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#### Education:

Ph.D. Theoretical and Applied Mechanics University of Illinois, Urbana, Illinois 1985  
M.S. Applied Mechanics University Bridgeport, Bridgeport, Connecticut 1977  
B.S. Mechanical Engineering University of New Haven, West Haven, Connecticut 1974

#### Professional Registration, Memberships

Licensed Professional Engineer (P.E.), State of Wisconsin 1992-date  
Member, American Society of Mechanical Engineers (ASME) 1974-date  
Member Society for Protective Coatings (SSPC) 2004-date  
Member National Society of Corrosion Engineers (NACE) International, 2006

#### Patents:

xMethod and Device for Depositing a Layer of Material on a Surface  
U. S. Patent Application 09/131,848  
Notice of Allowance: Nov. 1, 1999  
xDevice for Depositing a Layer of Material on a Surface  
United States Patent no. 5,827,368  
Date of Patent: Oct. 27, 1998.

#### Professional Experience:

2003-date Professor of Mechanical Engineering and Director, Deburring and Surface Finishing Research Laboratory (DSFRL), Marquette University, Milwaukee, WI.  
2005-2006 Visiting Scientist, (sabbatical), Medication Corporation, Denver, CO.  
1990-2003 Associate Professor of Mechanical Engineering, and Director, Deburring and Surface Finishing Research Laboratory, Department of Mechanical and Industrial Engineering, Marquette University, Milwaukee, WI.  
1998-1999 Visiting scientist, (Sabbatical), 3M Abrasive Systems Division, St. Paul, MN.  
1998 Visiting Scientist (Summer), United Technologies Research Center, E. Hartford, CT.  
1991-1992 Visiting Scientist, (Sabbatical), Pfaundler Brush Manufacturing Co., Menomonee Falls, WI.  
1982-1990 Assistant Professor of Mechanical Engineering, Department of Mechanical and Industrial Engineering, Marquette University, Milwaukee, WI.  
1977-1982 Teaching/Research Assistant, Department of Theoretical and Applied Mechanics, University of Illinois, Urbana, IL.  
1980 Research Engineer (Internship), Owens Corning Fiberglass Technical Center, Granville, OH.  
1975-1976 Application Development Engineering, Branson Sonic Power Co., Danbury, CT.

## Course Instruction:

### Graduate:

xIntroduction to Finite Element Method  
xAdvanced Machine Design/Stress Analysis  
xAnalysis and Design of Polymers/Composite Materials  
xAdvanced Dynamics/Vibrations

### Undergraduate:

Statics/Dynamics  
Machine Design/Mechanics of Materials  
Senior Design  
Dynamics of Mechanical Systems  
Numerical Methods in Engineering

## Publications:

Refereed Journal

- 1 Stango, R.J., and Khullar, P., Introduction to the Bristle Blasting Process for Simultaneous Corrosion Removal/Anchor Profile, *NACE Journal of Corrosion and Materials*

- 19 Stango, R.J., Cariapa, V., Prasad, A., and Liang, S.K., Measurement and Analysis of Brushing Tool Performance Characteristics Part I: Stiffness Response, *ASME Journal of Engineering for Industry*, vol. 113, no. 3, pp. 282-289, (1991).
- 20 Heinrich, S. M., Stango, R. J., and Shia, C., Effect of Workpart Curvature on the Stiffness Properties of Circular Filamentary Brushes, *ASME Journal of Engineering for Industry*, vol. 113, no. 3, pp. 276-282, (1991).
- 21 Stango, R.J., Heinrich, S.M., and Shia, C.Y., Analysis of Constrained Filament Deformation and Stiffness Properties of Brushes, *ASME Journal of Engineering for Industry*, vol. 111, no. 3, pp. 238-243, (1989).

