7. Memories of AMME’2006
Conference, 4th–8th June 2006 in Gliwice – Wisła, Poland
The Organising Committee of the AMME’2006 Conference

11. Mechanism and types of tool wear; particularities in advanced cutting materials
S. Dolinshek, J. Kopac (Slovenia)

19. The kinetics of phase transformations during the tempering of HS18-0-1 high-speed steel
P. Bala, J. Pacyna, J. Krawczyk (Poland)

26. Metal clusters in zeolite 4A obtained by synthesis process
E. David (Romania)

32. Phases created during diffusion bonding of aluminium and aluminium bronze chips
J. Gronostajski, W. Chmura, Z. Gronostajski (Poland)

38. Corrosion resistance properties of sintered duplex stainless steel
L.A. Dobrzański (Poland), Z. Brytan (Poland), M. Actis Grande (Italy), M. Rosso (Italy)

46. Influence of burnishing on stress corrosion cracking susceptibility of duplex steel
J. Łabanowski, A. Ossowska (Poland)

The paper entitled “The kinetics of phase transformations during the tempering of HS18-0-1 high-speed steel” presented by P. Bala, J. Pacyna and J. Krawczyk on a page 19 shows the microstructure of the HS18-0-1 high speed steel after hardening from 1260°C and heating with the rate 0.05°C/s up to 750°C (TEM). These are the characteristic temperatures at which the end of precipitation of carbides of M₇C₃ type is observed. During heating up to 750°C the morphology of primary carbides is not changed. Heating to 750°C caused the transformation of martensite into ferrite and precipitation of carbides which can be seen well on a TEM microphotograph. The carbides revealed on the microphotograph of the tested steel after such tempering, observed in TEM, are of M₇C₃ type.

The research paper entitled “Phases created during diffusion bonding of aluminium and aluminium bronze chips” by J. Gronostajski, W. Chmura and Z. Gronostajski on a page 32 describes an original concept of producing a composite, consisting in the mixing and the bonding of aluminium chips with aluminium bronze chips through press moulding and extrusion. As a result of the reciprocal diffusion of copper and aluminium during extrusion and heat treatment applied just after extrusion a creation of hard phases leading to an increase of wear resistant takes place. Diffusion bonding process of aluminium and aluminium bronze chips leads to creation of phases typical for Cu-Al alloys. The bonding takes place during extrusion of cold compacted mixture of aluminium and aluminium bronze chips and during heat treatment applied after extrusion. In this way, without the participation of metallurgical processes good bearing materials can be manufactured. The proposed new sintering criterion allows to determine the condition of sintering and deformation in order to obtain a good product.
Analysis and modelling

53. Numerical solution techniques for structural instability problems
E. Armentani, C. Calì, G. Cricrì, F. Caputo, R. Esposito (Italy)

65. Use of electronic catalogues for planning of machining processes
B. Muršec, F. Čuš (Slovenia)

75. Model optimisation for mould filling analysis with application CAE package C-Mold
J. Nabialek, J. Koszkul (Poland)

Manufacturing and processing

83. Effect of laser alloying on thermal fatigue and mechanical properties of the 32CrMoV12-20 steel
L.A. Dobrzański, K. Labisz, A. Klimpel (Poland)

91. Acoustic emission in drilling carbon steel and nodular gray iron
J. Kopač, S. Sali (Slovenia)

Industrial management and organisation

96. Six Sigma process improvements in automotive parts production
M. Soković (Slovenia), D. Pavletić (Croatia), E. Krulić (Croatia)

Indexes

103. Author index
104. Keywords index