**YONG ZHANG**

Johns Hopkins University Date of Birth: 08/19/1982

Department of Mechanical Engineering Place of Birth: Zibo, Shandong

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**EDUCATION**

Institute of Metal Research, Chinese Academy of Sciences

* Ph.D. Materials Science, 2010
* Dissertation: “Strengthening and toughening of bulk nanostructured Cu and Cu-Al alloys”
* Supervisor: Profs. Ke Lu and Nairong Tao

Nanjing University of Science and Technology

* B.S. Materials Science, 2004

**PROFESSIONAL RESEARCH EXPERIENCE**

*Sep 2013-present* Assistant research scientist,Department of Mechanical Engineering, Johns Hopkins University, Advisor: Prof. Kevin J. Hemker

*Sep 2010-Sep 2013* Postdoctoral fellow, Department of Mechanical Engineering, Johns Hopkins University, Advisor: Prof. Kevin J. Hemker

* Fabrication and mechanical characterization of 3D woven and braided metallic lattice materials with enhanced permeability and heat transfer
* Stress-driven grain growth in ultrafine-grained Mg film deformed at high rate loading by means of Kolsky bar
* Exploring the size effect strengthening in ultrafine-grained Mg film
* Phase transformation and mechanical properties of aluminized and homogenized LIGA Ni microcomponent
* Identify the new precipitation pathway and mechanical testing for nanocrystalline Haynes 718 superalloy foil fabricated by magnetron sputtering
* Quantify stress-driven grain growth during stress relaxation in nanocrystalline Ni
* Developed a high temperature micro-mechanical testing system
* Developing a in-situ TEM technique to observe the deformation mechanism at high strain rate

*Sep 2004 - Jun 2010* Graduate student, Institute of Metal Research, Chinese Academy of Sciences, Supervisor: Profs. Ke Lu and Nairong Tao

* Investigation of effects of strain rate, temperature and stacking-fault energy on microstructure and mechanical properties of nanostructured metals and alloys
* Identify stacking-fault energy dependence of twin thickness in Cu alloys subjected to plastic deformation
* Mechanical properties and rolling behavior of nano-grained Cu with embedded nano-twin bundles
* Tailoring the strength and ductility of nanostructured Cu embedded with nano-twins subjected to thermal annealing
* Exploration of electrical conductivity in bulk nanostructured Cu embedded with nano-twins

**PEER REVIEWED PUBLICATIONS (Citations: 322, Google Scholar)**

1. **Y. Zhang**, J.A. Sharon, G.L. Hu, K.T. Ramesh, K.J. Hemker, “Stress-driven Grain Growth in Ultrafine-grained Mg Thin Film”, Scripta Materialia, 68 (2013) 424-427. (Citations: 7)

2. **Y. Zhang**, N.R. Tao, K. Lu, “Effects of Stacking Fault Energy, Strain Rate and Temperature on Microstructure and Strength of Nanostructured Cu-Al Alloys Subjected to Plastic Deformation”, Acta Materialia, 59 (2011) 6048-6058. (Citations: 27)

3. **Y. Zhang**, N.R. Tao, K. Lu, “Effect of Stacking-fault Energy on Deformation Twin Thickness in Cu-Al Alloys”, Scripta Materialia, 60 (2009) 211-213. (Citations: 51)

4. **Y. Zhang**, N.R. Tao, K. Lu, “Mechanical Properties and Rolling Behaviors of Nano-grained Copper with Embedded Nano-twin Bundles”, Acta Materialia, 56 (2008) 2429-2440. **(Citations: 90, Acta Materialia Top 50 highly cited articles by Chinese Mainland Authors 2006-2010, Acta Materialia Ranking 53rd 2008-2013)**

5. **Y. Zhang**, Y.S. Li, N.R. Tao, K. Lu, “High Strength and High Electrical Conductivity in Bulk Nanograined Cu Embedded with Nanoscale Twins”, Applied Physics Letters, 91 (2007) 211901. (Citations: 15)

6. D.E. Burns, **Y. Zhang**, M. Teutsch, K. Bade, J. Aktaa, K.J. Hemker, “Development of Ni-based Superalloys for Microelectromechanical Systems”, Scripta Materialia, 67 (2012) 459-462. (Citations: 4)

7. Y.S. Li, **Y. Zhang**, N.R. Tao, K. Lu, “Effect of the Zener-Hollomon Parameter on the Microstructures and Mechanical Properties of Cu Subjected to Plastic Deformation”, Acta Materialia, 57 (2009) 761-772. (Citations: 78)

8. Y.S. Li, **Y. Zhang**, N.R. Tao, K. Lu, “Effect of Thermal Annealing on Mechanical Properties of a Nanostructured Copper Prepared by means of Dynamic Plastic Deformation”, Scripta Materialia, 59 (2008) 475-478. (Citations: 44)

9. J.A. Sharon, **Y. Zhang**, F. Mompiou, M. Legros, K.J. Hemker, “Discerning Size Effect Strengthening in Ultra-fine Grain Mg Thin Films”, Scripta Materialia, 75 (2014) 10-13. (Citations: 2)

10. D.E. Burns, **Y. Zhang**, T.P. Weihs, K.J. Hemker, “Properties of Sputter Deposited Ni-base Superalloys for Microelectromechanical Systems”, Thin Solid Films 558 (2014) 20-23.

