

## 郑明毅

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### 主要研究方向

- 高性能镁合金与镁基复合材料的材料设计、制备及成形行为
- 剧烈塑性形变（ECAP、ARB、MDF）块体超细晶材料
- 镁基材料的织构
- 镁基材料的阻尼行为
- 镁基材料的腐蚀行为及表面处理

### 社会兼职

中国复合材料学会理事

科技部国际合作项目评审专家

### 主要学术成果

#### 获奖情况：

- 第三届国际剧烈塑性变形纳米材料会议（NanoSPD3，2005年9月，日本福冈），优秀墙报奖
- 2008 MRS 国际材料大会（IMRC 2008，2008年11月，中国重庆），最佳墙报奖
- 第四届黑龙江省优秀硕士论文指导教师奖，2008年
- 教育部新世纪优秀人才，2008年
- 黑龙江省自然科学二等奖，2009年

#### 主要学术论文：

近年来在国内外刊物上发表了100余篇与镁合金及镁基复合材料有关的论文，其中53篇论文被SCI检索，SCI论文被引用总计323次，单篇最高引用40次。

1. L.B. Tong, M.Y. Zheng, H. Chang, X.S. Hu, K. Wu, S.W. Xu, S. Kamado, Y. Kojima. Microstructure and mechanical properties of Mg-Zn-Ca alloy processed by Equal Channel Angular Pressing, *Mater. Sci. Eng. A*, 2009, 523: 289-294
2. W.M. Gan, K. Wu, M.Y. Zheng, X.J. Wang, H. Chang, H.-G. Brokmeier. Microstructure and mechanical property of the ECAPed Mg<sub>2</sub>Si/Mg composite, *Mater. Sci. Eng. A*, 2009, 516: 283-289
3. H. Chang, M. Y. Zheng, W. M. Gan, K. Wu, E. Maawad, H.G. Brokmeier. Texture evolution of the Mg/Al laminated composite fabricated by the accumulative roll bonding. *Scr. Mater.*, 2009, 61: 717-720
4. G.D. Fan, M. Y. Zheng, L.B. Tong, X.S. Hu, K. Wu. Low-frequency damping behavior of pure mg processed by equal channel angular pressing, *Inter. J. Modern Phy. B*, 2009, 23: 1829-1834
5. W. M. Gan, M. Y. Zheng, H. Chang, X. J. Wang, X. G. Qiao, K. Wu, Schwebke, H.-G. Brokmeier. Microstructure and Tensile Property of the ECAPed Pure Magnesium. *J. Alloys compounds*, 2008, 470, 256-262
6. W. M. Gan, H.-G. Brokmeier, M. Y. Zheng, H. Chang, X. J. Wang, K. Wu. Comparison of microstructure and texture development of ecaped pure Mg with a Mg-Si alloy. *Archives of Metallurgy And Materials*, 2008, 53: 63-68
7. M. Y. Zheng, G.D. Fan, L.B. Tong, X.S. Hu, K. Wu. Damping behavior and mechanical properties of Mg-Cu-Mn alloy processed by equal channel angular pressing, *Transactions of Nonferrous Metals Society of China*. 2008, 18, S33-38
8. M. Y. Zheng, S. W. Xu, X. G. Qiao, K. Wu, S. Kamado and Y. Kojima. Compressive deformation of Mg-Zn-Y-Zr alloy processed by equal channel angular pressing. *Mater. Sci. Eng. A*, 2008, 483-484:564-567
9. C.Y. Wang, K. Wu and M.Y. Zheng. Hot Deformation Behavior of Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub>W/ZK60 Magnesium Matrix Composite. *Mater. Sci. Eng. A*, 2008, 487(1-2): 495-498
10. X.J. Wang, X. S. Hu, K. Wu, K.K. Deng, W.M. Gan, C. Y. Wang, M.Y. Zheng. Hot deformation behavior of SiCp/AZ91 magnesium matrix composite fabricated by stir casting. *Mater. Sci. Eng. A*, 2008, 492(1-2): 481-485
11. C.Y. Wang, K. Wu and M.Y. Zheng. Hot deformation and processing maps of Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub>W/ZK60 composite. *Mater. Sci. Eng. A*, 2008, 477(1-2): 179-184
12. M. Y. Zheng, S. W. Xu, K. Wu, S. Kamado, Y. Kojima, Superplasticity of Mg-Zn-Y Alloy containing quasicrystal phase Processed by Equal Channel Angular Pressing, *Materials Letters*, 2007, 61: 4406-4408
13. C.Y. Wang, K. Wu and M.Y. Zheng. Hot deformation and processing maps of Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub>W/ZK60 composite. *Mater. Sci. Eng. A*, 2007, 464: 52-58
14. X.J. Wang, K. Wu, H.F. Zhang, W.X. Huang, H. Chang, W.M. Gan, M.Y. Zheng, D.L. Peng. Effect of hot extrusion on the microstructure of a particulate reinforced magnesium matrix composite. *Mater. Sci. Eng. A*, 2007, 465: 78-84
