

## REFERENCES

1. Boonruang, C., Thongtem, T., McNallan M., Thongtem, S. : Effect of nitridation and carburization of  $\gamma$ -TiAl alloys on wear resistance. *Mater. Lett.* 2004; 58 : 3175-3181.
2. Boonruang, C., Thongtem, T., McNallan M., Singkarat, S., Thongtem, S. : Deposition of TiC on  $\gamma$ -TiAl Alloys by Directly Applying Voltages. *Solid. State. Phenom.* 2005; 107-107 : 145-150.
3. Thongtem, S., Boonruang, C., Thongtem, T., Mcnallan, M. J. : Nitridation of  $\gamma$ -TiAl alloys by direct metal-gas reaction at 1000-1300 K. *Surf. Interface Anal.* 2005; 37 : 765-769.
4. ASM International Handbook Committee : “Introduction to titanium and titanium alloys.” in *ASM Handbook, Metals Handbook, Volume 2 Properties and Selection: Nonferrous Alloys and Special-Purpose Materials*, Formerly 10th ed. ASM International, U.S.A., 1998; p. 587-590.
5. Noda, T., Okabe, M., Isobe, S. : Hard surfacing of TiAl intermetallic compound by plasma carburization. *Mater. Sci. Eng. A.* 1996; A213 : 157-161.
6. Zhao, B., Sun, J., Wu, J. S., Yuan, Z. X. : Gas nitriding behavior of TiAl based alloys in an ammonia atmosphere. *Scripta Mater.* 2002; 46 : 581-586.
7. Thongtem, S., Thongtem, T., Mcnallan, M. J., Yu, L. D. : Effect of high temperature gas nitridation of TiAl on wear resistance. *J. Mater. Process. Manu.* 1998; 6 : 185-191.
8. Tian, W. H., Nemoto, M. : Effect of carbon addition on the microstructures and mechanical properties of  $\gamma$ -TiAl alloys. *Intermetallics* 1997; 5 : 237-244.

9. Kainuma, R., Fujita, Y., Mitsui, H., Ohnuma I., Ishida. K. : Phase equilibria among  $\alpha$  (hcp),  $\beta$  (bcc) and  $\gamma$  ( $L1_0$ ) phases in Ti-Al base ternary alloys. *Intermetallics* 2000; 8 : 855-867.
10. Ohnuma, I., Fujita, Y., Mitsui, H., Ishikawa, K., Kainuma, R., Ishida, K. : Phase equilibria in the Ti-Al binary system. *Acta Mater.* 2000; 48 : 3113-3123.
11. Subramanian, C., Strafford, K. N., Wilks, T. P., Ward, L. P. : On the design of coating systems: metallurgical and other considerations. *J. Mater. Process. Tech.* 1996; 56 : 385-397.
12. Guu, Y. Y., Lin, J. F., Ai, C. : The tribological characteristics of titanium nitride, titanium carbonitride and titanium carbide coatings. *Thin Solid Films* 1997; 302 : 193-200.
13. Wei, C., Lin, J. F., Jiang, T., Ai, C. : Tribological characteristics of titanium nitride and titanium carbonitride multilayer films: Part I. The effect of coating sequence on material and mechanical properties. *Thin Solid Films* 2001; 381 : 94-103.
14. Wei, C., Lin, J. F., Jiang, T., Ai, C. : Tribological characteristics of titanium nitride and titanium carbonitride multilayer films: Part II. The effect of coating sequence on tribological properties. *Thin Solid Films* 2001; 381 : 104-118.
15. Carrasco, C.A., Vergara, S.V., Benavente, G.R., Mingolo, N., Rios, J.C. : The relationship between residual stress and process parameters in TiN coatings on copper alloy substrates. *Mater. Charact.* 2002; 48 : 81-88.
16. Musil, J., Hruba, H. : Superhard nanocomposite  $Ti_{1-x}Al_xN$  films prepared by magnetron sputtering. *Thin Solid Films* 2000; 365 : 104-109.

