

JOURNAL PUBLICATIONS

1. M. Gheorghe, F. Ipate, S. Konur, M. I. Niculescu, G. Zhang: [P Systems and X-Machines – A Survey](#), *International Journal of Unconventional Computing*, in press, 2026.
2. M. Gheorghe, F. Ipate, K. Kannan, S. Konur, L. Kuppusamy, R. Lefticaru, A. Mahendran, M. I. Niculescu: [Spiking neural P systems and kernel P systems](#), *Journal of Membrane Computing*, 7(4): 437-459, 2025.
3. M.-I. Plesa, M. Gheorghe, F. Ipate: [Neural Key Agreement Protocol with Extended Security](#), *Applied Sciences*, 15(23): 12746, 2025.
4. M.-I. Plesa, M. Gheorghe, F. Ipate, G. Zhang: [A Federated Learning Protocol for Spiking Neural Membrane Systems](#), *International Journal of Neural Systems*, 34(12): 2450062, 2024.
5. M.-I. Plesa, M. Gheorghe, F. Ipate, G. Zhang: [Applications of spiking neural P systems in cybersecurity](#), *Journal of Membrane Computing*, 6(4): 310–317, 2024.
6. R. T. Bobe, M. Gheorghe, F. Ipate, I.-M. Niculescu: [A test-driven methodology for designing robot controllers and simulators using enzymatic numerical P system models](#), *Simulation: Transactions of the Society for Modeling and Simulation International*, 2024.
7. F. Ipate, I.-M. Niculescu, R. Lefticaru, S. Konur, M. Gheorghe: [A model learning based testing approach for kernel P systems](#), *Theoretical Computer Science*, 965, 113975, 2023.
8. M.-I. Plesa, M. Gheorghe, F. Ipate, G. Zhang: [A key agreement protocol based on spiking neural P systems with anti-spikes](#), *J. Membr. Comput.*, 4(4): 341-351, 2022.
9. F. Ipate, M. Gheorghe: [A model learning based testing approach for spiking neural P systems](#), *Theoretical Computer Science*, 924, 1-16, 2022.
10. F. Ipate, M. Gheorghe, R. Lefticaru: [Fundamental results for learning deterministic extended finite state machines from queries](#), *Theoretical Computer Science*, 862, 160-173, 2021.
11. S. Konur, L. Mierla, F. Ipate, M. Gheorghe: [kpbworkbench: A software suit for membrane systems](#), *SoftwareX*, 11: 100407, 2020.

12. A. Turlea, M. Gheorghe, F. Ipate, S. Konur: [Search-based testing in membrane computing](#), *J. Membr. Comput.*, 1(4): 241-250, 2019.
13. M. Gheorghe, R. Ceterchi, F. Ipate, S. Konur, R. Lefticaru: [Kernel P Systems: From Modelling to Verification and Testing](#), *Theoretical Computer Science*, 724, 45-60, 2018.
14. T. Stoenescu, A. Stefanescu, S. Predut, F. Ipate: [Binary Analysis based on Symbolic Execution and Reversible x86 Instructions](#), *Fundamenta Informaticae*, 153(1-2), 105-124, 2017.
15. S. N. Krishna, M. Gheorghe, E. Cshaj-Varju, F. Ipate, R. Ceterchi: [Further Results on Generalised Communicating P Systems](#), *Theoretical Computer Science*, 701, 146-160, 2017.
16. M. Gheorghe, F. Ipate, S. Konur: [Testing Based on Identifiable P Systems Using Cover Automata and X-Machines](#), *Information Sciences*, 372, 565-578, 2016.
17. F. Ipate, D. Dranidis: [A unified integration and component testing approach from deterministic stream X-machine specifications](#), *Formal Aspects of Computing*, 28(1), 1-20, 2016.
18. X. Wang, G. Zhang, F. Neri, T. Jiang, J. Zhao, M. Gheorghe, F. Ipate, R. Lefticaru: [Design and implementation of membrane controllers for trajectory tracking of nonholonomic wheeled mobile robots](#), *Integrated Computer-Aided Engineering*, 23(1), 15-30, 2016.
19. X. Wang, G. Zhang, J. Zhao, H. Rong, F. Ipate, R. Lefticaru: [A Modified Membrane-Inspired Algorithm Based on Particle Swarm Optimization for Mobile Robot Path Planning](#), *International Journal of Computers, Communications and Control*, 10(5), 732-745, 2015.
20. S. Konur, M. Gheorghe, C. Dragomir, L. Mierla, F. Ipate, N Krasnogor: [Qualitative and Quantitative Analysis of Systems and Synthetic Biology Constructs using P Systems](#), *ACS Synthetic Biology*, 4(1), 83-92, 2015.
21. F. Ipate, A. Stefanescu, I. Dinca: [Model Learning and Test Generation Using Cover Automata](#), *The Computer Journal*, 58(5), 1140-1159, 2015.
22. G. Zhang, C. Liu, M. Gheorghe, F. Ipate, X. Wang: [QEAM: An Approximate Algorithm Using P Systems with Active Membranes](#), *International Journal of Computers, Communications and Control*, 10(2), 263-279, 2015.
23. M. Gheorghe, F. Ipate, S. Konur: [Solutions to the Subset Sum and Partition Problems Using Kernel P Systems](#), *Annals of Bucharest University, Computer Science*, Vol. LXII Nr. 2, 37-46, 2015.