15. X.J. Wang, K. Wu, W.X. Huang, H.F. Zhang, M.Y. Zheng and D.L. Peng. Study on fracture behavior of particulate reinforced magnesium matrix composite using in situ SEM. *Composites Sci. Tech.*, 2007, 67: 2253-2260
16. K. Wu, Y.Q. Wang and M.Y. Zheng. Effects of microarc oxidation surface treatment on the mechanical properties of Mg alloy and Mg matrix composites. *Mater. Sci. Eng. A*, 2007, 447: 227-232
17. X.S. Hu, K. Wu, M.Y. Zheng, W.M. Gan and X.J. Wang, Low frequency damping capacities and mechanical properties of Mg-Si alloys. *Mater. Sci. Eng. A*, 2007, 452-453: 374-379
18. C.Y. Wang, X.J. Wang, H. Chang, K. Wu, M.Y. Zheng. Processing maps for hot working of ZK60 magnesium alloy. *Mater. Sci. Eng. A*, 2007, 464: 52-58
19. Y.Q. Wang, K. Wu and M.Y. Zheng. Effects of reinforcement phases in magnesium matrix composites on microarc discharge behavior and characteristics of microarc oxidation coatings. *Surface Coatings Tech.*, 2006, 201 (1-2): 353-360
20. X.S. Hu, K. Wu, M.Y. Zheng. Effect of heat treatment on the stability of damping capacity in hypoeutectic Mg-Si alloy. *Scr. Mater.* 2006, 54(9): 1639-1643
21. M. Y. Zheng, X. G. Qiao, S. W. Xu, K. Wu, S. Kamado and Y. Kojima. In-situ quasicrystal-reinforced magnesium matrix composite processed by equal-channel- angular- extrusion. *J. Mater. Sci.* 2005, 40: 2587-2590
22. M. Y. Zheng, X. G. Qiao, S. W. Xu, W. M. Gan, K. Wu, S. Kamado, Y. Kojima, H. G. Brokmeier. Effect of hot extrusion on microstructure and mechanical properties of quasicrystal-reinforced Mg-Zn-Y alloy. *Trans. Nonferrous Metals Society of China*. 2005, 15(4): 715-721
23. X.S. Hu, Y.K. Zhang, M.Y. Zheng, K. Wu. A study of damping capacities in pure Mg and Mg-Ni alloys, *Scr. Mater.* 2005, 52: 1141-1145
24. Y. Q. Wang, M. Y. Zheng, K. Wu. Microarc oxidation coating formed on SiCw/AZ91 magnesium matrix composite and its corrosion resistance. *Mater. Letter*. 2005, 59: 1727- 1731
25. K. Wu, X. S. Hu, M. Y. Zheng, Mechanical properties and damping capacities of magnesium alloys processed by equal channel angular extrusion. *Trans. Nonferrous Met. Soc. China*, 2005, 15(s2): 276-279
26. S. B. Li, Y. Q. Wang, M. Y. Zheng, K. Wu. Dynamic recrystallization of AZ91 magnesium alloy during compressive deformation at elevated temperature. *Transactions of Nonferrous Metals Society of China*. 2004, 14(2): 306-311
27. M. Y. Zheng, K. Wu, M. Liang, S. Kamado, Y. Kojima. Effect of thermal exposure on interface and mechanical properties of Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub>W/AZ91 magnesium matrix composite. *Mater. Sci. Eng. A*, 2004, A372: 66-74
28. M. Y. Zheng, K. Wu, M. Liang, S. Kamado, Y. Kojima. The interface of Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub>W/AZ91 magnesium matrix composite after thermal exposure at 600 °C, *J. Mater. Sci. Letter*. 2003, 22: 1709-1712
29. M. Y. Zheng, W. C. Zhang, K. Wu, C. K. Yao. The deformation and fracture behavior of SiCw/AZ91 magnesium matrix composite during in-situ TEM straining. *J. Mater. Sci.* 2003 38, 2647 - 2654
30. M. Zhao, M.Y. Zheng, K. Wu, W. F. Peng, D. Z. Yang. Effect of thermal cycling on the mechanical properties of SiCw/ZK60 magnesium matrix composite. *J. Mater. Sci. Letter*. 2003, 22: 643-646
31. M.Y. Zheng, K. Wu, S. Kamado, Y. Kojima. Ageing behavior of squeeze cast SiCw/AZ91magnesium matrix composite. *Mater. Sci. Eng. A*, 2003, A348: 67-75
32. Mingyi Zheng, Kun Wu, Congkai Yao. Effect of interfacial reaction on mechanical behavior of SiCw/AZ91 magnesium matrix composites. *Mater. Sci. Eng. A*, 2001, 318(1-2): 50-56

