

# Contents

<b>Theoretical and Experimental Analysis of the Energy Dissipation at Fatigue Crack Tip Under Cyclic Loading with Constant Stress Intensity Factor</b> . . . . .	1
O. Plekhov, A. Vshivkov and A. Iziumova	
<b>A Study of Progressive Milling Technology on Surface Topography and Fatigue Properties of the High Strength Aluminum Alloy 7475-T7351</b> . . . . .	7
Miroslav Piska, Petra Ohnistova, Jana Hornikova and Charles Hervoches	
<b>Study and Design of a New Range of Composite Based Shock Absorbers for the Automotive Sector</b> . . . . .	19
J. Niez, M. Ben Amara, J. Capelle, V. Bouchart and P. Chevrier	
<b>A New High-Cycle Fatigue Criterion Based on a Self-consistent Scheme for Hard Metals Under Non-proportional Loading</b> . . . . .	29
Kékéli Amouzou and Eric Charkaluk	
<b>Characterization and Evaluation of a Railway Wheel Steel in the HCF and VHCF Regimes</b> . . . . .	41
Henrique Soares, Pedro Costa, Mário Vieira, Manuel Freitas and Luís Reis	
<b>High-Temperature Low Cycle Fatigue Resistance of Inconel 713LC Coated with Novel Thermal Barrier Coating</b> . . . . .	49
Ivo Šulák, Karel Obrtlík, Ladislav Čelko, David Jech and Pavel Gejdoš	
<b>The Effect of Pearlite Banding on the Mechanical Anisotropy of Low Carbon Steel</b> . . . . .	57
M. Beltrán, J. L. González, D. I. Rivas, Felipe Hernández and Héctor Dorantes	

<b>Analysis of Mechanical Behavior of the Underlying Soft Tissue to Ischial Tuberosities Using Finite Element Method . . . . .</b>	<b>67</b>
Diana Alicia Gayol-Mérida, Víctor Manuel Araujo-Monsalvo, José de Jesús Silva-Lomelí, Víctor Manuel Domínguez-Hernández, Marcos Martínez-Cruz, Elisa Martínez-Coría, Martín Luna-Méndez and Aylenid Alemán-Pérez	
<b>Study of the Endurance Limit of AA7075 Aluminum Produced by High-Pressure Vacuum Die Casting Analyzed by Classical Whöler Curve . . . . .</b>	<b>75</b>
David Levasseur, Jimmy Simard, Francis Breton and Lotfi Toubal	
<b>Life Prediction of a Mono Contact Aluminum/Steel at Constant and Variable Amplitudes Loading in Fretting Fatigue Configuration . . . . .</b>	<b>85</b>
A. Belloula, A. Amrouche and M. Nait-Abdelaziz	
<b>Influence of Microstructure on Fatigue Crack Formation and Growth in a Low-Carbon Steel . . . . .</b>	<b>91</b>
Donka Angelova, Rozina Yordanova and Svetla Yankova	
<b>Determination of the Region of Stabilization of Low-Cycle Fatigue HSLE Steel from Test Data . . . . .</b>	<b>101</b>
Bojana Aleksić, Vujadin Aleksić, Abubakr Hemer, Ljubica Milović and Aleksandar Grbović	
<b>Study of a Stud Bolt Wrench Failure Due to an Inadequate Heat Treatment . . . . .</b>	<b>113</b>
Sandra L. Rodriguez-Reyna, Francisco G. Perez-Gutierrez, J. Luis Hernández-Rivera, Jorge Zaragoza-Siqueiros and Christian J. Garcia-Lopez	
<b>Multiaxial Fatigue of Rubbers: Comparative Study Between Predictive Tools . . . . .</b>	<b>123</b>
G. Ayoub, M. Naït Abdelaziz and F. Zaïri	
<b>Laboratory Study of Fatigue in Water Conveying HDPE and PVC Pipes Subject to Extreme Hydraulic Transient Pressures . . . . .</b>	<b>129</b>
René Autrique Ruiz and Eduardo Antonio Rodal Canales	
<b>Probabilistic Assessment of Nuclear Piping Integrity by Considering Environmental Fatigue and Stress Corrosion Cracking . . . . .</b>	<b>139</b>
Seung Hyun Kim, Md Nasimul Goni and Yoon-Suk Chang	
<b>The Inspections, Standards and Repairing Methods for Pipeline with Composite: A Review and Case Study . . . . .</b>	<b>147</b>
M. Hadj Meliani, O. Bouledroua, Z. Azari, A. Sorour, N. Merah and G. Pluvinage	