11. L.Y. Zhao, S. Ha, K. Sharp, A.B. Geltmacher, R.W. Fonda, A. Kinsey, **Y. Zhang**, S. Ryan, D. Erdeniz, D.C. Dunand, K.J. Hemker, J.K. Guest, T.P. Weihs, “Permeability Measurements and Modeling of Topology-optimized Metallic 3D Woven Lattices”, Acta Materialia, 81 (2014) 326-336.

12. 孔建寿，吴玲珑，张勇，“面向Intranet的焊接工艺计算机辅助设计系统开发”，焊接学报，26（2005）36-40。(Citations: 4)

**CONFERENCE PROCEEDINGS**

1. D.E. Burns, **Y. Zhang**, T.P. Weihs, K.J. Hemker, “Sputtered Ni-Base Superalloys for Microscale Devices”, Superalloys 2012, 569-575.

**CONFERENCE ABSTRACT**

1. **Y. Zhang,** J.A. Krogstad, K. J. Hemker, “Stress-driven grain growth during stress-relaxation in nanocrystalline Ni”, 2014, TMS Annual Meeting and Exhibition, San Diego, CA.

2. **Y. Zhang,** Seunghyun Ha, Stephen Ryan, Longyu Zhao, James Guest, Keith Sharp, Richard Fonda, Andy Geltmacher, Timothy Weihs, Kevin Hemker, “Architectural design, fabrication and mechanical characterization of 3D woven material”, 2013, 8th International Conference on Porous Metals and Metallic Foams, Raleigh, NC.

3. **Y. Zhang,** Seunghyun Ha, Stephen Ryan, Alex Kinsey, Longyu Zhao, James Guest, Keith Sharp, Richard Fonda, Andy Geltmacher, Timothy Weihs, Kevin Hemker, “Architectural design, fabrication and mechanical characterization of 3D woven material”, 2013, TMS Annual Meeting and Exhibition, San Antonio, Texas.

4. **Y. Zhang**, J.A. Sharon, G.L. Hu, K.T. Ramesh, K.J. Hemker, “Stress-driven Grain Growth in Ultrafine-grained Mg Thin Film”, 2012, TMS Annual Meeting and Exhibition, Orlando, FL.

5. **Y. Zhang**, N.R. Tao, K. Lu, “Effects of Strain Rate and Stacking-Fault Energy on Microstructures and Mechanical Properties of Deformed Cu and Cu-Al Alloys”, 2011, TMS Annual Meeting and Exhibition, San Diego, CA.

6. **Y. Zhang**, N.R. Tao, K. Lu, “Optimization of Strength and Ductility in Pure Copper Subjected to Plastic Deformation and Subsequent Annealing”, 2011, The 5th International Conference on Nanomaterials by Severe Plastic Deformation, Nanjing, China.

7. **Y. Zhang**, N.R. Tao, K. Lu, “Strength and ductility of nano-grained Cu with nano-scale twin bundles”, 2009, TMS Annual Meeting and Exhibition, San Francisco, CA.

8. **Y. Zhang**, N.R. Tao, K. Lu, “Mechanical Properties and Rolling Behaviors of Nano-grained Copper with Embedded Nano-twin Bundles”, 2009, C-MRS Annual Meeting and Exhibition, Suzhou, China.

9. **Y. Zhang**, N.R. Tao, K. Lu, “Cold Rolling Behaviors of Nanostructured Cu Prepared by mean of Dynamic Plastic Deformation”, 2008, 7th International Workshop on Advanced Intermetallic and Metallic Materials, Harbin, China.

10. Seunghyun Ha, **Y. Zhang**, Longyu Zhao, Keith Sharp, Timothy Weihs, Kevin Hemker, “Optimal Topology for 3D Woven Lattice Materials”, 2013, TMS Annual Meeting and Exhibition, San Antonio, Texas.

11. L. Zhao, S. Ha, K. Sharp, A. Geltmacher, A. Kinsey, **Y. Zhang**, D. Erdeniz, D. Dunand, K. Hemker, J. Guest, T. Weihs, “Enhanced Permeability of 3D Woven Lattice Structures”, 2013, 8th International Conference on Porous Metals and Metallic Foams, Raleigh, NC.

