

Wu-Rong Jian

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Education

Ph.D. Candidate - Mechanical Engineering

University of California Santa Barbara, Santa Barbara, CA, United States Current
Advisor: Professor Irene J. Beyerlein

Master of Science - Mechanics

South China University of Technology, Guangzhou, China 2018
Advisor: Professor Xiaohu Yao

Bachelor of Science - Engineering Mechanics

South China University of Technology, Guangzhou, China 2014

Honors and Awards

- Regents in Mechanical Engineering Fellowship, University of California, Santa Barbara, United States 2018
- Outstanding Master Thesis (Guangdong), Guangdong, China, 2018
- Outstanding Graduate Student (Guangdong), Guangdong, China, 2016
- National Scholarship for Graduate Students, China, December 2015
- Scholarship for Excellent Freshmen of Postgraduate, South China University of Technology, China, September 2014

Referee/Reviewer

International Journal of Plasticity, Journal of Alloys and Compounds, Journal of Micromechanics and Microengineering, Nanotechnology, Journal of Physics D: Applied Physic, Journal of Physics: Materials, Materials Research Express, Journal of Physics: Condensed Matter, Journal of Materials Research, Micromachines, Materials.

Presentations

- “Mechanical Properties of Cu(111)/ Cu₆₄Zr₃₆ glass nanolaminates,” The 54th Annual Technical Meeting of the Society of Engineering Science (Boston, USA, 2017)
- “Shock-induced melting of open-cell nanoporous Cu foams: Effects of porosity and specific surface area,” The 26th International Conference on High Pressure Science and Technology (Beijing, China, 2017)

Publications (1-23)

1. Xiaowang Wang, Shuozhi Xu, **Wu-Rong Jian**, Xiang-guo Li, Yanqing Su and Irene J. Beyerlein. Generalized stacking fault energies and Peierls stresses in refractory body-centered cubic metals from machine learning-based interatomic potentials. *Computational Materials Science* 192 (2021) 110364.
2. **Wu-Rong Jian**, Shuozhi Xu, and Irene J. Beyerlein. On the significance of model design in atomistic calculations of the Peierls stress in Nb. *Computational Materials Science* 188 (2021) 110150.
3. Shuozhi Xu, Yanqing Su, **Wu-Rong Jian** and Irene J. Beyerlein. Local slip resistances in equal-molar MoNbTi multi-principal element alloy. *Acta Materialia* 202 (2020) 68-79.

