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主要研究方向

材料表面改性，材料表面强化和表面功能化，表面层成分与组织结构调控及其表征，薄膜材料重点开展等离子体基离子注入与沉积、等离子体化学热处理方法与技术研究

社会兼职

中国机械学会表面工程委员会常务委员

中国腐蚀与防护学会涂料涂装及表面保护专业委员会常务委员

纳米压入与划入技术标准化工作组委员

中国金属学会高级会员

中国材料研究学会会员

中国真空学会高级会员

高能束流加工技术国防科技重点实验室客座教授

主要学术成果

获国家技术发明二等奖 1 项，省部级科学技术进步二等奖 2 项，三等奖 1 项

获发明专利 5 项

发表学术论文 200 余篇，代表性论文如下：

1. Jiang SQ (Jiang Shaoqun), Ma XX (Ma Xinxin), Tang GZ (Tang Guangze), Wang ZH (Wang Zehua), Wang G (Wang Gang), Zhou ZH (Zhou Zehua), Microstructure and variable emittance property of annealed La-Sr-Mn-O films, JOURNAL OF RARE EARTHS, 2011, vol29, no1, 83-86
2. Li ZW (Li Zhongwen), Gu L (Gu Le), Tang GZ (Tang Guangze), Ma XX (Ma Xinxin), Sun MR (Sun Mingren), Wang LQ (Wang Liqin), Phase evolution of tantalum nitride and tantalum carbide films with PBII parameters, RARE METALS, 2011, vol.30, No2, 142-145
3. Guo GW (Guo, Guangwei), Tang GZ (Tang, Guangze), Wang YJ (Wang, Yajun), Ma XX (Ma, Xinxin), Sun MR (Sun, Mingren), Wang LQ (Wang, Liqin), Yukimura K (Yukimura, Ken), Structure and hardness of a-C:H films prepared by middle frequency plasma chemical vapor deposition, APPLIED SURFACE SCIENCE vol 257 No 10 4738-4742, 2011
4. Li JL (Li Jinlong), Ma XX (Ma Xinxin), Sun MR (Sun Mingren), Li XM (Li, Xiaomin), Song ZL (Song Zhenlun), Fabrication of nitrogen-doped mesoporous TiO₂ layer with higher visible photocatalytic activity by plasma-based ion implantation, THIN SOLID FILMS vol: 519 No: 1, 101-105, 2010
5. Li ZW (Li, Zhongwen), Tang GZ (Tang, Guangze), Ma XX (Ma, Xinxin), Sun MR (Sun, Mingren), Wang LQ (Wang, Liqin), XPS Study on Chemical State and Phase Structure of PBII Nitriding M50 Steel, IEEE TRANSACTIONS ON PLASMA SCIENCE vol: 38 No: 11 pp: 3079-3082 : Part 1, 2010
6. Li ZW (Li Zhongwen), Tang GZ (Tang Guangze), Ma XX (Ma Xinxin), Anti Wear Property of GCr15 Steel by Ta Deposition and N Ion Implantation, RARE METAL MATERIALS AND ENGINEERING, vol. 39 pp 77-80, Suppl. 1, 2010
7. Xu FJ (Xu, Fangjun), Tang GZ (Tang, Guangze), Guo GW (Guo, Guangwei), Ma XX (Ma, Xinxin), Ozur GE (Ozur, G. E.), Influence of irradiation number of high current pulsed electron beam on the structure and properties of M50 steel, NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS vol: 268 no: 15 pp: 2395-2399, 2010
8. Zhang L (Zhang, Li), Tang GZ (Tang, Guangze), Ma XX (Ma, Xinxin), Long range effect of ion irradiation on diffusion, PHYSICS LETTERS A vol: 374 no: 21 pp: 2137-2139, 2010
9. Lei Han, Yanjun Xin, Huiling Liu, Xinxin Ma and Guangze Tang. Photoelectrocatalytic properties of nitrogen doped TiO₂/Ti photoelectrode prepared by plasma based ion implantation under visible light, Journal of Hazardous Materials, Volume 175, Issues 1-3, 15 March 2010, Pages 524-531
10. Li JL (Li Jin-long), Ma XX (Ma Xin-xin), Sun MR (Sun Ming-ren), Li XM (Li Xiao-min), Song ZL (Song Zhen-lun). Structure and visible photocatalytic activity of nitrogen-doped meso-porous TiO₂ layer on Ti6Al4V substrate by plasma-based ion implantation, TRANSACTIONS OF NONFERROUS METALS SOCIETY OF CHINA v19 Sp. Iss. 3, S665-S668, 2009
11. Wang YJ, Ma XX, Tang GZ. FORMATION MECHANISM OF POROUS STRUCTURE ON 316L STAINLESS STEEL BY ANODIZATION, 5th International Conference on Advanced Materials and Processing, SEP 02-05, 2008 Harbin Inst Technol, Harbin, PEOPLES R CHINA, INTERNATIONAL JOURNAL OF MODERN PHYSICS B v23 no.6-7, 2009, p1047-1052
12. Guang-wei Guo, Guang-ze Tang, Ya-jun Wang, Xin-xin Ma and Yu-jiang Wang. Composition design and properties of CoNbZr amorphous films deposited by unbalanced magnetron sputtering. Journal of Central South University of Technology, Volume 16, Number 5, 2009, 719-724
13. Guangze Tang, Jinlong Li, Mingren Sun, Xinxin Ma. Fabrication of nitrogen-doped TiO₂ layer on titanium substrate. Applied Surface Science 255 (2009) 9224-9229
14. Jinlong Li, Xinxin Ma, Mingren Sun, Zhenlun Song. Structure and tribological performance of helium-implanted layer on Ti6Al4V alloy by plasma-based ion implantation. Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, v 267, n 3, February, 2009, p 482-486
15. Tang GZ (Tang, Guangze), Ma XX (Ma, Xinxin), Sun MR (Sun, Mingren), Xu, SY (Xu, Shuyan). Magnetron sputtering deposition Ti-B-C-N films by Ti/B4C compound target. SURFACE & COATINGS TECHNOLOGY, 203 (9): 1288-1291 JAN 25 2009, 0257-8972
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20. MA Xinxin, JIANG Shaoqun, and SUN Mingren. Microstructure in implanted layer of 1Cr18Ni9 steel implanted at elevated temperature. RARE METALS, Vol. 26, Spec. Issue, Aug 2007, p. 318
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26. Li JL, Ma XX, Sun MR. Structure in oxygen-implanted layer on Ti prepared by plasma based ion implantation. J. Cent. South. Univ. Technol. S2: 0031-06
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