24. S. Konur, M. Gheorghe, C. Dragomir, F. Ipate, N. Krasnogor: [Conventional Verification for Unconventional Computing: a Genetic XOR Gate Example](#), *Fundamenta Informaticae*, 134(1-2), 97-110, 2014.
25. I.M. Niculescu, M. Gheorghe, F. Ipate, A. Stefanescu: [From Kernel P Systems to X-Machines and FLAME](#), *Journal of Automata, Languages and Combinatorics*, 19(1-4), 239-250, 2014.
26. M. Gheorghe, F. Ipate, R. Lefticaru, M. J. Perez-Jimenez, A. Turcanu, L. V. Cabrera, M. Garcia-Quismondo, Laurentiu Mierla: [3-Col problem modelling using simple kernel P systems](#), *International Journal of Computer Mathematics*, 90(4), 816-830, 2013.
27. A. Ciobanu, F. Ipate: [P System Testing with Parallel Simulators - a Survey](#), *Scalable Computing: Practice and Experience* 14(3), 2013.
28. F. Zhou, G. Zhang, X. Huang, J. Cheng, M. Gheorghe, F. Ipate, R. Lefticaru: [A Novel Membrane Algorithm Based on Particle Swarm Optimization for Solving Broadcasting Problems](#), *Journal of Universal Computer Science*, 18(13), 1821-1841, 2012.
29. F. Ipate: [Learning Finite Cover Automata from Queries](#), *Journal of Computer and System Sciences*, 78(1): 221-244, 2012.
30. F. Ipate, R. Lefticaru, C. Tudose: [Formal verification of P systems using SPIN](#), *International Journal of Foundations of Computer Science*, 22(1), 133-142, 2011.
31. R. Lefticaru, M. Gheorghe, F. Ipate: [An empirical evaluation of P system testing techniques](#), *Natural Computing*, 10(1), 151-165, 2011.
32. R. Lefticaru, C. Tudose, F. Ipate: Towards Automated Verification of P Systems Using Spin, *International Journal of Natural Computing Research*, 2(3), 1-12, 2011.
33. F. Ipate, M. Gheorghe, R. Lefticaru: [Test generation from P systems using model checking](#), *Journal of Logic and Algebraic Programming*, 79 (6), 350-362, 2010.
34. F. Ipate: [Bounded Sequence Testing from Deterministic Finite State Machines](#), *Theoretical Computer Science*, 411(16-18), 1770-1784, 2010.
35. R. Lefticaru, F. Ipate, M. Gheorghe: [Model Checking Based Test Generation from P Systems Using P-Lingua](#), *Romanian Journal of Information Science and Technology*, 13(2), 153-168, 2010.
36. F. Ipate, M. Gheorghe: [Finite state based testing of P systems](#), *Natural Computing*, 8(4), 833-846, 2009.

