

**DR. DUSAN P. SEKULIC**  
<http://www.mfg.uky.edu/dir/sekulic>

**a. Professional Preparation**

University of Novi Sad, Yugoslavia	Mechanical Engineering	B.Eng. 1972
University of Novi Sad, Yugoslavia	Physics	B.Sci. 1976
University of Belgrade, Yugoslavia	Mechanical Engineering	M.S. 1978
University of Belgrade, Yugoslavia	Mechanical Engineering	D.Sc. 1981

**b. Appointments**

2006 - Present Professor, Department of Mechanical Engineering, University of Kentucky  
2007 – Present Professor (consulting), Harbin Institute of Technology, Harbin, China  
2000 – 2006 Adjunct Professor, College of Engineering, UK, Lexington, Kentucky,  
1997 - 2006 Senior Scientist, CRMS, College of Engineering, UK, Lexington, Kentucky  
1996 - 1997 Visiting Professor, Department of Mechanical Engineering, UK, Lexington  
1994 - 1996 Visiting Professor, Marquette University, Milwaukee, Wisconsin  
1993 – 1995 Professor with tenure, University of Novi Sad, Yugoslavia  
1993 – 1994 Visiting Research Professor, University of Tennessee, Knoxville  
1988 – 1993 Associate Professor with tenure, University of Novi Sad, Yugoslavia  
1988 – 1989 Senior Fulbright Scholar, Duke University, Durham  
1989 Visiting Scholar, MIT, Cambridge, Massachusetts  
1977 – 1987 Assistant professor and subsequently Docent, University of Novi Sad, Yugoslavia  
1977 Visiting Researcher (DAAD), Technical University Munich, LATUM, Germany  
1972 – 1977 Research Fellow, College of Engineering, University of Novi Sad, Yugoslavia

**c. Publications**

**(i) Closely related publications**

- (1) T. G. Gutowski, M.S. Branham, J.B. Dahmus, A.J. Jones, A. Thiriez, and D.P. Sekulic (2009), Thermodynamic Analysis of Resources Used in Manufacturing Processes, *Environmental Science & Technology*, **43**, No. 1, pp. 1584-1590.
- (2) Sekulic, D.P. (2009) An Entropy Generation Metric for Non-energy Systems Assessments, *Energy* **34**, pp. 587-592.
- (3) Zhao, H., D.R. Nalagatla, D.P. Sekulic (2009) Wetting Kinetics of Eutectic Lead and Lead-free Solders: Spreading over the Cu Surface, *J. of Electronic Mater.*, **38** (2), pp. 284-291.
- (4) Bakshi, B. R., Gutowski, T.G., Sekulic, D.P. Thermodynamics and the Destruction of resources, The Cambridge University Press, Cambridge, 2010 (in press).
- (5) Sekulic, D.P. (2000) A unified approach to the Analysis of Unidirectional and Bi-directional Parallel Flow Heat Exchangers, The International Journal of Mechanical Engineering Education, **28**, No. 4, pp. 307-320.

**(ii) Other significant publications**

- (1) Shah, R.K., and Sekulic, D.P., (2003) *Fundamentals of Heat Exchanger Design*, John Wiley, New York, ISBN: 0-471-32171-0

- (2) Zhao, H., H.Q. Wang, D.P. Sekulic, and Y.Y. Qian (2009) Spreading Kinetics of Liquid Solders over an Intermetallic Solid Surface. Lead-free Solders, *J. of Electronic Mater.*, **38** (9), pp.1846-1854.
- (3) Sekulic, D.P., Galenko, P.K., Krivilyov, M.D., Walker, L, and Gao, F. (2005) Dendritic Growth in Al-Si Alloys During Brazing. Part 2: Computational Modeling, *International Journal of Heat and Mass Transfer*, Vol. **48**, 2005, pp. 2385-2396
- (4) Sekulic, D.P., Zellmer, B., and Nigro, N. (2001) Influence of Joint Topology on the Formation of Brazed Joints, *Modelling and Simulation in Materials Science and Engineering*, **9**, pp. 357 – 369.
- (5) Amon, C.H., Majumdar, D., Herman, C.V., Mayinger, F., Mikic, B.B. and Sekulic, D.P. (1992) Numerical and Experimental Studies of Self-Sustained Oscillatory Flows In Communicating Channels, *Int. J. of Heat Mass Transfer*, **35** (11), pp.3115-3129.

#### **d. Synergistic Activities**

Dr. Sekulic is a Fellow of ASME. Prof. Sekulic is the Director of Graduate Studies of the Manufacturing Systems Engineering Program at the University of Kentucky. Dr Sekulic is a Professor at the Mechanical Engineering Department of the College of Engineering, University of Kentucky, Lexington, KY and a Consulting Professor at the Harbin Institute of Technology, PR China. Dr. Sekulic’s professional expertise and interest are in highly interdisciplinary modeling of transport phenomena for materials processing. He developed a series of university courses in the fields of thermodynamics and transport phenomena for materials processing in engineering and manufacturing systems (Marquette University, University of Kentucky). Prof. Sekulic is author of the “Fundamentals of Heat Exchanger Design,” published by Wiley, Hoboken, 2003. Dr. Sekulic is an editor of the “Thermodynamics and the Destruction of Resources” to be published by the Cambridge University Press (2010), and “Handbook of Heat Exchanger Design” published by Begell House (2010).

