

6. Publications

6.1 Refereed archival journal publications

1. Li, W., Zhang, C., and Wang, H.-P., 1995, "Automated Tolerance Analysis and Synthesis Using a STEP Application Protocol Method," *Journal of Systems Engineering*, 5 (1), pp. 16-26.
2. Li, W., Zhang, C., Wang, H.-P., and Awoniyi, S.A., 1996, "Optimum Disassembly Planning for Environmentally Conscious Manufacturing," *Journal of Environmentally Conscious Manufacturing*, Vol. 5, No. 1, pp. 49-61.
3. Li, W., Hu, S.J., and Ni, J., 1999, "On-line Expulsion Detection and Estimation for Resistance Spot Welding," *Transaction of North American Manufacturing Research Institution of SME*, Vol. 27, pp. 123-128.
4. Li, W., Hu, S.J., and Ni, J., 2000, "On-line Quality Estimation for Resistance Spot Welding," *ASME Transaction Journal of Manufacturing Science and Engineering*, Vol. 122, No. 3, pp. 511-512.
5. Li, W., Cheng, S.-W., Hu, S.J., and Shriver, J., 2001, "Statistical Investigation on Resistance Spot Welding Quality using a Two-stage, Sliding-level Experiment," *ASME Transaction Journal of Manufacturing Science and Engineering*, Vol. 123, pp. 513-520.
6. Li, W., Cheng, S.-W., Hu, S.J., 2002, "Robust Design and Analysis for Manufacturing Processes with Parameter Interdependency," *Journal of Manufacturing System*, Vol. 21, No. 2, pp. 93-100. (Also appeared in *Transaction of North American Manufacturing Research Institution of SME*, Vol. 29, pp. 647-653).
7. Cho, Y., Li, W., and Hu, S.J., 2002, "Parameter Design and Analysis of Aluminum Resistance Spot Welding," *Journal of the Korean Welding Society*, in English, Vol. 20, No. 2, pp. 102-108.
8. Cho, Y., Hu, S.J., and Li, W., 2003, "Resistance spot welding of aluminum and steel: a comparative experimental study," *Journal of Engineering Manufacture*, Vol. 217, pp. 1355-1363.
9. Li, W., Li, D., and Ni, J., 2003, "Diagnosis of Tapping using Spindle Motor Current," *International Journal of Machine Tools and Manufacture*, Vol. 43, No.1, pp. 73-79.
10. Li, W., Nadella, K., and Kumar, V., 2003, "Manufacturing of Micro-scale Open-cell Polymeric Foams using the Solid-State Foaming Process," *Transaction of North American Manufacturing Research Institution of SME*, Vol. 31, pp. 371-378.
11. Xu, J. and Li, W., 2005, "Welding Induced Distortion Control using Dynamic Thermal Tensioning," *Transaction of North American Manufacturing Research Institution of SME*, Vol. 33, pp. 273-280. (**Finalist, NAMRI/SME Outstanding Paper Award**)
12. Kim, D., Spitsen, R., Khosla, T., Li, W., Ryu, S., and Lim, B., 2005, "A Study on Cold Working of Aluminum Spot Welds to Improve Fatigue Strength," *Transaction of North American Manufacturing Research Institution of SME*, Vol. 33, pp. 251-258.
13. Nadella, K., Kumar, V., and Li, W., 2005, "Constrained Solid-State Foaming of Microcellular Panels," *Journal of Cellular Polymers*, Vol. 24, No. 2, pp. 71-90.

