**简 历**

**个人信息**

**孙保安**

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* **工作经历**

**1. 2016.11-至今 南京理工大学 格莱特纳米科技研究所 青年拔尖人才特聘教授**

**2. 2013.07-2016.10 香港城市大学机械与生物工程系 先进材料研究中心， 合作导师: Prof C T Liu（美国工程院院士，中国工程院外籍院士,台湾科学院院士）和Dr. Yong Yang, 博士后**

**3. 2011.01-2013.07 德国莱布尼兹固体材料研究所(IFW, Dresden)，合作导师： Prof J. Eckert, 博士后学者**

**4. 2009.02-2009.08,** **香港理工大学 机械与工程系， Prof Jian Lu 研究组， 研究助理**

* **教育背景**

**1.2007.09-2011.01 中科院物理所，理学博士学位， 极端条件实验室EX4，导师： 汪卫华 研究员(中国科学院院士)**

**2. 2004.09-2007.07, 山东大学 材料科学与工程学院， 工学硕士学位，导师：边秀房 教授**

**3. 2000.09-2004.07，山东大学 材料学科与工程学院，学士学位**

* **主要研究成果简介**

**主要从事非晶合金以及其复合材料的形成、开发设计以及性能-结构关系的研究等。率先在非晶合金塑性研究领域引入非平衡态动力学的概念和方法，并发现了剪切带动力学和非晶塑性的本质关联；从理论上阐明了非晶合金间歇性锯齿流变行为的物理机制并解释了各种因素对锯齿行为的影响；提出了各种非晶合金断裂时统一的剪切带临界速度准则；揭示了非晶合金塑性变形和弛豫行为的微观结构起源并发现了一种非晶合金在高压下的多形态转变现象。上述研究结果共发表SCI 学术论文55篇，其中包括Progress in Materials Science, Physics Review Letter, Nature Communication, Scientific Report 和Acta Materialia 等国际一流期刊，其中两篇论文在2016年成功入选ESI 高被引论文。论文SCI引用次数800余次, 单篇论文SCI引用100余次，H因子15，申请中国发明专利1项, 参加国内外学术会议7次并做邀请报告3次, 担任Intermetallics, Journal and Alloy and Compounds, Materials and Desigin 等期刊审稿人，曾获中国科学院院长优秀奖等。**

* **获奖情况**

**1. 2011.12, 中科院院长奖学金优秀奖 .**

**2. 2009.11: 中科院物理所所长奖学金**

**3. 2006.12: 潍柴动力优秀研究生奖学金**

**4. 2005.11 山东大学光华奖学金**

**5. 2000.09- 2003.07 连续三年获山东大学学生一等奖学金**

* **代表性论著**

1. **B. A. Sun**, W. H. Wang, Fracture of bulk metallic glasses, ***Progress in Materials Science***, 74, 211-307(2015). 影响因子：27.417，SCI引用35次， 入选ESI高被引论文.
2. **B. A. Sun**, H. B. Yu, W. Jiao, H. Y. Bai, D. Q. Zhao and W. H. Wang, Plasticity of ductile metallic glasses: a self-organized critical state, ***Physics Review Letters*** 105, 035501-04 (2010). 影响因子：7.512，SCI引用104次.
3. **B. A. Sun,** S. Pauly, J. Hu, W. H. Wang, U. Kühn, and J. Eckert, Origin of intermittent plastic flow and instability of shear band sliding in bulk metallic glasses, ***Physics Review Letters*** 110, 225501-5(2013). 影响因子：7.512，SCI引用28次
4. **B. A. Sun**, S. Pauly, J. Tan, M. Stoica, W. H. Wang, U.Kϋhn, J. Eckert, Serrated flow and stick-slip deformation dynamics in the presence of shear band interactions for a Zr-based bulk metallic glass*,* ***Acta Materialia*** 60, 4160-4171 (2012). 影响因子：4.465，SCI引用60次.
5. Z. Wang, **B. A. Sun**, H. Y. Bai, W. H. Wang, Evolution of hidden localized flow during glass-to-liquid transition in metallic glass, ***Nature Communication*** 5, 5823 (2014). 影响因子：11.470，SCI引用43次， ESI高被引论文
6. **B. A. Sun**, Y. Yang, W. H. Wang and C. T. Liu, The critical Criterion on Runaway Shear Banding in Metallic Glasses, ***Scientific Reports*** 6, 21388(2016). 影响因子：5.578.
7. **B. A. Sun**, Z. Y. Liu, Y. Yang, C. T. Liu, Delayed shear banding process and evolution of localized plastic flow in metallic glasses. ***Applied Physics Letters*** 105, 091904 (2014). 影响因子：3.302，SCI引用8次.
8. **B. A. Sun**, W. H. Wang, Fractal nature of multiple shear bands in severely deformed metallic glasses, ***Applied Physics Letters*** 98, 201902-04 (2011). 影响因子：3.302，SCI引用23次
9. **B. A. Sun**, M. X. Pan, D. Q. Zhao, W. H. Wang, X. K. Xi, M. T. Sandor, Y. Wu, Aluminum-rich bulk metallic glasses, ***Scripta Materialia*** 59, 1159-1162 (2008). 影响因子：3.224，SCI引用24次
10. Q. Luo, G. Garbarino, **B.A. Sun**, Y. Zhang, Z.Wang, N. Mattern, J. Eckert, J. Shen, Hierarchical densification and negative thermal expansion under high pressure in Ce-based metallic glass, ***Nature Communication***,6, 5703(2015). 影响因子：11.470， SCI 引用2次