12. Longyu Zhao, Seunghyun Ha, Keith Sharp, Andrew Geltmacher, Alex Kinsey, **Y. Zhang**, Dinc Erdeniz, David Dunand, Kevin Hemker, Jamie Guest, Timothy Weihs, “Enhanced Permeability of 3D Woven Lattice material with Experimental Testing and Modeling”, 2013, TMS Annual Meeting and Exhibition, San Antonio, Texas.

13. N.R. Tao, Y.S. Li, **Y. Zhang**, K. Lu, “Microstructures and mechanical properties of Cu and Cu-Al alloys processed by plastic deformation with different strain rates and deformation temperatures”, 2013, Chinese-Danish Center for Nanometals: The 2nd Summer School & Symposium on Nanometals, Weihai, China.

14. N.R. Tao, **Y. Zhang**,K. Lu, “Effects of Deformation Parameters and Stacking Fault Energy on Grain Refinement in Cu–Al Alloys Subjected to Plastic Deformation”, 2012, TMS Annual Meeting and Exhibition, Orlando, FL.

15. D.E. Burns, **Y. Zhang**, T.P. Weihs, K.J. Hemker, “Fabrication Routes and the Effect of Microstructure on the Mechanical Behavior of Ni-Base Superalloy Thin Films and MEMS Structures”, 2012, TMS Annual Meeting and Exhibition, Orlando, FL.

16. J.A. Sharon, M. Legros, **Y. Zhang**, K.J. Hemker, “Mechanical Behavior and Active Deformation Mechanisms in Thin Film Mg”, 2011, MRS, Fall Meeting & Exhibit, Boston, MA.

17. N.R. Tao, **Y. Zhang**, K. Lu, “Effects of stacking-fault energy, strain rate, and temperature on microstructures and strength in Cu–Al alloys subjected to plastic deformation”, 2011, Chinese-Danish Center for Nanometals: Summer School and Symposium on nanometals for energy, Beidaihe, China.

18. N.R. Tao, **Y. Zhang**, K Lu, “Tensile Properties of Nano-grained Copper Embedded with Nanoscale Twins”, 2010, International Workshop for Mechanical Behaviors of Metallic Materials, Jiuzhaigou, China.

**POSTER**

1. **Y. Zhang**, Seugnhyun Ha, Stephen Ryan, Sen Lin, Longyu Zhao, Keith Sharp, Richard Fonda, Andy Geltmacher, James Guest, Timothy Weihs, Kevin Hemker, “Topology optimization, fabrication and characterization of 3D woven lattice materials”, 2013, Gordon Research Conferences, Physical Metallurgy, Biddeford, ME.

2. D.E. Burns, **Y. Zhang**, T.P. Weihs, K.J. Hemker, 2012, 12th International Symposium on Superalloys, Seven Springs, PA.

**PATENTS**

1. **Y. Zhang**, N.R.Tao, K. Lu, “A technique developed for manufacturing Cu sheet with high strength and high electrical conductivity utilizing severe plastic deformation”, CN Patent No. ZL200710011723.1, May 19, 2010.

**PROFESSIONAL AFFILIATIONS**

2011 – Present Member, The Minerals, Metals and Materials Society (TMS)

2009 – Present Reviewer for Scripta Materialia, Materials and Design, Science of Advanced

Materials, Materials Letters, Journal of Materials Science, Materials Research Letters, Journal of Materials Processing Technology, Materials Science and Engineering A, Intermetallics, Materials Characterization, Journal of Materials Research, Engineering Fracture Mechanics, Metallurgical and Materials Transactions B, Journal of Materials Science & Technology, Acta Mechanica Sinica, Modern Physics Letters B, International Journal of Cast Metals Research, International Journal of Modern Physics B

**HONORS AND AWARDS**

2011 Acta Materialia Top 50 Highly Cited Articles By Chinese Mainland Authors 2006-2010

2010 Changxu Shi Scholarship, Institute of Metal Research, Chinese Academy of Sciences

2010 Pollyanna Chu Scholarship, Chinese Academy of Sciences

2004 Excellent Student Leader, Jiangsu Province

2003 Xun Li (H. Lee) Scholarship, Institute of Metal Research, Chinese Academy of Sciences

2002 Xun Li (H. Lee) Scholarship, Institute of Metal Research, Chinese Academy of Sciences

2001 DongAn Auto Engine Award, Nanjing University of Science and Technology

**TEACHING AND MENTORING**

Fall 2014, Deformation Mechanisms, Teaching Assistant, Johns Hopkins University

Fall 2012, Transmission Electron Microscopy, Teaching Assistant, Johns Hopkins University

Fall 2010, Transmission Electron Microscopy, Teaching Assistant, Johns Hopkins University