37. F. Ipate: [Test Selection for Hierarchical and Communicating Finite State Machines](#), *The Computer Journal*, 52(3), 334-347, 2009.
38. F. Ipate, M. Gheorghe: [Mutation Based Testing of P Systems](#), *International Journal of Computers, Communication and Control*, IV(3), 2009.
39. F. Ipate, M. Gheorghe: [Testing Non-deterministic Stream X-machine Models and P systems](#), MecBic 2008, in *Electronic Notes in Theoretical Computer Science*, 227, 113-126, 2009.
40. T. Balanescu, M. Gheorghe, F. Ipate: Combined power of X-machines and P systems, *Annals of Bucharest University, Computer Science*, Vol. LVIII, 35-48, 2009.
41. F. Ipate, M. Holcombe: [Testing data processing-oriented systems from stream X-machine models](#), *Theoretical Computer Science*, 403(2-3), 176-191, 2008.
42. R. Hierons, F. Ipate: [Testing a deterministic implementation against a non-controllable non-deterministic stream X-machine](#), *Formal Aspects of Computing*, 20: 597-617, 2008.
43. F. Ipate, R. Lefticaru: [Genetic Model based Testing: a Framework and a Case Study](#), *Romanian Journal of Information Science and Technology*, 11(3), 209-227, 2008.
44. F. Ipate: [Testing against a Non-Controllable Stream X-machine using State Counting](#), *Theoretical Computer Science*, 353(1-3), 291-316, 2006.
45. K. Bogdanov, M. Holcombe, F. Ipate, L. Seed, S. Vanak: [Testing Methods for X-machines: a review](#), *Formal Aspects of Computing*, 18(1), 3-30, 2006.
46. F. Ipate: [On the Minimality of Finite Automata and Stream X-machines for Finite Languages](#), *The Computer Journal*, 48(2), 157-167, 2005.
47. F. Ipate, T. Balanescu: [Refinement in Finite State Machine Testing](#), *Fundamenta Informaticae*, 64(1-4), 191-203, 2005.
48. F. Ipate, M. Holcombe: [Complete Testing from a Stream X-machine Specification](#), *Fundamenta Informaticae*, 64(1-4), 205-216, 2005.
49. F. Ipate: [Complete Deterministic Stream X-machine Testing](#), *Formal Aspects of Computing*, 16(4), 374-386, 2004.
50. T. Balanescu, F. Ipate: The Wp method for Partially Specified Deterministic Finite State Machines, *Annals of Bucharest University, Computer Science*, LIII(1), 47-60, 2004.