17. Shieh, J., Hon, M. H. : Nanostructure and hardness of titanium aluminum nitride prepared by plasma enhanced chemical vapor deposition. *Thin Solid Films.* 2001; 391 : 101-108.
18. Kawata, K., Sugimura, H., Takai, O. : Characterization of (Ti,Al)N films deposited by pulsed d.c. plasma-enhanced chemical vapor deposition. *Thin Solid Films.* 2001; 386 : 271-275.
19. Kawata, K., Sugimura, H., Takai, O. : Characterization of multiplayer films of Ti-Al-O-C-N system prepared by pulsed plasma-enhanced chemical vapor deposition. *Thin Solid Films.* 2001; 390 : 64-69.
20. Fouquet, V., Pichon, L., Drouet, M., Straboni, A. : Plasma assisted nitridation of Ti-6Al-4V. *Appl. Surf. Sci.* 2004; 221 : 248-258.
21. Voltz, K., Ensinger, W., Stritzker, B., Rauschenbach, B. : Structural investigations of titanium nitride films formed by plasma immersion ion implantation. *Surf. Coat. Tech.* 1998; 103-104 : 257-261.
22. Tang, B., Liu, H., Wang, L., Wang, X., Gan, K., Yu, Y., Wang, Y., Sun, T., Wang, S. : Fabrication of titanium carbide film on bearing steel by plasma Immersion ion implantation and deposition. *Surf. Coat. Tech.* 2004; 186 : 320-323.
23. Huber, P., Manova, D., Mändl, S., Rauschenbach, B. : Formation of TiN, TiC and TiCN by metal plasma immersion ion implantation and deposition. *Surf. Coat. Tech.* 2003; 174-175 : 1243-1247.
24. Sen, U. : Kinetics of titanium nitride coatings deposited by thermo-reactive deposition technique. *Vacuum* 2004; 75 : 339-345.
25. Matsuura, K. , Kudoh, M. : Surface modification of titanium by a diffusional carbonitriding method. *Acta Mater.* 2002; 50 : 2693-2700.

26. Perdrix, F., Trichet, M. F., Bonnentien, J.L., Cornet, M., Bigot, J. : Relationships between interstitial content, microstructure and mechanical properties in fully lamellar Ti-48Al alloys, with special reference to carbon. *Intermetallics* 2001; 9 : 807-815.
27. Walpole, R. E. : "Linear correlation." In *Elementary Statistical Concepts*, 2nd ed. Macmillan Publishing Co., Inc., U.S.A., 1983; p. 335, 345.
28. ASTM : "Thermocouple materials." in *Manual on The Use of Thermocouples in Temperature Measurement*. ASTM Publications, U.S.A., 1990; p. 20-25.
29. Gaskell, D. R. : "Introduction and definition of terms." in *Introduction to Metallurgical Thermodynamics*, 2nd ed. Hemisphere Publishing Co., U.S.A., 1981; p. 8.
30. Loh, K.K. *NUSDAN*. Computer software. National University of Singapore, 1993. v.02.02.002, 7.11 MB, disk.
31. Philips Analytical B. V. *X'Pert HighScore*. Computer Software. Koninklijke Philips Electronics N. V., 2001. 1.0 a, 136 MB, CD-ROM.
32. JCPDS-ICDD *PDF-2*. Computer Software. JCPDS - International Centre for Diffraction Data, 2001. Data Base (Sets 1-51 plus 70-89), 592 MB, CD-ROM.
33. ASTM : "Standard test method for wear testing with a pin-on-disk apparatus." in *Annual Book of ASTM Standards, Section 3, Metals Test Methods and Analytical Procedures, Volume 03.02, Wear and Erosion; Metal Corrosion*. ASTM, U.S.A., 1993; p. 387-391.
34. Levi, G., Kaplan, W. D., Bamberger, M. : Structure refinement of titanium carbonitride (TiCN). *Mater. Lett.* 1998; 35 : 344-350.

35. Philibert, J., Rothman, S. J. (Trans) : "Self-diffusion." in *Atom Movements, Diffusion and Mass Transport in Solids*. Les Editions de Physique, France, 1991; p. 97-101.
36. Philibert, J., Rothman, S. J. (Trans) : "Solute diffusion in pure materials, Diffusion in alloys." in *Atom Movements, Diffusion and Mass Transport in Solids*. Les Editions de Physique, France, 1991; p. 164.
37. Philibert, J., Rothman, S. J. (Trans) : "Diffusion and drift." in *Atom Movements, Diffusion and Mass Transport in Solids*. Les Editions de Physique, France, 1991; p. 7.
38. Gray, D. E. : "Solid-state physics." in *American Institute of Physics Handbook*, 3rd ed. McGraw-Hill Book Co., U.S.A., 1972; p. 9-39 – 9-40.
39. Tesmer, F.R., Nastasi, M. : "Backscattering spectrometry." in *Handbook of Modern Ion Beam Materials Analysis*. Materials Research Society, U.S.A., 1995; p. 39-40.