

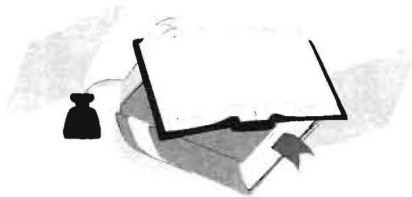


ABSTRACTS

SEMDOK 2016

21st International Seminar of Ph.D. Students

under the auspices of
prof. Dr. Ing. Milan Sága
dean of the Faculty of Mechanical Engineering of the University of Žilina



Terchová, Slovakia
27 – 29 January, 2016

Žilinská univerzita / EDIS – Editing Centre ŽU

© Žilinská univerzita, 2016

ISBN 978-80-554-1175-0

SEMDOK 2016

21st International Seminar of Ph.D. Students
Terchová, 27 - 29 January, 2016
UNIVERSITY OF ŽILINA, SK



All published articles were reviewed by two reviewers:

Reviewers : Belan Juraj
Bokůvka Otakar
Borkowski Stanislaw
Guagliano Mario
Hadzima Branislav
Konečná Radomila
Liptáková Tatiana
Mičian Miloš
Nový František
Palček Peter
Selejdak Jacek
Tillová Eva
Ulewicz Robert
Zatkaliková Viera

Note: Authors are responsible for language contents of their papers.

CONTENTS

<i>DETERMINATION OF COHESIVE LAW OF COLD SPRAY COATING FOR AERONAUTICAL REPAIR APPLICATIONS</i> K. Petráčková, M. Guagliano	7
<i>INFLUENCE OF THE SLIDING SPEED ON THE WEAR RESISTANCE OF PARTS HARD FACED BY THE HIGH-ALLOYED FILLER METAL WHICH OPERATE IN CONDITIONS WITHOUT LUBRICATION</i> D. Arsić, V. Lazić, R. R. Nikolić, S. Aleksandrović, M. Djordjević	8
<i>INFLUENCE OF THE CONTACT AND COMPACTING PRESSURES ON THE QUALITY OF THE FRICTION WELDED JOINT</i> N. Ratković, D. Arsić, V. Lazić, R. R. Nikolić, B. Hadzima	9
<i>INFLUENCE OF THE VARIABLE CONTACT PRESSURE ON THE TENSILE FORCE IN THE PROCESS OF STRIP SLIDING IN THE FLAT DIE IN IRONING</i> M. Djordjević, S. Aleksandrović, R. R. Nikolić, V. Lazić, D. Arsić	10
<i>CONSTRUCTION OF INDUSTRIAL FLOORS</i> K. Dubala, J. Selejdak, P. Koteš	11
<i>MECHANICAL PROPERTIES OF STEELS HARDOX</i> M. Mazur	12
<i>HODNOTENIE VPLYVU SULFIDOV NA KORÓZNU ODOLNOSŤ KONDENZÁTOROVEJ MOSADZE</i> M. Lovíšek, T. Liptáková	13
<i>ANALÝZA ZMIEN VNÚTORNÉHO TLMENIA V ZÁVISLOSTI OD AMPLITÚDY VÝKMITU</i> Z. Dresslerová, P. Palček	14
<i>ANALÝZA PREDČASNE ZLYHANEJ ENDOPROTÉZY</i> M. Oravcová, P. Palček, M. Chalupová	15
<i>HODNOTENIE VPLYVU TEPLoty ELEKTRODEPOZÍCIE NA KVALITU VRSTVY OKTAVÁPENATÉHO FOSFÁTU (OCP) NA HORČÍKOVEJ ZLIATINE ELEKTRON 21</i> M. Omasta, B. Hadzima	16
<i>POROVNANIE MECHANICKÝCH VLASTNOSTÍ VZORIEK VYROBENÝCH ZO ZLIATINY Ti6Al4V ADITÍVNOU TECHNOLOGIJOU SLM a DMLS</i> A. Bača, R. Konečná, G. Nicoletto	17
<i>ÚNAVOVÁ ŽIVOTNOSŤ NÍZKOLEGOVANEJ OCELE 40NiCrMo7 PO GULŔČKOVANÍ</i> D. Závodská, M. Guagliano, O. Bokůvka, L. Trško	18
<i>FEM ANALYSE CORRECTION OF S-N CURVE WITH RESPECT TO WELD IMPERFECTIONS</i> J. Lago, M. Guagliano, O. Bokůvka, F. Nový	19
<i>HODNOTENIE TVAROVÉHO FAKTORU EUTEKTICKÉHO KREMÍKA (B-FÁZY) V AI ZLIATINE A356 POMOCOUBRAZOVEJ ANALÝZY</i> K. Borko, E. Tillová	20
<i>THE MANAGEMENT OF THE PRODUCTION PROCESS IN VIEW OF NEW REQUIREMENTS OF THE STANDARD ISO 9001: 2015</i> B. Balon, B. Lisiecka, E. Tillová, M. Roszak	21