51. F. Ipate: [On the Minimality of Stream X-Machines](#), *The Computer Journal*, 46(3), 295-306, 2003
52. F. Ipate, M. Gheorghe, M. Holcombe: [Testing \(Stream\) X-machines](#), *Applicable Algebra in Engineering, Communication and Computing*, 14(3), 217-237, 2003
53. T. Balanescu, M. Gheorghe, F. Ipate, M. Holcombe: [Formal Black Box Testing for Partially Specified Deterministic Finite State Machines](#), *Foundations of Computing and Decision Sciences*, 28 (1), 17-28, 2003
54. F. Ipate, T. Balanescu, P. Kefalas, M. Holcombe, G. Eleftheraki: [A new model of Communicating Stream X-machine Systems](#), *Romanian Journal of Information Science and Technology*, 6(1-2), 165-184, 2003.
55. F. Ipate, M. Holcombe: [Testing Conditions for Communicating Stream X-machine Systems](#), *Formal Aspects of Computing*, 13(6), 431-446, 2002.
56. F. Ipate, M. Holcombe: [An Integrated Refinement and Testing Method for Stream X-Machines](#), *Applicable Algebra in Engineering, Communication and Computing*, 13(2), 67-91, 2002.
57. J. Aguado, T. Balanescu, T. Cowling, M. Gheorghe, M. Holcombe, F. Ipate: [P Systems with Replicated Rewriting and Stream X-machines \(Eilenberg machines\)](#), *Fundamenta Informaticae*, 49, 17-33, 2002.
58. F. Ipate, M. Gheorghe, M. Holcombe, T. Balanescu: A theory of testing for non-deterministic X-machines, *Romanian Journal of Information Science and Technology*, 5(1-2), Romanian Academy, 137-154, 2002.
59. F. Ipate, M. Holcombe: Generating test sets from non-deterministic stream X-machines, *Formal Aspects of Computing*, 12(6), 443-458, 2000.
60. F. Ipate, M. Holcombe: [A method for refining and testing generalised machine specifications](#), *International Journal of Computer Mathematics*, 68, 197-219, 1998.
61. F. Ipate, M. Holcombe: [Specification and testing using generalized machines: a presentation and a case study](#), *Software Testing, Verification and Reliability*, 8, 61-81, 1998.
62. F. Ipate: X-machines: a specification method for software systems (in Romanian), *Informatica Economica*, II(6), Bucharest, 41-46, 1998.
63. F. Ipate, M. Holcombe: [An integration testing method that is proved to find all faults](#), *International Journal of Computer Mathematics*, 63, 159-178, 1997.
64. F. Ipate, M. Holcombe: [Another look at computability](#), *Informatica*, 20 (3), 359-372, 1996

65. M. Fairtlough, M. Holcombe, F. Ipate, C. Jordan, G. Laycock, Z. Duan: Using an X-machine to model a video cassette recorder, *Current issues in electronic modelling*, 3, 141-161, 1995.

REFEREED CONFERENCES

1. R. T. Bobe, M. Gheorghe, F. Ipate, I.-M. Niculescu: [Test-Driven Simulation of Robots Controlled by Enzymatic Numerical P Systems Models](#), *Simulation Tools and Techniques (SIMUtools 2023)*, Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, 519: 56–69, 2024.
2. M.-I. Plesa, M. Gheorghe, F. Ipate: [Private Inference on Layered Spiking Neural P Systems](#), *Bioinspired Systems for Translational Applications: From Robotics to Social Engineering (IWINAC 2024)*, *Lecture Notes in Computer Science*, 14675, 163–172, 2024.
3. R. T. Bobe, F. Ipate, I.-M. Niculescu: [Modelling and Search-Based Testing of Robot Controllers Using Enzymatic Numerical P Systems](#), Working Formal Methods (FROM 2023), *Electronic Proceedings in Theoretical Computer Science*, 389: 1–10, 2023.
4. M.-I. Plesa, M. Gheorghe, F. Ipate: [Privacy-preserving Linear Computations in Spiking Neural P Systems](#), Working Formal Methods (FROM 2023), *Electronic Proceedings in Theoretical Computer Science*, 389: 110-119, 2023.
5. A. Turcanu, F. Ipate: Using the Rodin Platform as a Programming Tool, *Proceedings of International Conference on Information Technology and Applications*, LNNS volume 350, 505–513, 2021.
6. A. Turlea, F. Ipate, R. Lefticaru: [Generating Complex Paths for Testing from an EFSM](#), *QRS Companion*, 242-249, 2018.
7. M. Gheorghe, F. Ipate, R. Lefticaru, A. Turlea: [Testing Identifiable Kernel P Systems Using an X-Machine Approach](#), *Int. Conf. on Membrane*, 142-159, 2018.
8. S.-N. Predut, F. Ipate, M. Gheorghe, F. Campean: [Formal Modelling of Cruise Control System Using Event-B and Rodin Platform](#), *IHPCC/SmartCity/DSS*, 1541-1546, 2018.
9. A. Turlea, F. Ipate, R. Lefticaru: [A Test Suite Generation Approach Based on EFSMs Using a Multi-objective Genetic Algorithm](#), *SYNASC*, 153-160, 2017.

