

# Xiaoping Qian

Professor

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## Professional Preparation

Huazhong University of Science and Technology, China	Mech. Engineering	B.S.	1992
Huazhong University of Science and Technology, China	Mech. Engineering	M.S.	1995
The University of Michigan	Mech. Engineering	Ph.D.	2001

## Appointments

2017 – present	Professor, Department of Mechanical Engineering, The University of Wisconsin, Madison
2014 – 2017	Associate Professor, Department of Mechanical Engineering, The University of Wisconsin, Madison
2010 – 2013	Associate Professor, Mechanical, Materials and Aerospace Engineering, Illinois Institute of Technology, Chicago, IL
2004 – 2010	Assistant Professor, Mechanical, Materials and Aerospace Engineering, Illinois Institute of Technology, Chicago, IL
2001 – 2004	Research Scientist, Product Realization Lab, General Electric Global Research Center, Schenectady, NY

## Other Appointments

2010 – Fall	Sabbatical Visit, Technical University of Denmark
2006 – Summer	Guest Researcher, National Institute of Standards and Technology
2005 – Summer	ASEE/AFOSR Summer Fellow, Air Force Research Laboratory

## Five Relevant Products

1. Francesco Mezzadri, Vladimir Bouriakov, and Xiaoping Qian. "Topology optimization of self-supporting support structures for additive manufacturing." *Additive Manufacturing*, in press, 2018.
2. Cunfu Wang and Xiaoping Qian. "Heaviside projection based aggregation in stress constrained topology optimization." *International Journal for Numerical Methods in Engineering*, in press, 2018.
3. Xiaoping Qian, "Undercut and Overhang Angle Control in Topology Optimization: A Density Gradient based Integral Approach", *International Journal for Numerical Methods in Engineering*, Vol. 111, No. 3, pp. 247 – 272, 2017.
4. Xiaoping Qian, and Eric M. Dede, "Topology optimization of a coupled thermal-fluid system under a tangential thermal gradient constraint," *Structural and Multidisciplinary Optimization*, Vol. 54, No. 3, pp 531 - 551, 2016.

5. Mingming Wang and Xiaoping Qian, "Efficient filtering in topology optimization via B-splines," *ASME Journal of Mechanical Design*, Vol. 137, No. 3, pp. 031402, 2015.

### **Five Additional Products**

1. Xia, S., Li, G. and Qian, X., "Optimal shape for optical absorption in organic thin film solar cells," *Structural and Multidisciplinary Optimization*, 50(3):437-451, 2014.
2. X. Qian and O. Sigmund., "Topological design of electromechanical actuators with robustness toward over-and under-etching," *Computer Methods in Applied Mechanics and Engineering*, 253:237-251, 2012.
3. X. Qian and O. Sigmund. "Isogeometric shape optimization of photonic crystals via Coons patches," *Computer Methods in Applied Mechanics and Engineering*, 200(25):2237 - 2255, 2011.
4. Kang Li and Xiaoping Qian. "Isogeometric analysis and shape optimization via boundary integral," *Computer Aided Design*, Special Issue of 2011 SIAM Conference on Geometric and Physical Modeling, Best Paper Award, 43(11):1427-1437, November 2011.
5. X. Qian, "Full Analytical Sensitivities in NURBS Based Isogeometric Shape Optimization," *Computer Methods in Applied Mechanics and Engineering*, Vol. 199, pp. 2059 - 2071, 2010.

### **Synergistic Activities**

1. ASME Fellow, 2015
2. Associate Editor: *ASME Journal of Mechanical Design*, *Journal Computer-Aided Design*, *ASME Journal of Computing and Information Science in Engineering*, and *ASME Journal of Manufacturing Science in Engineering*
3. Created graduate courses *Digital Design & Fabrication*, *Design Optimization*, and *Computer-Aided Geometric Design*. Taught undergraduate *Machine Design* and *CAD* courses
4. Established the Computational Design and Manufacturing research lab with support from NSF grants, AFOSR grants, ARO grant, ONR grant, and NIST
5. Developed an Innovative Product Development Studio, including a dedicated CAD/CAM Education Lab with computer workstations and CAD software such as Pro/Engineer and Unigraphics