14. Li, W., Cerjanec, D., and Grzadzinski, G.A., 2005, "A Comparative Study of Single AC and Multiphase DC Resistance Spot Welding," *ASME Transaction Journal of Manufacturing Science and Engineering*, Vol. 127, No. 3, pp. 583-589.
15. Li, W., 2005, "Modeling and On-line Estimation of Electrode Wear in Resistance Spot Welding," *ASME Transaction Journal of Manufacturing Science and Engineering*, Vol. 127, No. 4, pp. 709-717.
16. Sarno, E., Kumar, V., and Li, W., 2005, "A Hybrid Methodology for Enhancing Reliability in Conceptual Design of Complex Systems and Its Application in the Design of A Multiphase Flow Station," *Journal of Research in Engineering Design*, Vol. 16, No. 1-2, pp. 27-41.
17. Wang, X., Li, W., and Kumar, V., 2006, "A method for solvent-free fabrication of porous polymer using solid-state foaming and ultrasound for tissue engineering applications," *Journal of Biomaterials*, Vol. 27, pp. 1924-1929.
18. Cho, Y., Li, W., and Hu, S.J., 2006, "Design of Experiment Analysis and Lobe Curve Estimation for Aluminum Resistance Spot Welding," *Welding Journal*, Vol. 85, No. 3, pp. 45s-51s.
19. Xu, J. and Li, W., 2006, "Reducing Welding-induced Buckling Distortion using Thermal Tensioning," *Transaction of North American Manufacturing Research Institution of SME*, Vol. 34, pp. 595-601.
20. Kim, D., Xu, J., Li, W., and Blake, D., 2006, "Force characteristics of self-piercing riveting," *Journal of Engineering Manufacture*, Vol. 220(B8), pp. 1259-1266.
21. Chor, M. and Li, W., 2007, "Permeability Measurement of Tissue Engineering Scaffold," *Journal of Measurement Science and Technology*, Vol. 18, pp. 208-216.
22. Li, W., 2007, "Manufacturing Process Diagnosis using Functional Regression," *Journal of Materials Processing Technology*, Vol. 186, No. 1-3, pp. 323-330.
23. Wang, X., Kumar, V., and Li, W., 2007, "Low Density Sub-Critical CO₂-Blown Solid-state PLA Foams," *Journal of Cellular Polymers*, Vol. 26, No. 1, pp. 1-5.
24. Xu, J. and Li, W., "The Nonlinear Time-varying Response of Dynamic Thermal Tensioning for Welding-Induced Distortion Control," *ASME Transaction Journal of Manufacturing Science and Engineering*, **in-press, author proof returned** in March 2007.
25. Xu, J. and Li, W., "A Finite Element Model for Welding Induced Distortion Control," *Journal of Engineering Manufacture*, **in-press, author proof returned** in March 2007.
26. Wang, H. and Li, W., "A Novel Passive Polymeric Micromixer Fabricated using Selective Ultrasonic Foaming," **submitted** to *Journal of Micromechanics and Microengineering*, March 2007.

6.2 Conference proceedings and other non-journal articles

Non-journal fully refereed publications

1. Li, W. and Batanov, D., 1994, "Feature-Based Object-Oriented CAD/CAM Environment," *Proceedings of The Third International Conference on Automation*

Technology, Vol. 1, Manufacturing Technology and Computer Integrated Manufacturing, Taipei.

2. Li, W., Zhang, C., Wang, H.-P., and Awoniyi, S.A., 1995, "Design for disassembly analysis for environmentally conscious design and manufacturing," *Proceedings of the 1995 ASME International Mechanical Engineering Congress and Exposition*, Part 2 (of 2), San Francisco, CA, USA.
3. Li, W., Hu, S. J., and Ni, J., 1999, "Diagnosis of Multiple Simultaneous Faults in Manufacturing Systems," *The 1999 ASME International Mechanical Engineering Congress and Exposition*, MED-Vol. 10, pp. 581-588.
4. Xie, L., Hu, S.J., Li, W., and Sudjianto, A., 2000, "Fixture Configuration Design using A Computer Experiment," *The 2000 ASME International Mechanical Engineering Congress and Exposition*, MED.
5. Li, W., Zhang, H., and Hu, S.J., 2000, "Signal Processing Issues in Resistance Spot Welding," *Sheet Metal Welding Conference IX*, Paper 3-2, Sterling Heights, MI.
6. Rogers, P., Li, W., and Hu, S.J., 2001, "Intelligent Resistance Weld Monitor," *2001 AWS/PMA Annual Exposition and Conference*, May 6-10, Cleveland, OH.
7. Cho, Y., Li, W., and Hu, S. J., 2002, "Design of Experiment Analysis and Lobe Curve Estimation for Aluminum Resistance Spot Welding," *The 10th International Sheet Metal Welding Conference*, Detroit, MI, paper 3-5.
8. Li, W., 2002, "Diagnosis of Cycle-Based Manufacturing Operations using A Functional Regression Approach," *The 2002 Japan-USA Symposium on Flexible Automation, Hiroshima*, Japan, July 14-19, 2002, pp. 671-678.
9. Li, W., 2002, "Contact Area Modeling and On-line Estimation in Resistance Spot Welding," *The 2002 ASME International Mechanical Engineering Congress and Exposition*, New Orleans, LA, November 17-22, 2002, MED v 13, pp. 467-473.
10. Nadella, K., Kumar, V., and Li, W., 2002, "Novel Microcellular Plastics for Lightweight and Energy Efficient Building Applications," *Proc. of the 2nd Int. Conf. on Adv. in Building Technology*, Vol. I Anson, Ko, and Lam (Eds), Elsevier Science Ltd, pp.121-128.
11. Kumar, V., Nadella, K., and Li, W., 2003, "Production of Thick Microcellular Thermoplastic Sheets," *SPE 2003 Annual Technical Conference*, Nashville, Tennessee, May 4-8.
12. Kumar, V., Nadella, K. and Li, W., 2003, "Thick Microcellular Sheets for Load-Bearing Applications," *Proceedings of the Polymer and Supercritical Fluid Processing Conference*, Tokyo, Japan, Dec 4-6.
13. Li, W., Feng, E., Cerjanec, D., and Grazdzinski, G., 2004, "Energy Consumption in AC and MFDC Resistance Spot Welding," *The 11th International Sheet Metal Welding Conference*, Detroit, MI, May 11-14, 2004.
14. Nadella, K., Farad Mehta, Vipin Kumar and W. Li, 2004, "Prediction of Density Variation in Thick Microcellular Sheets," *SPE 2004 Annual Technical Conference*, Chicago, May 16-20.
15. Nadella, K., Kumar, V., and Li, W., 2004, "Production of Thick Microcellular Sheets for Construction Applications," *FOAMS 2004 Conference*, Philadelphia, Oct. 5-6.