10. R. Lefticaru, M. E. Bakir, S. Konur, M. Stannett, F. Ipate: [Modelling and Validating an Engineering Application in Kernel P Systems](#), *Int. Conf. on Membrane Computing 2017, LNCS*, 183-195, 2017.
11. M. Gheorghe, R. Ceterchi, F. Ipate, S. Konur: [Kernel P Systems Modelling, Testing and Verification - Sorting Case Study](#), *Int. Conf. on Membrane Computing 2016, LNCS*, 233-250, 2016.
12. T. Stoenescu, A. Stefanescu, S. Predut, F. Ipate: [RIVER: A Binary Analysis Framework using Symbolic Execution and Reversible x86 Instructions](#), *21st International Symposium on Formal Methods (FM 2016), LNCS, Springer*, 779-785, 2016.
13. A. Turlea, F. Ipate, R. Lefticaru: [A Hybrid Test Generation Approach based on Extended Finite State Machines](#), in *International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2016)*, 173-180, 2016.
14. M. Gheorghe, S. Konur, F. Ipate, L. Mierla, M. E. Bakir, M. Stannett: [An Integrated Model Checking Toolset for Kernel P Systems](#), *Int. Conf. on Membrane Computing 2015, LNCS*, 153-170, 2015.
15. S. Konur, M. Kiran, M. Gheorghe, M. Burkitt, F. Ipate: [Agent-Based High-Performance Simulation of Biological Systems on the GPU](#), *17th IEEE International Conference on High Performance Computing and Communications, 7th IEEE International Symposium on Cyberspace Safety and Security and 12th IEEE International Conference on Embedded Software and Systems, HPCC/CSS/ICSS 2015*, 84-89, 2015.
16. M. Gheorghe, F. Ipate, L. Mierla, S. Konur: [kPWorkbench: A Software Framework for Kernel P Systems](#), *BWMC 2015*, 179-194, 2015.
17. M. E. Bakir, F. Ipate, S. Konur, L. Mierla, I. Niculescu: [Extended Simulation and Verification Platform for Kernel P Systems](#), *Int. Conf. on Membrane Computing 2014, LNCS*, 158-178, 2014.
18. I. Sakellariou, O. Kurdi, M. Gheorghe, D. Romano, P. Kefalas, F. Ipate, I.M. Niculescu: [Crowd formal modelling and simulation: The Sa'yee ritual](#), *UKCI 2014*, 1-8, 2014.
19. M. E. Bakir, S. Konur, M. Gheorghe, I. Niculescu, F. Ipate: [High Performance Simulations of Kernel P Systems](#), *2014 IEEE International Conference on High Performance Computing and Communications, 6th IEEE International Symposium on Cyberspace Safety and Security, 11th IEEE International Conference on Embedded Software and Systems, HPCC/CSS/ICSS 2014*, 409-412, 2014.

