEI of National Environment Agency (NEA), Singapore, 2018.

SERVICE ACCOMPLISHMENTS

- ABET Coordinator for the BS Industrial Engineering program in the IMSE Department since 2000. Coordination of all data collection, working with faculty and students to prepare outcome-based assessment documentation for accreditation by ABET. Successful in enabling ABET 6-year accreditation (without any weaknesses or deficiencies) for the BS IE program in 2003, 2009, and 2015.
- Member of the IEnMP Board of Directors, 2017 to present.
- Invited presentation on "Continuous Improvement in Sustainability through Energy Efficiency," IRSEC'13 Conference, Morocco, March 2013.
- Member of FE Examination Review Panel for Industrial Engineering, NCEES, Clemson, SC, 2006 - present.
- Chair of FE Examination Review Panel for Industrial Engineering, NCEES, Clemson, SC, 2010 - 2013.
- Member of the PE Examination Review Panel for Industrial Engineering, NCEES, Clemson, SC, 2012-present.
- Member of International Advisory Committee, Kalasalingam University, India, 2011.
- Invited member of the Editorial Board, International Journal of Energy Technology and Policy, 2009-present.
- Energy Assessments Team Leader, West Virginia Industries of the Future Program (IOF-WV), WVU.

- International energy assessment activities: China (2007), Sweden (2009).
- Responsible for submission and grading PhD qualifying examination questions for IENG 343 (Production Planning and Control).
- Evaluator of graduate program applications for IMSE department.
- Program Committee Member, International Conference on Informatics in Control, Automation, and Robotics, 2011, 2012, 2013, 2014, 2015, 2016, 2017.
- Invited as special guest, Inauguration of the International Conference on Thermal Energy and Environment, Kalasalingam University, 2011.
- Member, Technical Program Committee and Session Chair, Sustainable and Energy Efficient Manufacturing, Sustainable Materials and Components, SAE World Congress, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016.
- Member, Technical Program Committee, Vehicle Electrification Strategies for Sustainability, SAE World Congress, 2017, 2018.
- Conference Chairman, Intelligent Systems in Design and Manufacturing Conference, Society of Photo Optical Instrumentation Engineers (SPIE), Boston, for the years 1997, 1998, 1999, 2000, 2001, 2003, 2004, and 2005.
- Editor of Proceedings, Intelligent Systems in Design and Manufacturing Conference, SPIE, Boston, 1997, 1998, 1999, 2000, 2001, 2003, 2004, and 2005.
- Member of Program Committee, Data Mining Conference, SPIE, Boston, 2006.
- Member of Program Committee, Internet-Based Enterprise Integration and Management Conference, SPIE, Boston, 2001.
- Paper reviewer for various international research journals, such as International Journal of Production Research, Journal of Manufacturing Science and Engineering, Computers and Industrial Engineering, Engineering Economics.
- Invited by the Society of Manufacturing Engineers to be a technical advisor on manufacturing engineering to government agencies and industries since 1994.
- Past member, IIE, AEE, SME
- Member of Editorial Board of Energy Engineering Journal.
- Member of Editorial Board of International Journal of Energy Technology and Policy.
- Member of the AEE SEP Performance Verifier (SEP PV) Certification Board and the AEE 50001 Certified Practitioner in Energy Management

Systems (50001 CP EnMS) Certification Board.

COMMITTEES SERVED AND OTHER ACTIVITIES

- Chair, member, departmental promotion and tenure committee.
- Member, college promotion and tenure committee.
- Chair, member, department undergraduate curriculum committee.
- Member, college undergraduate curriculum committee.
- Member, college strategic planning committee on undergraduate curriculum.
- Member, college task force on research planning and management.
- Member, college task force on College Relations and Communications.
- Member, college computer committee.
- Member, college library committee.
- Member, department computer committee.
- Member, department IIE student advisory committee.
- Member, department faculty search committee.
- Department representative for United way campaign.
- Member of search committee to select Chairman of IMSE.
- Member, CEMR Undergraduate Academic Affairs Committee.
- Member, CEMR Ad Hoc ABET program committee.
- ABET program coordinator for IMSE department.
- Undergraduate program coordinator for IMSE department.

HONORS AND AWARDS

- Distinguished Mountaineer Award, 2022.
- Outstanding Graduate Teacher Award, College of Engineering, West Virginia University.
- Member, Tau Beta Pi.
- Member, Omega Rho - Operations Research Honor Society.
- Member, Alpha Pi Mu - Industrial Engineering Honor Society.
- Tag Award for outstanding undergraduate student.
- Jawaharlal Nehru Award for outstanding undergraduate student.