<b>Effect of Microstructure on Tension, Charpy and DWTT Properties on Two API X70 Plates</b> . . . . .	157
Fernando Guzmán, Moisés Hinojosa and Eduardo Frias	
<b>Fatigue Analysis in a Bellow Expansion Joint Installed a Heat Exchanger</b> . . . . .	165
I. Villagómez, J. L. González, J. J. Trujillo and D. Rivas	
<b>Failure Analysis of Stress Corrosion Cracking of a Ball Valve in Service</b> . . . . .	173
I. Mortera, J. L. González, A. Casarrubias and D. Rivas	
<b>Assessment of Danger Due to Cracks in Structural Elements of Different Shapes and Geometry</b> . . . . .	181
Orest Bilyy	
<b>Formation of Preferential Paths in Cracked Hele-Shaw Cells by Water Injection—An Experimental Study</b> . . . . .	189
S. de Santiago, I. V. Lijanova, C. O. Olivares-Xometl and N. V. Likhanova	
<b>Smith Watson and Topper Model in the Determination of the Fatigue Life of an Automotive Steel</b> . . . . .	197
F. F. Curiel, R. R. Ambriz, M. A. García, M. C. Ramírez and S. García	
<b>Influence of Weld Parameters and Filler-Wire on Fatigue Behavior of MIG-Welded Al-5083 Alloy</b> . . . . .	209
Vidit Gaur, Manabu Enoki, Toshiya Okada and Syohei Yomogida	
<b>Mechanical Evaluation of IN718-AL6XN Dissimilar Weldment</b> . . . . .	215
R. Cortés, R. R. Ambriz, V. H. López, E. R. Barragán, A. Ruiz and D. Jaramillo	
<b>Fatigue Life of Resistance Spot Welding on Dual-Phase Steels</b> . . . . .	225
J. H. Ordoñez Lara, R. R. Ambriz, C. García, G. Plascencia and D. Jaramillo	
<b>Failure Analysis by Hot Cracking Root HAZ in Welding SMAW Type</b> . . . . .	237
M. Arzola, J. L. González, S. J. García, D. I. Rivas and E. Sandoval	
<b>Effect of Electromagnetic Field on the Microstructure and Mechanical Properties of the Dissimilar 2205/316L Welded Joint</b> . . . . .	247
S. L. Hernández-Trujillo, V. H. López-Morelos, R. García-Hernández, M. A. García-Rentería, A. Ruiz-Marines and J. A. Verduzco-Martínez	
<b>Heat Input Effect on the Mechanical Properties of Inconel 718 Gas Tungsten Arc Welds</b> . . . . .	255
N. K. Rodríguez, E. R. Barragán, I. V. Lijanova, R. Cortés, R. R. Ambriz, C. Méndez and D. Jaramillo	

<b>A Case Study of Corrosion Fatigue in Aluminium</b>	
<b>Casing Bolt Holes</b> . . . . .	263
Siew Fong Choy	
<b>Study of the Modal Effect of 1045 Steel Pre-stressed Beams Subjected to Residual Stress</b> . . . . .	269
Erasto Vergara Hernández, Brenda Carolina Pérez Millán, Juan Manuel Sandoval Pineda and Luis Armando Flores Herrera	
<b>Experimental Analysis of Fatigue Cracks Emanating from Corner Notches in the Presence of Variable Residual Stress Fields</b> . . . . .	273
J. L. Cuevas, C. Garcia, A. Amrouche, R. R. Ambriz and D. Jaramillo	
<b>Fatigue Crack Initiation and Growth on Welded Joints of 2205 Duplex Alloy: The Effect of Electromagnetic Interaction During Welding</b> . . . . .	281
J. Rosado-Carrasco, J. González-Sánchez, V. H. López-Morelos and G. R. Domínguez	
<b>Nondestructive Monitoring of Rail Surface Damage Via Barkhausen Noise Technique</b> . . . . .	287
M. Neslušan, K. Zgútová, I. Maňková, P. Kejzlar and J. Čapek	
<b>Failure Analysis of Stress Corrosion Cracking of Two Tees in a Pressurized Drainage System</b> . . . . .	299
D. Rivas, J. L. González, A. Casarrubias and M. Beltran	
<b>Fatigue Life Extension of 2205 Duplex Stainless Steel by Laser Shock Processing: Simulation and Experimentation</b> . . . . .	307
V. Granados-Alejo, C. A. Vázquez-Jiménez, C. Rubio-González and G. Gómez-Rosas	
<b>Fracture Toughness of Fiber Metal Laminates Through the Concepts of Stiffness and Strain-Intensity-Factor</b> . . . . .	313
Jesús Gerardo Martínez Figueroa and Perla Itzel Alcántara Llanas	
<b>Uncertainty Quantification of Fatigue Life Prediction in Welded Structures Using Microstructure-Based Simulations</b> . . . . .	329
Takayuki Shiraiwa, Fabien Briffod and Manabu Enoki	
<b>Prediction of Fatigue Life Induced by Defects Considering Crack Initiation</b> . . . . .	335
Ryota Sakaguchi, Takayuki Shiraiwa and Manabu Enoki	
<b>Peridynamic Modeling of Cracking in Ceramic Matrix Composites</b> . . . . .	341
Yile Hu, Erdogan Madenci and Nam Phan	
<b>Evaluation of Stress Intensity Factors (SIFs) Using Extended Finite Element Method (XFEM)</b> . . . . .	355
Bojana Aleksić, Aleksandar Grbović, Abubakr Hemer, Ljubica Milović and Vujadin Aleksić	

<http://www.springer.com/978-3-319-70364-0>

Proceedings of the 17th International Conference on  
New Trends in Fatigue and Fracture

Ambriz, R.R.; Jaramillo, D.; Plascencia, G.; Nait Abdelaziz,  
M. (Eds.)

2018, VIII, 369 p. 255 illus., 200 illus. in color.,

Hardcover

ISBN: 978-3-319-70364-0