* **国家发明专利**

1.  **孙保安，赵德乾，潘明祥，汪卫华， 一种富铝大块非晶合金及其制备方法，中国，专利公开号：**CN101671798 A

* **主持和参与的科研项目**

1. 国家自然科学基金面上项目：非晶合金锯齿流变过程中剪切带的动态性质演化和稳定性(2017-2020)，项目负责人， Grant No：51671121
2. 国家自然科学基金创新群体项目 亚稳材料的制备、结构表征与物性， Grant No. 50621061
3. 国家自然科学基金重点项目 大块非晶合金形变机理的研究 Grant No. 50731008

* **国际学术会议**

1. 2015年7月参加于贵阳举办的中国材料大会，CC国际分会 “Serration and Noise Behavior in Advanced Materials”, 10-14, Guiyang, July, 2015, 发表题为“Stability of shear banding and serrated flow behavior in metallic glasses”邀请报告并担任分会场主席。
2. 2014年7月参加在香港中文大学举办的高登国际会议(Golden Conference on advanced structure materials)，发表题为“Delayed shear banding process in metallic glasses的Poster。
3. 2014年6月参加在上海大学举办的第十届国际大块非晶合金会议(The 10th International Conference on Bulk Metallic Glasses), 发表题为“A unified criterion for shear band instability in metallic glasses” 的邀请报告。
4. 2014年3月参加在中科院物理所举办的第二届非晶材料和物理前沿研讨会，发表题为“Shear banding process in metallic glasses” 的邀请报告。
5. 2012年12月参加在厦门大学举办的第九届国际大块非晶合金会议(The 9th International Conference on Bulk Metallic Glasses)，发表题为“Origin of intermittent plastic flow and instability of shear band sliding in bulk metallic glasses”的邀请报告。
6. 2012年11月参加在德国科隆宇航中心举办的第二届中德非晶物理研讨会**(**Structure and Dynamics of Bulk Metallic Glasses, The Second Sino-German Workshop)发表题为“Origin of intermittent plastic flow and instability of shear band sliding in bulk metallic glasses”的口头报告。
7. 2010年9份参加在青岛举办的第十一届国际材联大会亚洲会议[IUMRS 11th International Conference in Asia (IUMRSICA)]，发表题为“Plasticity of ductile metallic glasses: a self-organized critical state”的Poster.

**Curriculum Vitae**

**Personal Information:**

Baoan, Sun,

Birth Date: 25, 12, 1982.

Birth place: Shandong.

Nationality: China.

Gender: Male.

Marital Status: Married.