16. Wang, X., Li, W., and Kumar, V., 2004, "Solvent Free Fabrication of Porous Biodegradable Polymers using Ultrasound," *The 2004 ASME International Mechanical Engineering Congress and Exposition*, Anaheim, CA, November 13-19.
17. Xu, J. and Li, W., 2004, "A Finite Element Study on Welding Induced Distortion for Large Structures," *The 2004 ASME International Mechanical Engineering Congress and Exposition*, Anaheim, CA, November 13-19.
18. Li, W. and Cerjanec, D., 2004 "A Comparative Study on AC and MFDC Resistance Spot Welding," *The 2004 ASME International Mechanical Engineering Congress and Exposition*, Anaheim, CA, November 13-19.
19. Wang, H. and Li, W., 2005, "Fabrication of Hierarchically-structured Porous Polymer using High Intensity Focused Ultrasound," *The 2005 ASME International Mechanical Engineering Congress and Exposition*, Orlando, FL, November 5-11.
20. Li, W., Cerjanec, D., and Grzadzinski, G., 2005, "Experimental Characterization of Constant Heat Control of Resistance Spot Welding," *The 2005 ASME International Mechanical Engineering Congress and Exposition*, Orlando, FL, November 5-11.
21. Wang, H., Li, W., Joseph, J., Callihan, J., 2006, "Motility and Viability of SMCS on High Intensity Focused Ultrasound (HIFU) Fabricated Hierarchically-Structured Porous Polymers: Applications for Tissue Engineering," *Regenerate World Congress on Tissue Engineering and Regenerative Medicine*, April 25-27, 2006, Pittsburgh, Pennsylvania.
22. Wang, H. and Li, W., 2006, "Selective Foaming of Porous Polymer for Biomedical Applications," *2006 International Conference on Manufacturing Science and Engineering*, Ypsilanti, Michigan, October 2006.
23. Wang, X., Kumar, V., and Li, W., 2006, "Solid-state Foaming of Low-density PLA," *Foams 2006*, Orlando, FL, October 2006.
24. Wang, X., Li, W., and Kumar, V., 2006, "Feasibility of Enhancing the Interconnectivity of PLA Foam using Ultrasound Cavitation," *The 2006 ASME International Mechanical Engineering Congress and Exposition*, Chicago, IL, November 2006.
25. Xiaoxi Wang, Vipin Kumar and Wei Li, 2007, "A Study of PLA Crystallization during Solid-State Foaming," *2007 ASME/IMECE*, Seattle, WA, November 10-16, 2007.
26. Wang, H. and Li, W., 2007, "Solid-state Foaming of Biodegradable PCL," *2007 ASME/IMECE*, Seattle, WA, November 10-16, 2007.

Other Non-journal publications

1. Kumar, V. and Li, W., 2003, "Production of Polymeric Nanofoams Using Retrograde Vitrification," *The 1st Int. Sym. on NanoManufacturing*, Cambridge, MA, April 24-26.
2. Wang, X., Li, W., and Kumar, V., 2003, "Fabrication of Open-cell Porous Polymers for Tissue Engineering Scaffolds," *The 6th Annual International Conference and Exposition of Tissue Engineering Society International*, Orlando, FL, December 10-13.
3. Wang, X., Li, W., and Kumar, V., 2004, "Fabrication of Open-cell Porous Polymers using Ultrasound," *2004 NSF Design, Service and Manufacturing Grantees and Research Conference*, Dallas, TX, January 5-8.

4. Wang, X., Chor, M., Li, W., and Kumar, V., 2004, "Enhancing the Interconnectivity of Solid-state Foams using Ultrasound," *The UWEB 8th Summer Symposium*, August 25-27, Seattle, WA.
5. Wang, X., Chor, M., Li, W., and Kumar, V., 2005, "Solvent-free Fabrication of Porous Polymer using Ultrasound for Tissue Engineering Scaffolds," *2005 NSF Design, Service and Manufacturing Grantees and Research Conference*, Scottsdale, AZ, January 3-6.
6. Wang, H. and Li, W., 2006, "A Selective Ultrasonic Foaming Process for Porous Polymer for Biomedical Applications," *2006 NSF Design, Service and Manufacturing Grantees and Research Conference*, St. Louis, MO, July 2006.