4. **Wu-Rong Jian**, Zhuocheng Xie, Shuozhi Xu, Yanqing Su, Xiaohu Yao and Irene J. Beyerlein. Effects of lattice distortion and chemical short-range order on the mechanisms of deformation in medium entropy alloy CoCrNi. *Acta Materialia* 199 (2020) 352-369.
5. Zhuocheng Xie, **Wu-Rong Jian**, Xiaochang Tang, Xiaoqing Zhang, and Xiaohu Yao. Strengthening and toughening mechanisms of metallic glass nanocomposites via graphene nanoplatelets. *Journal of Non-Crystalline Solids* 546 (2020) 120284.
6. Shuozhi Xu, Emily Hwang, **Wu-Rong Jian**, Yanqing Su, and Irene J. Beyerlein. Atomistic calculations of the generalized stacking fault energies in two refractory multi-principal element alloys. *Intermetallics* 124 (2020) 106844.
7. Zhuocheng Xie, **Wu-Rong Jian**, Zhihua Wang, Xiaoqing Zhang, and Xiaohu Yao. Layer thickness effects on the strengthening and toughening mechanisms in metallic glass-graphene nanolaminates. *Computational Materials Science* 177 (2020) 109536.
8. **Wu-Rong Jian**, Min Zhang, Shuozhi Xu, and Irene J. Beyerlein. Atomistic simulations of dynamics of an edge dislocation and its interaction with a void in copper: a comparative study. *Modelling and Simulation in Materials Science and Engineering* 28, 4 (2020) 045004.
9. X. J. Long, Y. Cai, **W. R. Jian**, L. Wang, and S. N. Luo. Acoustic and double elastic shock waves in single-crystal graphene. *Journal of Applied Physics* 127, 5 (2020) 055101.
10. Y. H. Mo, L. Y. Meng, X. C. Tang, X. H. Yao, J. W. Qiao, and **W. R. Jian**. The toughening mechanism and spatial-temporal evolution of shear bands at different strain rates in Vit-1 metallic glass. *Materials Science and Engineering: A* 773 (2020) 138855.
11. **Wu-Rong Jian**, Xiaohu Yao, Yugang Sun, Zhuocheng Xie, and Xiaoqing Zhang. Size-dependent vibration analysis of carbon nanotubes. *Journal of Materials Research* 34, 13 (2019) 2148-2160.
12. J. M. Zhan, **W. R. Jian**, X. C. Tang, Y. L. Han, W. H. Li, X. H. Yao, and L. Y. Meng. Tensile deformation of nanocrystalline Al-matrix composites: Effects of the SiC particle and graphene. *Computational Materials Science* 156 (2019) 187-194.
13. **W. R. Jian**, L. Wang, X. H. Yao, and S. N. Luo. Tensile and nanoindentation deformation of amorphous/crystalline nanolaminates: Effects of layer thickness and interface type. *Computational Materials Science* 154 (2018) 225-233.
14. X. C. Tang, L. Y. Meng, J. M. Zhan, **W. R. Jian**, W. H. Li, X. H. Yao, and Y. L. Han. Strengthening effects of encapsulating graphene in SiC particle-reinforced Al-matrix composites. *Computational Materials Science* 153 (2018) 275-281.
15. **W. R. Jian**, X. J. Long, M. X. Tang, Y. Cai, X. H. Yao, and S. N. Luo. Deformation and spallation of shock-loaded graphene: Effects of orientation and grain boundary. *Carbon* 132 (2018) 520-528.
16. X. C. Tang, **W. R. Jian**, J. Y. Huang, F. Zhao, C. Li, X. H. Xiao, X. H. Yao, and S. N. Luo. Spall damage of a Ta particle-reinforced metallic glass matrix composite under high strain rate loading. *Materials Science and Engineering: A* 711 (2018) 284-292.
17. **W. R. Jian**, L. Wang, X. H. Yao, and S. N. Luo. Balancing strength, hardness and ductility of Cu₆₄Zr₃₆ nanoglasses via embedded nanocrystals. *Nanotechnology* 29, 2 (2017) 025701.
18. **W. R. Jian**, L. Wang, B. Li, X. H. Yao, and S. N. Luo. Improved ductility of Cu₆₄Zr₃₆ metallic glass/Cu nanocomposites via phase and grain boundaries. *Nanotechnology* 27, 17 (2016) 175701.

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19. Bo Li, Liang Wang, **Wu-Rong Jian**, E. Jun-Cheng, Hong-Hao Ma, and Sheng-Nian Luo. Irradiation-initiated plastic deformation in prestrained single-crystal copper. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms* 368 (2016) 60-65.
 20. **W. R. Jian**, B. Li, L. Wang, X. H. Yao, and S. N. Luo. Shock response of open-cell nanoporous Cu foams: Effects of porosity and specific surface area. *Journal of Applied Physics* 118, 16 (2015) 165902.
 21. F. P. Zhao, B. Li, **W. R. Jian**, L. Wang, and S. N. Luo. Shock-induced melting of honeycomb-shaped Cu nanofoams: Effects of porosity. *Journal of Applied Physics* 118, 3 (2015) 035904.
 22. **W. R. Jian**, X. H. Yao, L. Wang, X. C. Tang, and S. N. Luo. Short-and medium-range orders in Cu₄₆Zr₅₄ metallic glasses under shock compression. *Journal of Applied Physics* 118, 1 (2015) 015901.
 23. W. H. Lee, X. H. Yao, **W. R. Jian**, and Q. Han. High-velocity shock compression of SiC via molecular dynamics simulation. *Computational Materials Science* 98 (2015) 297-303.