

# Contents

<b>Multidisciplinary Optimization of Mechatronic Systems: Application to an Electric Vehicle</b> . . . . .	1
Amir Guizani, Moncef Hammadi, Jean-Yves Choley, Thierry Soriano, Mohamed Slim Abbes and Mohamed Haddar	
<b>Topological Approach for the Modeling of Complex and Mechatronic Systems</b> . . . . .	15
Mariem Miladi Chaabane, Régis Plateaux, Jean-Yves Choley, Chafik Karra, Alain Riviere and Mohamed Haddar	
<b>Instrumentation of Back to Back Planetary Gearbox for Dynamic Behavior Investigation</b> . . . . .	23
Ahmed Hammami, Alfonso Fernández del Rincón, Fakher Chaari, Fernando Viadero Rueda and Mohamed Haddar	
<b>Experimental Study of Bolted Joint Self-Loosening Under Transverse Load</b> . . . . .	37
Olfa Ksentini, Bertrand Combes, Mohamed Slim Abbes, Alain Daidié and Mohamed Haddar	
<b>Granular Material for Vibration Suppression</b> . . . . .	47
Marwa Masmoudi, Stéphane Job, Mohamed Slim Abbes and Imad Tawfiq	
<b>Influence of Trust Evolution on Cost Structure Within Horizontal Collaborative Networks</b> . . . . .	55
Omar Ayadi, Garikoitz Madinabeitia, Naoufel Cheikhrouhou and Faouzi Masmoudi	
<b>Multi-objective Optimization of a Multi-site Manufacturing Network</b> . . . . .	69
Houssem Felfel, Omar Ayadi and Faouzi Masmoudi	

<b>Influence of Processing Parameters on the Mechanical Behavior of CNTs/Epoxy Nanocomposites. . . . .</b>	77
Ayda Bouhamed, Olfa Kanoun and Nghia Trong Dinh	
<b>A Polynomial Chaos Method for the Analysis of Uncertain Spur Gear System. . . . .</b>	89
Ahmed Guerine, Yassine Driss, Moez Beyaoui, Lassaad Walha, Tahar Fakhfakh and Mohamed Haddar	
<b>Non-linear Stiffness and Damping Coefficients Effect on a High Speed AMB Spindle in Peripheral Milling . . . . .</b>	99
Amel Bouaziz, Maher Barkallah, Slim Bouaziz, Jean-Yves Cholley and Mohamed Haddar	
<b>Generalised Polynomial Chaos for the Dynamic Analysis of Spur Gear System Taken into Account Uncertainty . . . . .</b>	111
Manel Tounsi, Moez Beyaoui, Kamel Abboudi, Lassaad Walha and Mohamed Haddar	
<b>Modelling and Simulation of the Doctors' Availability in Emergency Department with SIMIO Software. Case of Study: Bichat-Claude Bernard Hospital . . . . .</b>	119
Mahmoud Masmoudi, Patrice Leclaire, Vincent Cheutet and Enrique Casalino	
<b>FGM Shell Structures Analysis Using an Enhanced Discrete Double Directors Shell Element . . . . .</b>	131
Mondher Wali, Abdessalem Hajlaoui, Jamel Mars, K. El Bikri, Abdessalem Jarraya and Fakhreddine Dammak	
<b>Modal Analysis of Helical Planetary Gear Train Coupled to Bevel Gear . . . . .</b>	149
Maha Karray, Nabih Feki, Fakher Chaari and Mohamed Haddar	
<b>Dynamic Characterization of Viscoelastic Components . . . . .</b>	159
Hanen Jrad, Jean Luc Dion, Franck Renaud, Imad Tawfiq and Mohamed Haddar	



<http://www.springer.com/978-3-319-07169-5>

Mechatronic Systems: Theory and Applications  
Proceedings of the Second Workshop on Mechatronic  
Systems JSM'2014

Abbes, M.S.; Choley, J.-Y.; Chaari, F.; Jarraya, A.; Haddar,  
M. (Eds.)

2014, VII, 174 p. 116 illus., 28 illus. in color., Softcover  
ISBN: 978-3-319-07169-5