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- Contact Problem and Surface Interactions in Manufacturing and Tribological Systems, M.H. and Komanduri, R., Eds., New Orleans, LA, PED vol. 67, TRB-Vol. 4, pp. 181-190, (1993).
- 14 Shia, C.Y., Stango, R.J., and Heinrich, S.M., "Analysis of Contact Mechanics for Circular Filamentary Brush/Workpart System Part I: Modeling and Formulation," ASME Symposium on Contact Problem and Surface Interactions in Manufacturing and Tribological Systems, M.H. and Komanduri, R., Eds., New Orleans, LA, PED vol. 67, TRB-Vol. 4, pp. 171-180, (1993).
  - 15 Stango, R.J., Shia, C.Y., and Henderson, J.A., "Development of Rational Basis for Design of Advanced Brushing Tools," 4<sup>th</sup> International Conference on Design Theory and Methodology, ASME Design Engineering Division, Scottsdale, AZ, (1992).
  - 16 Stango, R.J., "Rational Approach for Design and Development of Advanced Brushing Tools," 18 Annual NSF Conference on Design and Manufacturing Systems Research, Atlanta, GA, pp. 1105-1108, (1992).
  - 17 Stango, R.J., "Damage Assessment of Wire and Nylon/Abrasive Filamentary Brushes," Proceedings of the SME, Deburring and Surface Conditioning Conference, Paper No. MR91-133, Orlando, FL, (1991).
  - 18 Cariapa, V., Stango, R.J., and Chen, L., "Application of Neural Network to Compliant Tool Deburring Operation," Proceedings of the SME, Deburring and Surface Conditioning Conference, Paper No. MR91-135, Orlando, FL, (1991).
  - 19 Stango, R.J., Matar, J.E., Cariapa, V., and Ryan, W.E., "Effect of Fabrication Parameters on Void Content of Filament Wound Composites," ASME, Symposium on Processing and Manufacturing of Composite Materials, Atlanta, GA, pp. 277-290, (1991).
  - 20 Chen, L., Stango, R.J., and Cariapa, V., "Automated Prototype Deburring with Compliant Brushing Tool," ASME, Symposium on Intelligent Design and Manufacturing for Prototyping, Atlanta, GA, pp. 147-162, (1991).
  - 21 Stango, R.J., Fournelle, R.A., and Chada, S., "Morphology of Surfaces Generated by Wire Brushes," Proceedings of the ASME, Symposium on Microstructural Evolution in Metal Processing, Geskin, E.S. and Samarasekera, I.V., Eds., Dallas, TX, PED vol. 46, pp. 69-75, (1990).
  - 22 Cariapa, V., Stango, R.J., Chen, L., and Hermann, R., "Asperity Process Model for Automatic Control of Edge Deburring with Filamentary Brush," Proceedings of the ASME, Symposium on Monitoring and Control of Manufacturing Processes, Liang, S.V. and Tsao, R.C., Eds., Dallas, TX, PED vol. 44, pp. 133-147, (1990).
  - 23 Cariapa, V., Stango, R.J., Chen, L., and Hermann, R., "Development of Process Model for Robotic Adaptive Control of Compliant Tool Deburring Operations," Proceedings of the 7<sup>th</sup> International Conference on Systems Engineering, University of Nevada, Las Vegas, NV, pp. 578-586, (1990).
  - 24 Shia, C.Y., Stango, R.J., and Heinrich, S.M., "Theoretical Analysis of Frictional Effect on Circular Brush Stiffness Properties," Proceedings of the SME, Deburring and Surface Conditioning Conference, Paper No. MR89-143, San Diego, CA, (1989).
  - 25 Stango, R.J., Cariapa, V., and Manion, J.M., "Experimental Evaluation of Circular Brush Stiffness: Preliminary Results," Proceedings of the SME, Deburring and Surface Conditioning Conference, Paper No. MR89-144, San Diego, CA, (1989).
  - 26 Heinrich, S.M., Stango, R.J., and Shia, C.Y., "Effect of Workpart Curvature on the Stiffness Properties of Circular Filamentary Brushes," Proceedings of the ASME, Symposium on the Mechanics of Deburring and Surface Finishing Processes, Stango, R.J. and FitzPatrick, P.R., Eds., San Francisco, CA, PED vol. 38, pp. 270, (1989).
  - 27 Cariapa, V., Stango, R.J., Liang, S.K., and Prasad, A., "Measurement and Analysis of Brushing Tool Performance Characteristics Part II: Contact Zone Geometry," Proceedings of the ASME, Symposium on the Mechanics of Deburring and Surface Finishing Processes, Stango, R.J. and FitzPatrick, P.R., Eds., San Francisco, CA, PED vol. 38, pp. 172-179, (1989).
  - 28 Stango, R.J., Cariapa, V., Prasad, A., and Liang, S.K., "Measurement and Analysis of Brushing Tool Performance Characteristics Part I: Stiffness Response," Proceedings of the ASME, Symposium on the Mechanics of Deburring and Surface Finishing Processes, Stango, R.J. and FitzPatrick, P.R., Eds., San Francisco, CA, PED vol. 38, pp. 145-157, (1989).
  - 29 Stango, R.J., Heinrich, S.M., and Shia, C.Y., "Analysis of Constrained Filament Deformation and Stiffness Properties of Brushes," Proceedings of the ASME Symposium on Computer Aided Design and Manufacturing of Dies and Molds, Srinivasa, K. and DeVries, W., Eds., Chicago, IL, PED vol. 32, pp. 92-103, (1988).
  - 30 Stango, R.J., Nelson, C.R., and Wang, S.S., "Analytical Representation and Anisotropic Behavior of Viscoelastic Data for Advanced Composite Lamina," Proceedings of the ASME/ESD, Advanced Composites Conference, Paper No. 87-004, Detroit, MI, pp. 93-102, (1987).

