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11th International Conference, CMC 2010
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Revised Selected Papers

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Preface

This volume contains a selection of papers presented at the 11th International Conference on Membrane Computing (CMC11, `http://cmc11.uni-jena.de`) which took place in Jena, Germany, during August 24–27, 2010.

The first three workshops on membrane computing were organized in Curtea de Argeş, Romania – they took place in August 2000 (with the proceedings published in *Lecture Notes in Computer Science*, volume 2235), in August 2001 (with a selection of papers published as a special issue of *Fundamenta Informaticae*, volume 49, numbers 1–3, 2002), and in August 2002 (with the proceedings published in *Lecture Notes in Computer Science*, volume 2597). The next six workshops were organized in Tarragona, Spain (in July 2003), Milan, Italy (in June 2004), Vienna, Austria (in July 2005), Leiden, The Netherlands (in July 2006), Thessaloniki, Greece (in June 2007), and Edinburgh, UK (in July 2008), with the proceedings published in *Lecture Notes in Computer Science*, by Springer, as volumes 2933, 3365, 3850, 4361, 4860, and 5391, respectively. The 10th workshop returned to Curtea de Argeş in August 2009 (LNCS volume 5957).

From then on, the workshop became a conference and the series of meetings on membrane computing continues as the Conference on Membrane Computing, with the 2010 edition, CMC11, held in Jena, Germany.

The invited speakers for CMC11 were: Gabriel Ciobanu (Iasi, Romania), Peter Dittrich (Jena, Germany), Marian Gheorghe (Sheffield, UK), Martin Kutrib (Gießen, Germany), Maurice Margenstern (Metz, France), and Gheorghe Păun (Bucharest, Romania, and Seville, Spain). Extended abstracts of these talks are included in this volume. Moreover, the CMC11 and Jena Life Science Forum 2010 (JLSF2010) audiences enjoyed the opportunity to listen to two joint keynote presentations delivered by Gheorghe Păun (Bucharest, Romania and Seville, Spain), from CMC11, and Peter Stadler (Leipzig, Germany), from JLSF2010.

This volume also incorporates a selection of 23 accepted papers. Each of them was subject of at least three referee reports. The Program Committee consisted of 21 members: Artiom Alhazov (Hiroshima, Japan), Gabriel Ciobanu (Iasi, Romania), Erzsebet Csuhaj-Varju (Budapest, Hungary), Gabi Escuela (Jena, Germany), Rudolf Freund (Vienna, Austria), Pierluigi Frisco (Edinburgh, UK), Marian Gheorghe (Sheffield, UK) – Chair, Thomas Hinze (Jena, Germany) – Co-chair, Oscar H. Ibarra (Santa Barbara, USA), Vincenzo Manca (Verona, Italy), Maurice Margenstern (Metz, France), Giancarlo Mauri (Milan, Italy), Van Nguyen (Adelaide, Australia), Marion Oswald (Budapest, Hungary), Linqiang Pan (Wuhan, China), Gheorghe Păun (Bucharest, Romania and Seville, Spain), Mario J. Perez-Jimenez (Seville, Spain), Dario Pescini (Milan, Italy), Francisco J. Romero-Campero (Nottingham, UK), Monika Sturm (Dresden, Germany), and Sergey Verlan (Paris, France). It was assisted in the selection

process by seven additional reviewers: Oana Agrigoroaiei (Iasi, Romania), Christian Bodenstein (Jena, Germany), Paolo Cazzaniga (Milan, Italy), Alberto Leporati (Milan, Italy), Antonio E. Porreca (Milan, Italy), Sara Woodworth (Amgen in Thousand Oaks, USA), and Claudio Zandron (Milan, Italy).

The Organizing Committee was constituted by Jörn Behre, Gabi Escuela, Thomas Hinze – Chair, Thorsten Lenser, and Kathrin Schowtka (Secretary).

Since the meeting became a conference, its structure was modified quite considerably. First, three international satellite workshops were organized: The 4th Workshop on Membrane Computing and Biologically Inspired Process Calculi (MeCBIC), the Second Workshop on Non-Classical Models of Automata and Applications (NCMA), and the new Workshop on Applications of Membrane Computing, Concurrency and Agent-Based Modeling in Population Biology (AMCA-POP). Second, a software demo session was included in the program, with the intention of becoming a platform allowing participants to share computer programs and tools applicable and useful in the field of membrane computing. Third, a poster session took place, providing an opportunity of attracting presentations of late-breaking results from young researchers and students new in the field. Finally, the Best Contribution Award, consisting of a travel grant, was given for the first time. Its recipient, identified by the vote of all CMC11 participants, was Pierluigi Frisco (Edinburgh, UK).

We gratefully acknowledge funding for CMC11 from the German Research Foundation (grant HI801/3-1), and additional financial support provided by the Jena Centre for Bioinformatics (JCB). Furthermore, we thank the administration of the Friedrich Schiller University Jena for the perfect infrastructure made available to CMC11, and for the extensive assistance in many issues related to CMC11. Finally, we express our gratitude to the "UniverCity" of Jena for providing special rates for accomodation to CMC11 participants.

The work of G. Păun in editing this volume was supported by Proyecto de Excelencia con Investigador de Reconocida Valía, de la Junta de Andalucía, grant P08 – TIC 04200.

The editors warmly thank the Program Committee, the invited speakers, the authors of the submitted papers, the reviewers, and all the participants. Special thanks are due to Springer for the pleasant cooperation in the timely production of this volume.

October 2010

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Gheorghe Păun
Grzegorz Rozenberg
Arto Salomaa

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