Contents

1 **Type II Diabetes and Obesity: A Control Theoretic Model**
Sam Al-Hashmi, Mervyn P.B. Ekanayake, C.F. Martin 1

2 **Dynamic Network Modeling of Diurnal Genes in Cyanobacteria**
Thanura Elvitigala, Himadri B. Pakrasi, Bijoy K. Ghosh 21

3 **On Stability of Limit Cycles of a Prototype Problem of Piecewise Linear Systems**
O. Eriksson, J. Tègner, Y. Zhou 43

4 **On the Existence and Uniqueness of Minimum Time Optimal Trajectory for a Micro Air Vehicle under Wind Conditions**
Ram V. Iyer, Rachelle Arizpe, Phillip R. Chandler 57

5 **A Precise Formulation and Solution of the Drag Racer and Hot Rodder Problems**
Kevin R. Kefauver, William S. Levine 79

6 **An Information Space View of "Time": From Clocks to Open-Loop Control**
Steven M. LaValle, Magnus Egerstedt 93

7 **Control System Design for the Capsubot**
Hongyi Li, Namkon Lee, Norihiro Kamamichi, Katsuhisa Furuta 107

8 **On the Topology of Liapunov Functions for Dissipative Periodic Processes**
Christopher I. Byrnes 125

9 **Global Controllability of Switched Affine Systems**
Daizhan Cheng 141

10 Control and Observation of the Matrix Riccati Differential Equation
G. Dirr, U. Helmke, J. Jordan 169

11 Nonlinear Locally Lipschitz Output Regulation in Presence of Non-hyperbolic Zero-Dynamics
Alberto Isidori, Lorenzo Marconi 185

12 On the Observability of Nonlinear and Switched Systems
Wei Kang, Jean-Pierre Barbot, Liang Xu 199

13 Feedback Stabilization of Solitons and Phonons Using the Controlled Lax Form
R. Palamakumbura, D.H.S. Maithripala, J.M. Berg, M. Holtz 217

14 Global Asymptotic Controllability of Polynomial Switched Systems and Their Switching Laws
P.C. Perera 239

15 Semi-global Output Feedback Stabilization of a Class of Non-uniformly Observable and Non-smoothly Stabilizable Systems
Bo Yang, Wei Lin 253

Author Index 285