

# **The 14<sup>th</sup> International Conference on Membrane Computing CMC14**

**20<sup>th</sup> August – 23<sup>rd</sup> August 2013**

**Institute of Mathematics and Computer Science of the Academy of Sciences,  
Chisinau, Moldova**

## **PROGRAM**

**Tuesday 20 August**

**09.00 – 09.30 Registration**

### **Common session of CMC14 and IIS 2013**

**09.30 Opening Session (chairs Svetlana Cojocaru and Yurii Rogozhin)**

10.00 Jozef Gruska: New vision and future of informatics (invited talk)

**11.00 – 11.30 Coffee break**

11.30 Gheorghe Păun: Some open problems about catalytic, numerical, and spiking neural P systems (invited talk)

12.30 Dan Tufiş, Radu Ion, Ştefan Daniel Dumitrescu: Wiki-Translator: Multilingual Experiments for In-Domain Translations (invited talk)

**13.30 – 15.00 Lunch**

15.00 – 17.30 Defense by Artiom Alhazov of Doctor habilitation thesis “Small abstract machines”

**18.00 – Conference dinner**

## Wednesday 21 August

### Morning session (chair Petr Sosík)

09.00 Marian Gheorghe, Florentin Ipate: Kernel P systems – A survey (invited talk)

10.00 Alberto Leporati, Giancarlo Mauri, Antonio E. Porreca, Claudio Zandron: Enzymatic numerical P systems using elementary arithmetic operations

10.30 Raluca Lefticaru, Ciprian Dragomir, Florentin Ipate, Savas Konur, Laurențiu A. Mierlă: Model checking kernel P systems

### 11.00 – 11.30 Coffee break and poster presentation

11.30 Bogdan Aman, Gabriel Ciobanu: Behavioural equivalences in real-time P systems

12.00 Gabriel Ciobanu, Dragos Sburlan: Causal sequences and indexed multisets

12.15 Alberto Leporati, Lyudmila Burtseva: A quantum inspired UREM P system for solving a linguistic problem

12.30 Rudolf Freund: Informal talks

13.00 Informal talks – Discussions

### 13.10 – 14.30 Lunch

### Afternoon session (chair Marian Gheorghe)

14.30 Alberto Leporati: Computational complexity of P systems with active membranes (invited talk)

15.30 Sergiu Ivanov, Sergey Verlan: About one-sided one-symbol insertion-deletion P systems

16.00 Erzsébet Csuhaj-Varjú, György Vaszil: On counter machines versus dP automata

16.30 Radu Nicolescu, Florentin Ipate, Huiling Wu: Towards high-level P systems programming using complex objects – Part I

### 17.00 – 17.30 Coffee break

17.30 Iulia T. Banu-Demergian, Gheorghe Ștefănescu: The geometric membrane structure of finite interactive systems scenarios

18.00 Bogdan Aman, Gabriel Ciobanu: Expressing active membranes by using priorities, catalysts and cooperation

18.15 Informal talks – Discussions

## Thursday 22 August

### Morning session (chair Alberto Leporati)

09.00 Petr Sosík: Computational complexity in membrane computing: issues and challenges (invited talk)

10.00 Nestine H. Hernandez, Richelle A. Juayong, Henry Adorna: Solving hard problems in evolution-communication P systems with energy

10.30 Mario J. Pérez-Jiménez, Agustín Riscos-Núñez, Miquel Rius-Font, Luis Valencia-Cabrera: The relevance of the environment on the efficiency of tissue P systems

### 11.00 – 11.30 Coffee break

11.30 Luděk Cienciala, Lucie Ciencialová, Miroslav Langer: Modelling of surface runoff using 2D P colonies

12.00 Adam Obtułowicz: In search of a structure of fractals by using membranes as hyperedges

12.30 Tamás Mihálydeák, Zoltán Ernő Csajbók, Péter Takács: Communication rules working in generated membrane boundaries

13.00 Zsolt Gazdag: Solving SAT by P systems with active membranes in linear time in the number of variables

### 13.30 – 15.00 Lunch

### 15.00 – Social program

## Friday 23 August

### Morning session (chair Erzsébet Csuhaj-Varjú)

09.00 Sergey Verlan: Using the formal framework for P systems (invited talk)

10.00 Artiom Alhazov, Svetlana Cojocaru, Alexandru Colesnicov, Ludmila Malahov, Mircea Petic: A P system for annotation of Romanian affixes

10.30 Alberto Leporati, Luca Manzoni, Antonio E. Porreca: Flattening and simulation of asynchronous divisionless P systems with active membranes

11.00 Informal talks – Discussions

**11.10 – 11.30 Coffee break**

### Final session (chair Gheorghe Păun)

11.30 Rudolf Freund: Purely catalytic P systems: two catalysts can be sufficient for computational completeness

12.00 Alex Ciobanu, Florentin Ipate: Using big data technologies with P systems

12.30 Miklós Fésűs, György Vaszil: Chemical programming and membrane systems

12.45 Petr Sosík: A catalytic P system with two catalysts generating a non-semilinear set

13.00 Informal talks – Discussions

13.10 Best paper award

13.20 Presentation of CMC15

**13.40 – 15.00 Lunch**