- 31 Stango, R.J., and Wang, S.S., "Viscoelastic Analysis of Post Processing Stresses in Advanced Composite Laminates," Invited paper, Symposium on Applied Mechanics Problems in Composite Manufacturing and Processing: Polymer Matrix Composites, ASME Winter Annual Meeting, Boston, MA, (1987).
- 32 Stango, R.J. and Wang, S.S., "Produced Residual Thermal Stresses in Advanced Fiber Reinforced Composite Laminates," Proceedings of the ASME, Symposium on Polymer Processing: Analysis and Innovation, Suh, N.P. and Tucker, C.L., Eds., Washington, D.C., PED vol. 5, pp. 1,67 (1982).
- 33 Wang, S.S. and Stango, R.J., "Optimally Discretized Finite Elements for Boundary Stresses in Composite Laminates," Proceedings of the 22<sup>nd</sup> AIAA/ASME/ASCE/AHE, Structures, Structural Dynamics, and Materials Conference, Paper No. 82-748, New Orleans, LA, pp. 3237, (1982).
- 34 Durocher, L.L. and Stango, R.J., "Grid Selection and Refinement Procedure for Finite Element Analysis," ASME Design Engineering Division Paper No. DE 21, 1978. (Design Engineering Conference, Chicago, IL, 1978, and Western Design Engineering Conference, Anaheim, CA, 1978).

#### Funded Research (Principal Investigator):

- 1 "Performance of Bristle Blasting Process for Corrosion Removal of Steel Surfaces", Monti Werkzeuge GmbH, Bonn, Germany, 2010; \$43,100.
- 2 "Investigation of Bristle Blasting Process for Refurbishment of Corroded Infrastructure", Monti Werkzeuge GmbH, Bonn, Germany, 2009, \$42,134.
- 3 "Development of Bristle Blasting Technology", Monti Werkzeuge GmbH, Bonn, Germany, 2008; \$37,150.
- 4 "Investigation of Bristle Blasting Tool for Surface Cleaning and Preparation", Monti Werkzeuge GmbH, Bonn, Germany, 2007; \$43,023.
- 5 "Development of Bristle Peening Process", Monti Werkzeuge GmbH, Bonn, Germany, 2006; \$36,000.
- 6 "Measurement and Analysis of Mechanical Properties for Design of Compliant Brushing Tools", 3M Corporation, St. Paul, MN, 2001; \$26,000.
- 7 "Development of Wire Brush Test Station", Pferd Milwaukee Brush Co., Menomonee Falls, WI, 2000; \$7,150.
- 8 "Residual Stress in Post Machining Operations," United Technologies Research Corporation, East Hartford, CT, 1998; \$17,200.
- 9 "Development of Brushing Tool Process for Preparation of Sheet Metal Product," A.O. Smith Corp., Milwaukee, WI, 1997; \$18,500.
- 10 "Brush Seal Analysis and Design", EG&G Corporate Research Award, EG&G Corp., Cranston, RI, 1996-