20. F. Ipate, R. Lefticaru, L. Mierla, L. Valencia-Cabrera, H. Han, G. Zhang, C. Dragomir, M. J. Perez-Jimenez, M. Gheorghe: [Kernel P Systems: Applications and Implementations](#), *BIC-TA 2013*, 1081-1089, 2013.
21. M. Gheorghe, F. Ipate, C. Dragomir, L. Mierla, L. Valencia-Cabrera, Manuel Garcia-Quismondo, M. J. Perez-Jimenez: [Kernel P Systems - Version 1](#), *BWMC 2013*, 97-124, 2013.
22. M. Gheorghe, F. Ipate: [A Kernel P Systems Survey](#), *Int. Conf. on Membrane Computing 2013*, LNCS 8340: 1-9, 2013.
23. A. Ciobanu, F. Ipate: [Implementation of P Systems by Using Big Data Technologies](#), *Int. Conf. on Membrane Computing 2013*, LNCS 8340: 117-137, 2013.
24. C. Dragomir, F. Ipate, S. Konur, R. Lefticaru, L. Mierla: [Model Checking Kernel P Systems](#), *Int. Conf. on Membrane Computing 2013*, LNCS 8340: 151-172, 2013.
25. R. Nicolescu, F. Ipate, H. Wu: [Programming P Systems with Complex Objects](#), *Int. Conf. on Membrane Computing 2013*, LNCS 8340: 280-300, 2013.
26. A. Turcanu, F. Ipate: [Computational properties of two P systems solving the 3-colouring problem](#), in *14th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2012)*, 62-69, 2012.
27. R. Lefticaru, F. Ipate: [An improved test generation approach from extended finite state machines using genetic algorithms](#), in *SEFM 2012 (International Conference on Software Engineering and Formal Methods)*, Lecture Notes in Computer Science 7504 Springer, 293-307, 2012.
28. D. Dranidis, K. Bratanis, F. Ipate: [JSXM: a tool for automated test generation](#), in *SEFM 2012 (International Conference on Software Engineering and Formal Methods)*, Lecture Notes in Computer Science 7504 Springer, 352-366, 2012.
29. F. Ipate, Ciprian Dragomir, R. Lefticaru, Laurentiu Mierla, M. J. Perez-Jimenez: [Using a Kernel P system to solve the 3-Col problem](#), in *Int. Conf. on Membrane Computing 2012 (CMC 2012)*, Proceedings, 243-258, 2012.
30. I. Dinca, F. Ipate, A. Stefanescu: [Model learning and test generation for Event-B decomposition](#), International Symposium on Leveraging Applications, in *ISoLA 2012 (5th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation)*, Lecture Notes in Computer Science 7609 Springer, 539-553, 2012.
31. M. Gheorghe, F. Ipate, C. Dragomir: [A Kernel P System](#), *BWMC12*, Proceedings, 153-170, 2012.

32. I. Dinca, F. Ipate, L. Mierla, A. Stefanescu: [Learn and Test for Event-B - A Rodin Plugin](#), in *ABZ 2012*, 361-364, 2012.
33. F. Ipate, R. Lefticaru, I. Perez-Hurtado, M. J. Perez-Jimenez, C. Tudose: Formal Verification of P Systems with Active Membranes through Model Checking, in *Int. Conf. on Membrane Computing 2011 (CMC 2011)*, Lecture Notes in Computer Science 7184 Springer, 215-225, 2011.
34. X. Huang, G. Zhang, H. Rong, F. Ipate: Evolutionary Design of a Simple Membrane System, in *Int. Conf. on Membrane Computing 2011 (CMC 2011)*, Lecture Notes in Computer Science 7184 Springer, 203-214, 2011.
35. C. Tudose, R. Lefticaru, F. Ipate: [Using Genetic Algorithms and Model Checking for P Systems Automatic Design. Nature Inspired Cooperative Strategies for Optimization](#), in *NICSO 2011*, Studies in Computational Intelligence 387 Springer 285-302, 2011.
36. I. Dinca, A. Stefanescu, F. Ipate, R. Lefticaru, C. Tudose: [Test Data Generation for Event-B Models using Genetic Algorithms](#), in *Proc. of 2nd International Conference on Software Engineering and Computer Systems (ICSECS'11)*, CCIS Series, vol. 181, pp. 76-90. Springer, 2011.
37. A. Stefanescu, F. Ipate, R. Lefticaru, C. Tudose: [Towards Search-Based Testing for Event-B Models](#), in *Proc. of 4th International Workshop on Search-Based Software Testing (SBST'11)*, from ICSTW'11, pp.194-197. IEEE Computer Society, 2011.
38. F. Ipate, R. Nicolescu, I.M. Niculescu, C. Stefan: Synchronization of P Systems with Simplex Channels, *5th Workshop on Membrane Computing and Biologically Inspired Process Calculi (MecBic 2011)*, 57-72.
39. F. Ipate, A. Turcanu: [Modeling, Verification and Testing of P Systems Using Rodin and ProB](#), in *Ninth Brainstorming Week on Membrane Computing*, 209-220, Fenix Editora, Sevilla, 2011.
40. M. Gheorghe, F. Ipate, R. Lefticaru, C. Dragomir: [An integrated approach to P systems formal verification](#), in *Int. Conf. on Membrane Computing (CMC 2010)*, Jena, Germany, August 24-27, 2010. Revised Selected Papers, LNCS 6501 Springer, 226-239, 2011.
41. M. Gheorghe, F. Ipate: [Testing based on P systems - an overview](#), in *Int. Conf. on Membrane Computing (CMC 2010)*, Jena, Germany, August 24-27, 2010. Revised Selected Papers, LNCS 6501 Springer, 3-6, 2011.
42. A. Ciobanu, R. Lefticaru, I. M. Niculescu, F. Ipate: [Tools for P system testing](#), in *Proceedings of the Eleventh International Conference on Membrane*