Name : SEMDOK 2016, 21st International Seminar of Ph.D. Students

Printed : EDIS – Editing Centre ŽU, University of Žilina,
Slovakia, 2016

Prepared : University of Žilina, Slovakia
Faculty of Mechanical Engineering
Department of Materials Engineering

Design : Mgr. Alena Töröková

ISBN 978-80-554-1175-0

INFLUENCE OF THE SLIDING SPEED ON THE WEAR RESISTANCE OF PARTS HARD FACED BY THE HIGH-ALLOYED FILLER METAL WHICH OPERATE IN CONDITIONS WITHOUT LUBRICATION

Dušan Arsić^{1*}, Vukić Lazić¹, Ružica R. Nikolić^{1,2}, Srblav Aleksandrović¹, Milan Djordjević¹

¹ Faculty of Engineering, University of Kragujevac, Serbia

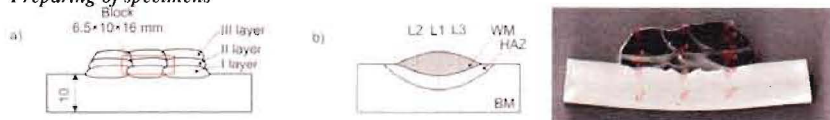
² Research Center, University of Žilina, Slovakia

The objective of this work was to determine the wear resistance of layers hard faced by the high-alloyed filler metal, with or without the austenite inter-layer, on parts that operate at different sliding speeds in conditions without lubrication. The samples were hard faced with filler metal E 10-UM-60-C with high content of C, Cr and W. Used filler metal belongs to alloys aimed for reparatory hard facing of parts damaged by abrasive and erosive wear and it is characterized by high hardness and wear resistance. In experiments, the sliding speed and the normal loading were varied and the wear scar was monitored, based on which the volume of the worn material was calculated analytically. The contact duration time was monitored over the sliding path of 300 mm. The most intensive wear was established for the loading force of 100 N and the sliding speed of 1 m/s, though the significant wear was also noticed in conditions of the small loading and speed of 0.25 m/s, which was even greater than at larger speeds.

Keywords

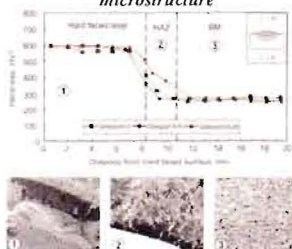
Hard facing, filler metal, abrasive wear, wear resistance, sliding speed.

Preparing of specimens

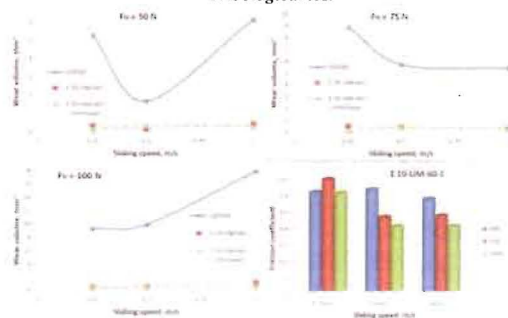


Results

Hardness measurement and microstructure



Tribological test



*Corresponding author: dusan.arsic@fink.rs