## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOND GRAPH THEORY I</strong></td>
<td>Bond-graph-based symbolic conversion of a DAE model of a planar mechanism into an ODE model</td>
<td>7</td>
<td>Peter Breedveld,</td>
</tr>
<tr>
<td></td>
<td>Parameterization Of Nonlinear Systems Using Neuro Bond Graphs</td>
<td>16</td>
<td>Benito R. Fernández, Juan Rincón, Gaudi Morantes,</td>
</tr>
<tr>
<td><strong>BOND GRAPH THEORY II</strong></td>
<td>Modeling Principles Using the Relation Between Lagrange Multipliers and Bond Graphs</td>
<td>29</td>
<td>José Granda, Louis Nguyen, Paul Brocker,</td>
</tr>
<tr>
<td></td>
<td>Sensor Placement on Diagnostic Bond Graphs for Structural Isolation of Parametric Faults</td>
<td>41</td>
<td>Wolfgang Borutsky</td>
</tr>
<tr>
<td><strong>VEHICLES AND TRANSPORTATION SYSTEMS I</strong></td>
<td>Modeling the Dynamic Characteristics of a Seated Human for Vehicle Ride Comfort Using Bond Graphs</td>
<td>53</td>
<td>Francis Assadian, Alex Beckerman</td>
</tr>
<tr>
<td></td>
<td>Simulation Model for an Autonomous Truck Connected to An eHighway</td>
<td>60</td>
<td>C. García-Sanchez, J.A. Lozano J. Felez</td>
</tr>
<tr>
<td></td>
<td>Full Car Model with Load Transfer, Powertrain Dynamics, and Driver Model for Active Safety System Design</td>
<td>72</td>
<td>Geoff Rideout, Payam Pooyafar</td>
</tr>
<tr>
<td><strong>MECHANICAL SYSTEMS</strong></td>
<td>Bond Graphs for Two Dimensional, Multi-Mode Vibration Using Finite Modes and Power Conserving Transformers</td>
<td>83</td>
<td>Donald Margolis</td>
</tr>
</tbody>
</table>
Bond Graph Modelling of Automatic Transmission Double-Transition Shift Dynamics

Investigation of effect of wheel/track irregularities on the dynamic response of the railway track using bond graph

Design of an Electric Power Steering System Using Bond Graphs

VEHICLES AND TRANSPORTATION SYSTEMS II

Vehicle Modeling and Simulation for determination of Drag Factor in Accident Reconstruction

Bond Graph Reduction for Rack Force Observer Application on a Passenger Vehicle

Reconfiguration of the mobile manipulator under the failure of the manipulator joint actuator

CONTROL SYSTEMS AND ELECTRONICS

Bond Graph Model of Jet Engine Shaft Whirl Dynamics Incorporating Active Bearing Control

A Hybrid Control Scheme For Modeling And Control Of 1-DOF Flexible Arm URM For Welding Applications

Bond Graph Modeling for the Simulation of an Electromechanical Chain
### BOND GRAPH THEORY III

Comparison of control strategies for a real bar system in the presence of disturbances: a bond graph approach  
174  
Joel Gonzalez,  
Jaime Jimenez,  
Christophe Sueur

Bond Graph/Digraph Correspondence  
Procedure And Symbolic Determination Of State Space Descriptor System  
185  
Julien Lagnier,  
Wilfrid Marquis-Favre,  
Daniel Thomasse,  
Didier Rémond

Bond Graph Modeling Of A Holonomic Mobile Platform With Four Mecanum Wheels  
195  
Pushpendra Kumar  
Othman Lakhal,  
Rochdi Merzouki

### ENERGY SYSTEMS I

Biomolecular System Energetics  
206  
Peter J. Gawthrop,  
Edmund J. Crampin

Bond Graph Modeling And Energetic Control Of A PEM Electrolyzer  
215  
Houria CHAABNA  
Jean-Yves DIEULOT

Modelling And Simulation Of Varistors In The Physical Domain  
222  
Gilbert Gonzalez,  
David Alvarado,  
R. Sarahi Rodriguez,

### FLUIDICS

An Evolutive Bond Graph Modeling of Aerospace Hydraulic Reservoirs and Its Modelica Implementation  
232  
Clément Coïc,  
Marianne Biéron

Bond Graph Modeling of the Hybrid Pneumatic/Hydraulic Axial Motion Component of a Physical Drilling Simulator  
242  
Mohammed Mokhtar Said,  
Geoff Rideout,  
Stephen D. Butt

Model Based Control of Cooperative Planar Bionic Manipulator  
250  
Mulu Girmay Tsegay,  
Pushparaj Mani Pathak  
A.K. Samantaray,  
Rochdi Merzouki,  
Belkacem Ould Bouamama
MECHANICAL SYSTEMS II

Bond Graph Models for Reconstruction of Motorcycle Collisions Barrier Equivalent Speeds 262 José Granda, Toby Glocke

Port-Hamiltonian Formulation Of The Bond Graph Model Of A Hybrid Renewable Energy System 275 Houria CHAABNA, Jean-Yves DIEULOT

Quasi-Steady State Model Of A Permanent Synchronous Generator In A Bond Graph Approach 282 Gilberto González, Victor Lopez, David Alvarado

Bond Graph Application of Steering Shimmy Analysis 290 Sang Rak Kim, Alex Beckerman

AUTHOR INDEX