#### **e. Collaborators & Other Affiliations** (only during the last 48 months)

##### **(i) Collaborators**

Timothy Gutowski, MIT  
 Alaxander Shapiro, TB, Columbus  
 Qian Yiyu, Harbin Institute of Technology, China  
 He Peng, Harbin Institute of Technology, China  
 Maoai Chen, Shandong University China  
 Galenko Peter, German Aerospace Center, Germany  
 Salazar Abraham, University of Kentucky  
 Fusahito Yoshida, Hiroshima University, Japan

##### **(ii) Graduate and Postdoctoral Advisors**

Prof. B. Djakovic, University of Belgrade (deceased); Prof. B. Mikic, MIT  
 Prof. B. Grigul, Technical University Munich, Germany (deceased); Prof. A. Bejan, Duke U.

##### **(iii) Thesis Advisor and Postdoctoral Scholars (Only recent PhD)**

Dr. Hui Zhao, Postdoctoral Scholar, former PhD Student University of Kentucky  
 Dr. Gao Feng, former PhD student, Harbin Institute of Technology and UofK  
 Dr. Chunxu Pan, Postdoctoral scholar, Wuhan Institute of Technology and UofK  
 Dr. Philip Hadinata, Postdoctoral Scholar, University of Kentucky,  
 Dr. Wang Hongqin, PhD Student, Harbin Institute of Technology and UofK

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### (i) Professional Preparation

Ohio University, Athens, OH	Integrated Engineering	Ph.D. 2005
Ohio University, Athens, OH	Industrial Engineering	MS 2002
Postgraduate Institute of Management, Sri Lanka	Business Administration	MBA 2000
University of Peradeniya, Sri Lanka	Engineering	B.Sc. 1995

### (ii) Appointments

2005 - present Assistant Professor, Department of Mechanical Engineering and Center for Manufacturing, University of Kentucky, KY

Spring Instructor, Department of Industrial and Manufacturing Systems Engineering, Ohio University, Athens, OH

2002/Winter, University, Athens, OH

Fall 2003

Summers 2001 Graduate Research Assistant, Human Factors and Ergonomics Laboratory, Ohio - 2004 Research Institute for Transportation and the Environment, Ohio University, Athens, OH

2004 - 2005 Graduate Research Assistant, Department of Industrial and Manufacturing Systems Engineering, Ohio University, Athens, OH

1998-1999 Visiting Lecturer, Department of Science, University of Peradeniya, Sri Lanka

1997 - 2000 Lecturer, Department of Production Engineering, University of Peradeniya, Sri Lanka

### (iii) Publications

*Publications most closely related to the proposed project:*

1. **F. Badurdeen**, T.J. Goldsby, D. Iyengar, H. Metta, S. Gupta, and I.S. Jawahir, Extending total life-cycle thinking to sustainable supply chain design, *International Journal of Product Lifecycle Management*, Vol. 4, Issue 1/2/3, 2009, pp. 49-67.
2. J. P. Liyanage, **F. Badurdeen** and Ratnayake, C., Industrial asset maintenance and sustainability performance: Economical, Environmental and Societal Implications, in Handbook on Maintenance Management and Engineering, Ben-Daya, M., Duffuaa, S.O. Raouf, A., Knezevic, J. and Ait-Kadi, D.(eds.), Springer Publishing, 2009, pp. 665-689.
3. **F. Badurdeen**, H. Metta and B. Stump, Simulation models to demonstrate mass customization strategies, in Handbook of Research in Mass Customization and Personalization, Piller, F. and Tseng, M. (eds.), Volume 2, World Scientific Publishing, 2009, pp. 1005-1019.
4. **F. Badurdeen**, P. Marksberry, A. Hall and B. Gregory, Simulations and games for teaching lean manufacturing, *International Journal of Simulation and Gaming*, on-line published April, 2009, DOI:10.1177/1046878109334331.
5. B. Stump and **F. Badurdeen**, Integrating lean and other strategies for mass customization manufacturing: A Case Study, *Journal of Intelligent Manufacturing*, April 2009, DOI: 10.1007/s10845-009-0289-3.

*Other significant publications:*

1. G. A. Suer, **F. Badurdeen**, and N. Dissanayake, Capacitated Lot Sizing by Using Multi-Chromosome Crossover Strategy, *Journal of Intelligent Manufacturing*, Vol. 19, Issue 3. pp. 273-282, 2008.