Center For Advanced Structure Materials, Department of Mechanical and Biomedical Engineering, City University of Hong Kong，

Tat Chee Avenue, Kowloon, Hong Kong

Tel: +85291470413

Research ID: <http://www.researcherid.com/rid/C-6441-2012>

GoogleScholar: https://scholar.google.com/citations?user=ge-o7S0AAAAJ&hl=zh-CN

Email: baoansun@cityu.edu.hk; [iphysunba@gmail.com](mailto:iphysunba@gmail.com)

**Education**

**1. Ph.D. in Condensed Matter Physics, 2007.09-2011.01**

Institute of Physics, Chinese Academy of Science, Beijing

Supervisor: Prof .Wei-Hua Wang

Research Topic: dynamics of shear bands and plastic deformation mechanism in

metallic glasses

**2. Master Degree in Material Science and Engineering, 2004.09-2007.07**

School of Material Science and Engineering, Shandong University (SDU), Jinan

Supervisor: Prof Xiu-Fang Bian

Research Topic: The fragility of melts and glass-forming ability in Al-alloys

**3. Bachelor of Material Science and Engineering, 2000.09-2004.07**

School of Material Science and Engineering, Shandong University (SDU), Jinan

**Work Experience**

**1. Postdoctoral Research Fellow, 2013.07-present,** Center For Advanced Structure Materials, Department of Mechanical and Biomedical Engineering, City University of Hong Kong, Supervisor: Prof C T Liu (the member of National Academy of Engineering (NAE), USA, and the foreign member of Chinese Academy of Engineering (CAE)) and Asso. Prof. Yong Yang.

**2**. **Postdoctoral Research Scientist** 2011.01-2013.07,in Leibniz Institute For Solid State and Materials Research, Dresden (IFW, Dresden), Germany, Supervisor: Prof Jürgen Eckert (The Director of IFW, Dresden).

**3**. **Research Assistant** 2009.02-2009.08, in Department of Mechanical Engineering, Polytechnique University of Hong Kong, in the Research Group of Prof Lu Jian.

**Research interests and achievements**

My research interests are mainly focused on the mechanical behavior from the micro/nano- to the mm scale, including their plastic flow and fracture and the atomic-scale physical mechanism of amorphous solids, especially on bulk metallic glasses, a new class of alloys that have many attractive mechanical properties compared to traditional alloys. I have modeled and analyzed the dynamics aspects of plastic deformation of BMGs at low temperatures. By using statistical method and time series analysis commonly used in non-equilibrium dynamics, I found a close correlation between the dynamics of shear bands and the plasticity in BMGs: ductile BMGs can evolve into a self-organized critical state while brittle BMGs show chaos dynamic characteristics. The multiple shear band patterns in ductile BMGs also display a fractal nature. Theoretical models on shear band dynamics are also developed correspondingly to explain these phenomena. I also developed a stochastic model to investigate the complex interactions between shear transformation zones (the deformation units in BMGs) in the atomic-scale process. I am also interested in the relaxation and glassy transition of BMGs and their supercooled liquids as well as non-equilibrium phenomena in amorphous materials. These results have been published in almost 50 papers including top journals *Progress in Materials Science*, *Physics Review Letters, Nature Communication, Scientific Reports, Acta Materialia, Applied Physics Letters* and so on. These works are totally cited more than 700 times in Web of Science.