#### 国际会议特邀报告：

1. M.Y. Zheng, L.Yang, L.B. Tong, Q.Chang, X.S. Hu. K. Wu, Ultrafine-grained ZK60 Mg alloy processed by Multi-directional forging (MDF) (Invited Lecture), 3rd Asian Symposium on Magnesium Alloys (ASMA3), Shenyang, China, September, 2009
2. M.Y. Zheng, H. Chang, K. Wu, W.M. Gan, H.G. Brokmeier, Mg/Al Laminated Composite Fabricated by Accumulative Roll Bonding (ARB) (Invited Lecture), The 1st Japan-China Magnesium Workshop, Nagaoka, Japan, August, 2009
3. Mingyi Zheng, Jinlong Wang, Xiaojun Wang, Kun Deng, Xiaoshi Hu, Kun Wu, Equal Channel Angular Pressing of SiCp/AZ91 Magnesium Matrix Composite. (invited presentation), The 5th International Conference on Advanced Materials and Processing (ICAMP-5), Harbin, China, September, 2008
4. M. Y. Zheng, K. Xiao, X. S. Hu, W. M. Gan, K. Wu. The effect of equal channel angular pressing on damping capacity and mechanical properties of AZ31 Mg alloy. (invited presentation), 2nd Asian Symposium on Magnesium Alloys (ASMA2), Fukuoka, Japan, October, 2007
5. M.Y. Zheng, X.S. Hu, S.W. Xu, X.G. Qiao, K. Wu, S. Kamado, Y. Kojima. Mechanical Properties and Damping Behavior of Magnesium Alloys Processed by Equal Channel Angular Pressing. (invited presentation), Thermec'2006, Vancouver, Canada, July, 2007

#### 专利：

1. 200910071718.9 郑明毅，徐超，常海，胡小石，吴昆，高强高阻尼超细晶镁基层状复合板材的制备方法
2. 200810064179.1 郑明毅，佟立波，常海，吴昆，超细晶 Mg/Ti 层状复合板的制备方法
3. 200710199427.9 郑明毅，乔晓光，吴昆，高强高韧高阻尼镁合金及其制备方法
4. 200610010326.8 郑明毅，乔晓光，吴昆，高强高韧高阻尼镁合金及其制备方法
5. 200410013521.7 吴昆，郑明毅，王艳秋，镁基复合材料加工方法