Computing (CMC11), Jena, Germany, August 2010, pp. 451-454, ProBusiness Verlag, Berlin, 2010.

43. F. Zhou, G. Zhang, H. Rong, M. Gheorghe, J. Cheng, F. Ipate, R. Lefticaru: [A particle swarm optimization based on P systems](#), in *Proceedings of the Sixth International Conference on Natural Computation (ICNC'10)*, Yantai, Shandong, China, August, IEEE Press, 3003-3007, 2010.
44. M. Gheorghe, F. Ipate, C. Dragomir: [Formal Verification and Testing Based on P Systems](#), in *Tenth Workshop on Membrane Computing (WMC10)*, Curtea de Arges, Romania, August 2009, 33-34. Selected, revised papers, in G. Paun et al. (Eds.), LNCS 5957, 54-65, Springer, 2010.
45. R. Lefticaru, F. Ipate, M. Gheorghe, G. Zhang: [Tuning P Systems for Solving the Broadcasting Problem](#), in *Tenth Workshop on Membrane Computing (WMC10)*, Curtea de Arges, Romania, August 2009, 337-354. Selected, revised papers, in G. Paun et al. (Eds.), LNCS 5957, pp. 354-370, Springer, 2010.
46. C. Liu, G. Zhang, H. Liu, M. Gheorghe, F. Ipate: [An Improved Membrane Algorithm for Solving Time-Frequency Atom Decomposition](#), in *Tenth Workshop on Membrane Computing (WMC10)*, Curtea de Arges, Romania, August 2009, 355-368. Selected, revised papers, in G. Paun et al. (Eds.), LNCS 5957, pp. 371-384, Springer, 2010.
47. G. Zhang, C. Liu, M. Gheorghe, F. Ipate: [Solving Satisfiability Problems with Membrane Algorithms](#), in *The Fourth International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA)*, Beijing, China, 16-19 October 29-36, 2009.
48. R. Lefticaru, F. Ipate, C. Tudose: [Automated Model Design using Genetic Algorithms and Model Checking](#), in *4th Balkan Conference in Informatics (BIC 09)*, Thessaloniki, Grece, 17-19 September, 79-84, 2009.
49. M. Gheorghe, F. Ipate: [On testing P systems](#), in *Ninth Workshop on Membrane Computing (WMC9)*, 28-31 July 2008, Edinburgh, UK, Revised Selected and Invited Papers, in *Lecture Notes in Computer Science*, 5391, 204-216, Springer, 2009.
50. R. Lefticaru, F. Ipate: [Search-based Testing using State-based Fitness](#), in *Proceedings of the 2008 IEEE International Conference on Software Testing Verification and Validation Workshop (ICSTW '08)*, 210-, IEEE Computer Society, Washington, DC, USA, 2008.
51. R. Lefticaru, F. Ipate: [A Comparative Landscape Analysis of Fitness Functions for Search-based Testing](#), in *10th International Symposium on Symbolic and*

Numeric Algorithms for Scientific Computing (SYNASC 2009), September 26-29, 2008, Timisoara, Romania, Proceedings. IEEE Computer Society, 2008.

