

## 费维栋

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## 主要研究方向

- [1] **多功能金属基复合材料**—低热膨胀、高成型性、高塑性、低成本铝基复合材料的界面设计与塑性变形行为与机制研究；高热导、低膨胀、高电导铜基和铝基复合材料的界面设计与性能优化。
- [2] **功能薄膜材料**—主要包括铁磁薄膜、铁电薄膜、压电薄膜的制备、多铁薄膜等的微结构表征和性能分析；铁性薄膜的铁性相变理论、磁电耦合机制的理论研究与试验研究。
- [3] **材料的 X 射线衍射与散射分析理论与方法研究**—主要包括：纳米薄膜材料的织构、残余应力、标度特性、生长机制、界面行为等的分析；块体材料织构、残余应力、缺陷等的表征。

## 社会兼职

教育部材料物理与化学专业教学指导委员会委员

黑龙江省复合材料学会常务理事

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全国 X 射线衍射专业委员会委员

东北三省 X 射线分析学会副主任委员

## 主要学术成果

1. W.D.Fei, H.Y.Yue, L.D.Wang, Equicohesive temperature of the interface and matrix and its effect on the tensile plasticity of Al18B4O33 whiskers reinforced aluminum composite at elevated temperatures, *Materials Chemistry and Physics*, 2010, 119(3), 515-518
2. Q.G. Chi, W.L. Li, C.Q.Liu, W.D.Fei, Effect of TiOx seed layer on the texture and electric properties in La and Ca modified PbTiO3 thin films, *Thin Solid Films*, 2009, 517(17), 4826-4829
3. Q.G. Chi, W.L. Li, B. Feng, C.Q. Liu and W.D. Fei, Low-temperature crystallization and orientation evolution of Nb-doped Pb(Zr,Ti)O3 thin films using a Pb<sub>0.8</sub>La<sub>0.1</sub>Ca<sub>0.1</sub>Ti<sub>0.975</sub>O<sub>3</sub> seed layer, *Scripta Materialia*, 2009, 60(4), 218-220
4. W.D.Fei, C.Q.Liu, M.H.Ding, et al. Characterization of fiber texture by omega-scan x-ray diffraction, *Review of Scientific Instruments*, 2009, 80(9), 093903
5. Q.G.Chi, W.L.Li, W.D.Fei, Enhanced performance of sandwich structure Pb<sub>0.8</sub>La<sub>0.1</sub>Ca<sub>0.1</sub>Ti<sub>0.975</sub>O<sub>3</sub> thin film for pyroelectric applications, *Materials Letters*, 2009, 63(20), 1712-1714
6. Y.S.Yu, Hai-Bo Li, W.L. Li, Mei Liu, Yu-Mei Zhang and W.D.Fei, Structure and magnetic properties of magnetron-sputtered FePt/Au superlattice films, *Journal of Physics D: Applied Physics*, 2008, 41, 245003
7. C.Q.Liu, W.D.Fei, W.L.L, Theory of magnetoelectric coupling in 2-2-type magnetostrictive/piezoelectric composite film with texture, *Journal of Physics D: Applied Physics*, 2008, 41(12), 125404
8. C.Q.Liu, W.D.Fei, W.L.L, Effects of texture and residual stress on the transition of ferroelectric perovskite thin films with C-axis polarization, *Thin Solid Films*, 2008, 516(6), 1256-1270
9. H.Y.Yue, W.D.Fei, L.D.Wang, Effects of heat-treatment on interfacial microstructures and tensile properties of ZnAl2O4 and ZnO coated Al18B4O33 w/Al composites, *Materials Science and Engineering A: Structural Material Properties Microstructure and Processing*, 2008, 472(1-2), 231-234
10. Z.J.Li, W.D.Fei, H.Y.Yue, et al. Hot deformation behaviors of Bi2O3-coated Al18B4O33 whisker reinforced aluminum matrix composite with high formability, *Composites Science and Technology*, 2007, 67(6), 963-973
11. F.Yang, W.D.Fei, Z.M.Gao, et al. An alternative micro-area X-ray diffraction method for residual stress measurement of Pb(Zr,Ti)O-3 film, *Surface & Coating Technology*, 2007, 202(1), 121-125
12. H.Y.Yue, W.D.Fei, L.D.Wang, Mechanical properties and thermal stability of ZnAl2O4-coated aluminum borate whiskers reinforced 2024Al composite, *Journal of Materials Science*, 2008, 43(18), 6233-6237
13. H.Q.Gao, L.D.Wang, W.D.Fei, Interfacial reaction and tensile strength of copper-coated Al18B4O33 whisker reinforced 6061Al composite, *Materials Science and Engineering A: Structural Material Properties Microstructure and Processing*, 2008, 479(1-2), 261-268
14. Z.J.Li, L.D.Wang, W.D.Fei, Effect of interfacial Bi2O3 coating on compressive deformation behavior of aluminum borate whisker-reinforced aluminum composite at elevated temperature, *Materials Science and Engineering A: Structural Material Properties Microstructure and Processing*, 2007, 447(1-2), 314-318
15. H.Y.Yue, W.D.Fei, Z.J.Li, Effects of ZnO coating on the wettability and tensile properties of aluminum borate whisker-reinforced aluminum composite, *Materials Science and Engineering A: Structural Material Properties Microstructure and Processing*, 2006, 441(1-2), 197-201
16. 王黎东, 费维栋, 含铝和 / 或镁的复合硅酸盐的制备方法 专利号: 03132477.0
17. 费维栋, 岳红彦, 王黎东, 含 SnO2 涂覆陶瓷相增强铝基或镁基复合材料 专利号: 200510010130.4
18. 费维栋, 岳红彦, 王黎东, ZnAl2O4 包覆硼酸铝晶须增强铝基或镁基复合材料及其制 专利号: 200510127326.1
19. 费维栋, 岳红彦, 王黎东, ZnO 涂覆的陶瓷相增强铝基或镁基复合材料及其制备方法 专利号: 200510127309.8
20. 王黎东, 费维栋, β-锂霞石的制备方法 专利号: 200610009821.7
21. 王黎东, 费维栋, 含β-锂霞石的铜基复合材料 专利号: 200610009820.2
22. 费维栋, 王黎东, 一种含β-锂霞石的铜基复合材料的制备方法 专利号: 200710144909.4
23. 费维栋, 李志军, 王黎东, 三氧化二铋包覆陶瓷相增强铝基复合材料 专利号: 200510009684.2