6.3 Books and editing

Contributing Editor of Symposium on Advances in Information Discovery in Manufacturing, ASME International Mechanical Engineering Congress and Exposition 2000, MED.

6.4 Project reports

1. Li, W., 2000, "The Development of The Intelligent Resistance Spot Welding Monitoring System," project report to NIST/ATP and Auto Body Consortium.
2. Lee, Juntae and Li, W., 2002, "Modeling and Experimentation of a Cordless Soldering Tool Based on The Cold HeatTM Technology," project report to Washington Technology Center and Hyperion Innovation, Inc.
3. Xu, Jun and Li, W., 2003, "Resistive Heat Assisted Self-piercing Riveting," project report to UW Royalty Research Foundation.
4. Xu, Jun and Li, W., 2003, "Controlling Welding Induced Distortion using Preheating Method," project report to Genie Industries.
5. Li, W., 2004, "On-line Quality Monitoring of MFDC/CHC Resistance Spot Welding," project report to DaimlerChrysler.
6. Kumar, V. and Li, W., 2004, "Creating Nano Foams using Retrograde Vitrification," project report to National Science Foundation.
7. Kumar, V. and Li, W., 2004, "Thick Microcellular Sheets," project report to National Science Foundation.
8. Li, W. and Kumar, V., 2005, "Feasibility of Fabricating Open Cell Polymeric Foams using Ultrasound," project report to National Science Foundation.
9. Li, W., 2005, "Fabrication of Hierarchically Structured Open Cell Porous Polymeric Materials," annual report to National Science Foundation.
10. Li, W., 2006, "Controlling Welding Induced Distortion using Dynamic Thermal Tensioning," project report to Genie Industries, Inc.
11. Li, W., 2006, "Selective Ultrasonic Foaming of Porous Polymeric Materials," annual report to National Science Foundation.
12. Li, W., 2007, "Selective Ultrasonic Foaming of Porous Polymeric Materials," annual report to National Science Foundation.

6.5 Miscellaneous

Invention Disclosures

1. Li, W. and Hu, S.J., 1999, "A System for Intelligent Monitoring and Diagnosis of Resistance Spot Welding," Technology Management Office, The University of Michigan, UM #1809.
2. Li, W., 2002, "A Mechanism for Power Regulation for Cordless Resistance Soldering Tools," University of Washington, IPTT Ref # 2940-3794.
3. Kumar, V., Nadella, K., and Li, W., 2004, "Methods for Production of Thick Microcellular Sheets and Composite Structures," UW Tech Transfer Ref #7114D.
4. Xu, J. and Li, W., 2005, "Methods and Apparatus for Force Reduction in the Self-Piercing Riveting Process with Resistance Heating and Multi-Step Punching," UW Tech Transfer Ref #7293D.
5. Xiaoxi Wang, Wei Li and Vipin Kumar. Fabrication of Solid-state PLA Foams with Varying Stiffness, Dec., 2005. UW TechTransfer Reference No. 7388D.
6. Wei Li, Xiaoxi Wang and Vipin Kumar. Enhancing Interconnectivity of Flexible Solid-state PLA Foams using Ultrasound, Dec., 2005. UW TechTransfer Reference No. 7389D.
7. Xiaoxi Wang, Wei Li and Vipin Kumar. Fabrication of Low Density PLA Foams with Different Pore Sizes using CO₂, Dec., 2005. UW TechTransfer Reference No. 7390D.
8. Xiaoxi Wang, Wei Li, Vipin Kumar and Krishna Nadella. Elongated Interconnected Structures in Solid-state Microcellular PLA Foams, Dec., 2005. UW TechTransfer Reference No. 7412D.
9. Xiaoxi Wang, Wei Li, Vipin Kumar and Krishna Nadella. Fabrication of Elongated Interconnected Structures in Solid-State Microcellular PLA Foams using Nitrogen and Carbon Dioxide, Dec., 2005. UW TechTransfer Reference No. 7413D.
10. Li, W. and Wang, H., 2006, "A Method of Selective Foaming for Porous Polymeric Material," UW TechTransfer Reference No. 7584D, U.S. Provisional Patent filed.
11. Wang, H. and Li, W., 2006, "A Novel Micromixer Using Integrated 3D Porous Structure," UW TechTransfer Reference No. 7585D.
12. Wang, H., Li, W., Lin, B., and Tu, L., 2006, "A Device for Studying Cancer Invasion and Migration," UW TechTransfer Reference No. 7586D, U.S. Provisional Patent filed.
13. Li, W., and Wang, H., 2006, "A 3D Micro-scale Engineered Tissue Model System for Drug Discovery and Development," UW TechTransfer Reference No. 7600D.