

Preface ..... I

**Invited Lectures**

F.J. Romero-Campero, M. Gheorghe, G. Ciobanu,  
J.M. Auld, M.J. Pérez-Jiménez:  
Cellular modelling using P systems and process algebra ..... 375

V. Manca:  
Metabolic P systems for biomolecular dynamics ..... 384

**Regular Papers**

D. Besozzi, P. Cazzaniga, D. Pescini, G. Mauri:  
Seasonal variance in P system models for metapopulations ..... 392

A. Binder, R. Freund, G. Lojka, M. Oswald:  
Applications of membrane systems in distributed systems ..... 401

C. Bonchiş, C. Isbaşa, G. Ciobanu:  
Compositional asynchronous membrane systems ..... 411

H. Chen, T.-O. Ishdorj, Gh. Păun:  
Computing along the axon ..... 417

S. Cheruku, A. Păun, F.J. Romero-Campero,  
M.J. Pérez-Jimenez, O.H. Ibarra:  
Simulating FAS-induced apoptosis by using P systems ..... 424

G. Ciobanu, L. Cornăcel:  
Probabilistic transitions for P systems ..... 432

R. Freund, M. Oswald, T. Schirk:  
How a membrane agent buys goods in a membrane store ..... 442

M.A. Gutiérrez-Naranjo, M.J. Pérez-Jiménez,  
A. Riscos-Núñez, F.J. Romero-Campero:  
How to express tumours using membrane systems ..... 449

L. Huang, X.-X. He, N. Wang, Y. Xie:  
P systems based multi-objective optimization algorithm ..... 458

W. Korczyński:  
Paun's systems as models of economic systems ..... 466

A. Leporati, C. Zandron, G. Mauri:  
Solving the factorization problem with P systems ..... 471

K.G. Subramanian, R. Saravanan, M. Geethalakshmi,  
P. Helen Chandra, M. Margenstern:  
P systems with array objects and array rewriting rules ..... 479

Xian Xu:  
Tissue P systems with parallel rules on channels ..... 486