**Representative Publications**

1. **B. A. Sun**, W. H. Wang, Fracture of bulk metallic glasses, ***Progress in Materials Science***, 74, 211-307(2015). IF：27.417，Cited in Web of Science: 18 times.
2. **B. A. Sun**, H. B. Yu, W. Jiao, H. Y. Bai, D. Q. Zhao and W. H. Wang, Plasticity of ductile metallic glasses: a self-organized critical state, ***Physics Review Letters*** 105, 035501-04 (2010). IF：7.512，Cited in Web of Science: 92 times.
3. **B. A. Sun,** S. Pauly, J. Hu, W. H. Wang, U. Kühn, and J. Eckert, Origin of intermittent plastic flow and instability of shear band sliding in bulk metallic glasses, ***Physics Review Letters*** 110, 225501-5(2013). IF：7.512，Cited in Web of Science: 26 times.
4. **B. A. Sun**, S. Pauly, J. Tan, M. Stoica, W. H. Wang, U.Kϋhn, J. Eckert, Serrated flow and stick-slip deformation dynamics in the presence of shear band interactions for a Zr-based bulk metallic glass*,* ***Acta Materialia*** 60, 4160-4171 (2012). IF：4.465，Cited in Web of Science: 57 times.
5. **B. A. Sun**, Y. Yang, W. H. Wang and C. T. Liu, The critical Criterion on Runaway Shear Banding in Metallic Glasses, ***Scientific Reports*** 6, 21388(2016). IF：5.578.
6. **B. A. Sun**, Z. Y. Liu, Y. Yang, C. T. Liu, Delayed shear banding process and evolution of localized plastic flow in metallic glasses. ***Applied Physics Letters*** 105, 091904 (2014). IF：3.302，Cited in Web of Science: 8 times.
7. **B. A. Sun**, W. H. Wang, Fractal nature of multiple shear bands in severely deformed metallic glasses, ***Applied Physics Letters*** 98, 201902-04 (2011). IF：3.302，Cited in Web of Science: 23 times.
8. **B. A. Sun**, M. X. Pan, D. Q. Zhao, W. H. Wang, X. K. Xi, M. T. Sandor, Y. Wu, Aluminum-rich bulk metallic glasses, ***Scripta Materialia*** 59, 1159-1162 (2008). IF：3.302，Cited in Web of Science: 24 times.
9. Z. Wang, **B. A. Sun**, H. Y. Bai, W. H. Wang, Evolution of hidden localized flow during glass-to-liquid transition in metallic glass, ***Nature Communication*** 5, 5823 (2014). IF：11.470，Cited in Web of Science: 32 times.
10. Q. Luo, G. Garbarino, **B.A. Sun**, Y. Zhang, Z.Wang, N. Mattern, J. Eckert, J. Shen, Hierarchical densification and negative thermal expansion under high pressure in Ce-based metallic glass, ***Nature Communication***,6, 5703(2015). IF：11.470，Cited in Web of Science：2times.

**Scholarship and Awards**

1.2011.12,Excellent Award of President Fellowships, Chinese Academy of Science .

2. 2009.11: The Excellent Awards of Institute of Physics, CAS

3. 2006.12: Weicai Award for Excellent Graduate of Shandon University

4. 2005.11 Guanghua Award of Shandong University

5. 2000.09- 2003.07 The First Class Student Scholarship of Shandong University for three consecutive times

**Patents**

1. An almunium-rich bulk metallic glasses and its fabrication method, China Invention Patent, Publication Number: CN101671798 A

**Conferences**

1. **B.A.Sun**, Stablity of serrated flow in bulk metallic glasses, Chinese Materials Research Society Conference, Symposium on the serration and noise behavior in advanced materials, 10-14, Guiyang, July, 2015, Section chair and invited speaker

2. **B. A. Sun**, Z. Y. Liu, Y. Yang, C. T. Liu, Delayed shear banding process in metallic glasses, **Poster,** Golden Conference on advanced structure materials, July, 25-29, 2014, Chinese University of Hong Kong, Hong Kong.

3. **B. A. Sun** (invited speaker), A unified criterion for shear band instability in metallic glasses, The 10th International Conference on Bulk Metallic Glasses, June, 1-5, 2014, Shanghai University, Shanghai, China.

4. **B. A. Sun** (invited speaker), Shear banding process in metallic glasses, The Second Symposium on the Frontier of Amorphous Material and Physics, April, 11-13, 2014, Institute of Physics, Chinese Academy of Science, Beijing, China.

5**.B. A. Sun** (Invited Speaker), Origin of intermittent plastic flow and instability of shear band sliding in bulk metallic glasses , The 9th International Conference on Bulk Metallic Glasses, Dec, 16-20, 2012, Xiamen University, Xiamen, China.

6. **B. A. Sun,** Origin of serrated flow and instability of shear band sliding in bulk metallic glasses, Structure and Dynamics of Bulk Metallic Glasses, The Second Sino-German Workshop, Nov, 05-08, 2012, Institute of Material Physics, DLR, Köln, German.

7. **B. A. Sun**, H. B. Yu, W. Jiao, H. Y. Bai, D. Q. Zhao, W. H. Wang, Plasticity of ductile metallic glasses: a self-organized critical state, Poster, IUMRS 11th International Conference in Asia (IUMRSICA), Sep, 25-28, 2010, Qingdao, China.