

Table of Contents

Invited Lectures

Psim: A Computational Platform for Metabolic P Systems	1
<i>Luca Bianco, Alberto Castellini</i>	
Modeling the Dynamics of HIV Infection with Conformon-P Systems and Cellular Automata	21
<i>Pierluigi Frisco, David Wolfe Corne</i>	
(UREM) P Systems with a Quantum-like Behavior: Background, Definition, and Computational Power	32
<i>Alberto Leporati</i>	
The Calculus of Looping Sequences for Modeling Biological Membranes	54
<i>Roberto Barbuti, Andrea Maggiolo-Schettini, Paolo Milazzo, Angelo Troina</i>	
Membrane Computing in Connex Environment	77
<i>Mihaela Mălița, Gheorghe Ștefan</i>	

Regular Papers

Skin Output in P Systems with Minimal Symport/Antiport and Two Membranes	97
<i>Artiom Alhazov, Yurii Rogozhin</i>	
On the Reachability Problem in P Systems with Mobile Membranes	113
<i>Bogdan Aman, Gabriel Ciobanu</i>	
Modeling Symport/Antiport P Systems with a Class of Hierarchical Petri Nets	124
<i>Luca Bernardinello, Nicola Bonzanni, Marco Mascheroni, Lucia Pomello</i>	
A Hybrid Approach to Modeling Biological Systems	138
<i>Francesco Bernardini, Marian Gheorghe, Francisco José Romero-Campero, Neil Walkinshaw</i>	
Causality in Membrane Systems	160
<i>Nadia Busi</i>	
Simulating the Bitonic Sort Using P Systems	172
<i>Rodica Ceterchi, Mario J. Pérez-Jiménez, Alexandru Ioan Tomescu</i>	

On the Number of Agents in P Colonies	193
<i>Luděk Cienciala, Lucie Ciencialová, Alica Kelemenová</i>	
Events, Causality, and Concurrency in Membrane Systems	209
<i>Gabriel Ciobanu, Dorel Lucanu</i>	
P Systems with String Objects and with Communication by Request	228
<i>Erzsébet Csuhaj-Varjú, György Vaszil</i>	
On the Dynamics of PB Systems with Volatile Membranes	240
<i>Giorgio Delzanno, Laurent Van Begin</i>	
A Logarithmic Bound for Solving Subset Sum with P Systems	257
<i>Daniel Díaz-Pernil, Miguel A. Gutiérrez-Naranjo, Mario J. Pérez-Jiménez, Agustín Riscos-Núñez</i>	
A Formal Framework for Static (Tissue) P Systems	271
<i>Rudolf Freund, Sergey Verlan</i>	
Conformon-P Systems with Negative Values	285
<i>Pierluigi Frisco</i>	
Optimizing Evolution Rules Application and Communication Times in Membrane Systems Implementation	298
<i>Jorge A. Tejedor, Abraham Gutiérrez, Luis Fernández, Fernando Arroyo, Ginés Bravo, Sandra Gómez</i>	
Hill Kinetics Meets P Systems: A Case Study on Gene Regulatory Networks as Computing Agents <i>in silico</i> and <i>in vivo</i>	320
<i>Thomas Hinze, Sikander Hayat, Thorsten Lenser, Naoki Matsumaru, Peter Dittrich</i>	
Solving Numerical NP -Complete Problems with Spiking Neural P Systems	336
<i>Alberto Leporati, Claudio Zandron, Claudio Ferretti, Giancarlo Mauri</i>	
Towards a Complete Covering of SBML Functionalities	353
<i>Tommaso Mazza</i>	
Active Membrane Systems Without Charges and Using Only Symmetric Elementary Division Characterize P	367
<i>Niall Murphy, Damien Woods</i>	
Balancing Performance, Flexibility, and Scalability in a Parallel Computing Platform for Membrane Computing Applications	385
<i>Van Nguyen, David Kearney, Gianpaolo Gioiosa</i>	

On Flip-Flop Membrane Systems with Proteins	414
<i>Andrei Păun, Alfonso Rodríguez-Patón</i>	
Characterizing Membrane Structures Through Multiset Tree Automata	428
<i>José M. Sempere, Damián López</i>	
<i>OPERAS_{CC}</i> : An Instance of a Formal Framework for MAS Modeling Based on Population P Systems	438
<i>Ioanna Stamatopoulou, Petros Kefalas, Marian Gheorghe</i>	
Author Index	453

