

# Contents

<b>Part I Lean Manufacturing Tools and Techniques Applied to Industry</b>	
<b>1 SEM: A Global Technique—Case Applied to TPM</b>	<b>3</b>
Valeria Martínez-Loya, José Roberto Díaz-Reza, Jorge Luis García-Alcaraz and Jessica Yanira Tapia-Coronado	
<b>2 Green Production Attributes and Its Impact in Company’s Sustainability</b>	<b>23</b>
José Roberto Mendoza-Fong, Jorge Luis García-Alcaraz, Humberto de Jesús Ochoa-Domínguez and Guillermo Cortes-Robles	
<b>3 Collaborative Multiobjective Model for Urban Goods Distribution Optimization</b>	<b>47</b>
Martin Dario Arango-Serna, Julian Andres Zapata-Cortes and Conrado Augusto Serna-Uran	
<b>4 Multi-agent System Modeling for the Coordination of Processes of Distribution of Goods Using a Memetic Algorithm</b>	<b>71</b>
Martin Dario Arango-Serna, Conrado Augusto Serna-Uran and Julian Andres Zapata-Cortes	
<b>5 Operational Risk Prioritization in Supply Chain with 3PL Using Fuzzy-QFD</b>	<b>91</b>
Juan Carlos Osorio-Gómez, Diego Fernando Manotas-Duque, Leonardo Rivera-Cadavid and Ismael Canales-Valdiviezo	
<b>6 An Alternative to Multi-response Optimization Using a Bayesian Approach</b>	<b>111</b>
Jorge Limon-Romero, Guilherme Luz-Tortorella, Cesar Puente, José María Moreno-Jiménez and Marco Maciel-Monteon	

<b>7</b>	<b>A Methodology for Optimizing the Parameters in a Process of Machining a Workpiece Using Multi-objective Particle Swarm Optimization . . . . .</b>	<b>129</b>
	Osslan Osiris Vergara-Villegas, Carlos Felipe Ramírez-Espinoza, Vianey Guadalupe Cruz-Sánchez, Manuel Nandayapa and Raúl Neco-Caberta	
<b>8</b>	<b>Lean Manufacturing: A Strategy for Waste Reduction . . . . .</b>	<b>153</b>
	Marina De la Vega-Rodríguez, Yolanda Angélica Baez-Lopez, Dora-Luz Flores, Diego Alfredo Tlapa and Alejandro Alvarado-Iniesta	
<b>9</b>	<b>Collaborative New Product Development and the Supplier/Client Relationship: Cases from the Furniture Industry . . . . .</b>	<b>175</b>
	Luís Filipe Reis-Silva and António Carrizo-Moreira	
<b>10</b>	<b>Realization and Demand for Training in the Planning Processes of Change: Empirical Evidences in the Wine Industry in Rioja, Spain . . . . .</b>	<b>197</b>
	Alfonso J. Gil and Mara Mataveli	

## **Part II Applications of Artificial Intelligence Techniques for Industry**

<b>11</b>	<b>Generation of User Interfaces for Mobile Applications Using Neuronal Networks . . . . .</b>	<b>211</b>
	Laura N. Sánchez-Morales, Giner Alor-Hernández, Rosebet Miranda-Luna, Viviana Y. Rosales-Morales and Cesar A. Cortes-Camarillo	
<b>12</b>	<b>Association Analysis of Medical Opinions About the Non-realization of Autopsies in a Mexican Hospital . . . . .</b>	<b>233</b>
	Elayne Rubio Delgado, Lisbeth Rodríguez-Mazahua, Silvestre Gustavo Peláez-Camarena, José Antonio Palet Guzmán and Asdrúbal López-Chau	
<b>13</b>	<b>Interdependent Projects Selection with Preference Incorporation . . . . .</b>	<b>253</b>
	Claudia G. Gomez, Laura Cruz-Reyes, Gilberto Rivera, Nelson Rangel-Valdez, Maria Lucila Morales-Rodriguez and Mercedes Perez-Villafuerte	
<b>14</b>	<b>MED-IS-IN, an Intelligent Web App for Recognizing Non-prescription Drugs . . . . .</b>	<b>273</b>
	Eduardo Ceh-Varela, Gandhi Hernández-Chan, Marisol Villanueva-Escalante and José Luis Sánchez-Cervantes	

- 15 A Brief Review of IoT Platforms and Applications in Industry . . . .** 293  
 Isaac Machorro-Cano, Giner Alor-Hernández,  
 Nancy Aracely Cruz-Ramos, Cuauhtémoc Sánchez-Ramírez  
 and Mónica Guadalupe Segura-Ozuna

### **Part III Ergonomics Tools and Applications in Industrial Processes**

- 16 A Theoretical Framework About the Impact of Human Factors  
 on Manufacturing Process Performance . . . . .** 327  
 Karina C. Arredondo-Soto, Teresa Carrillo-Gutiérrez,  
 Marcela Solís-Quinteros and Guadalupe Hernández-Escobedo
- 17 Effects of Organizational Culture and Teamwork  
 on Manufacturing Systems' Performance . . . . .** 353  
 Arturo Realyvásquez, Aidé Aracely Maldonado-Macías  
 and Liliana Avelar-Sosa
- 18 Methodology to Determine Product Dimensions Based  
 on User Anthropometric Data . . . . .** 373  
 Juan Luis Hernández-Arellano, Julián Israel Aguilar-Duque  
 and Karla Gabriela Gómez-Bull
- 19 Manual Lifting Standards: Ergonomic Assessment  
 and Proposals for Redesign for Industrial Applications . . . . .** 387  
 Lilia R. Prado-León and Enrique Herrera-Lugo
- 20 Relationship Between Social Support and Burnout Dimensions  
 in Middle and Senior Managers of the Manufacturing Industry  
 in Ciudad Juárez . . . . .** 409  
 Sonia G. Valadez-Torres, Aidé Aracely Maldonado-Macías,  
 Rocío Camacho-Alamilla and Liliana Avelar-Sosa
- 21 Stressing the Stress or the Complexity of the Human Factor:  
 Psychobiological Consequences of Distress . . . . .** 431  
 Miguel Ángel Serrano and Raquel Costa

### **Part IV Application of Logistics Tools to Improve Industrial Processes**

- 22 A Systemic Conceptual Model to Assess the Sustainability  
 of Industrial Ecosystems . . . . .** 451  
 Dulce-Rocío Mota-López, Cuauhtémoc Sánchez-Ramírez,  
 Magno-Ángel González-Huerta, Yara Anahi Jiménez-Nieto  
 and Adolfo Rodríguez-Parada

<b>23</b>	<b>An Evolutive Tabu-Search Metaheuristic Approach for the Capacitated Vehicle Routing Problem</b> . . . . .	<b>477</b>
	Santiago-Omar Caballero-Morales, José-Luis Martínez-Flores and Diana Sánchez-Partida	
<b>24</b>	<b>Production Planning for a Company in the Industry of Compact Discs Mass Replications</b> . . . . .	<b>497</b>
	Miguel A. Moreno, Omar Rojas, Elias Olivares-Benitez, Samuel Nucamendi-Guillén and Hector Roberto Garcia de Alba Valenzuela	

New Perspectives on Applied Industrial Tools and  
Techniques

García-Alcaraz, J.L.; Alor-Hernández, G.;

Maldonado-Macías, A.A.; Sánchez-Ramírez, C. (Eds.)

2018, XXXII, 516 p. 124 illus., 73 illus. in color.,

Hardcover

ISBN: 978-3-319-56870-6