52. F. Ipate, R. Lefticaru: [Functional Search-based Testing from State Machines](#), in *The IEEE International Conference on Software Testing Verification and Validation (ICST 2008)*, 9-11 April 2008, Lillehammer, Norway, Proceedings. IEEE Computer Society, 525-528, 2008.
53. F. Ipate, R. Lefticaru: [State-based Testing is Functional Testing!](#), in *Testing: Academia and Industry Conference - Practice And Research Techniques (TAIC PART 2007)*, 12-14 September 2007, Windsor, United Kingdom, Proceedings. IEEE Computer Society, 55-64, 2007.
54. F. Ipate: [Class testing from state diagrams using stream X-machine based methods](#), in *J. Grundy, J. Han (Eds.): 18th Australian Software Engineering Conference (ASWEC 2007)*, 10-13 April 2007, Melbourne, Australia, Proceedings. IEEE Computer Society, 245-254, 2007.
55. R. Lefticaru, F. Ipate: [Automatic State-Based Test Generation Using Genetic Algorithms](#), in *9th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2007)* September 26-29, 2007, Timisoara, Romania, Proceedings. IEEE Computer Society, 188-195, 2007.
56. F. Ipate: [Bounded Sequence Testing from Non-deterministic Finite State Machines](#), in *M. U. Uyar, A. Y. Duale, M. A. Fecko (Eds.): Testing of Communicating Systems, 18th IFIP TC6/WG6.1 International Conference, TestCom 2006, New York, NY, USA, May 16-18, 2006, Proceedings*. Lecture Notes in Computer Science 3964 Springer, 55-70, 2006.
57. F. Ipate, T. Balanescu: [Finite State Machine Testing from an OR State Refinement Design](#), *The 13th Conference On Applied and Industrial Mathematics, CAIM*, Pitesti, Romania, in ROMAI J., 1(2), 109-118, 2006.
58. F. Ipate, M. Holcombe: [Using State Diagrams to Generate Unit Tests for Object-Oriented Systems](#), in *H. Baumeister, M. Marchesi, M. Holcombe (Eds.): Extreme Programming and Agile Processes in Software Engineering, 6th International Conference, XP 2005*, Sheffield, UK, June 18-23, 2005, Proceedings. Lecture Notes in Computer Science 3556 Springer, 214-217, 2005.
59. F. Ipate, T. Balanescu: [A Testing Procedure for Deterministic Cover Finite State Machines](#), *The 12th Conference On Applied and Industrial Mathematics, CAIM*, Pitesti, Romania, in ROMAI J., vol. 1(2):115-128, 2005.
60. M. Holcombe, F. Ipate: [Complete Test Generation for Extreme Programming](#), in *J. Eckstein, H. Baumeister (Eds.): Extreme Programming and Agile Processes in Software Engineering, 5th International Conference, XP 2004*, Garmisch-

Partenkirchen, Germany, June 6-10, 2004, Proceedings. Lecture Notes in Computer Science 3092 Springer, 274-277, 2004.

61. T. Balanescu, T. Cowling, M. Gheorghe, M. Holcombe, F. Ipate: [Eilenberg P Systems](#), in G. Paun, G. Rozenberg, A. Salomaa, C. Zandron (Eds.): *Membrane Computing, International Workshop, WMC-CdeA 2002, Curtea de Arges, Romania, August 19-23, 2002, Revised Papers. Lecture Notes in Computer Science 2597*, Springer, 43-57, 2003.
62. F. Ipate, T. Balanescu, G. Eleftherakis: Testing Communicating Stream X-machines, *Proceedings of the 1st Balkan Conference in Informatics*, 161-174, 2003.
63. F. Ipate, T. Balanescu, M. Gheorghe, M. Holcombe: The W-method for refinement of finite state machines, *SoftTest, UK Software Testing Research II*, York, 2-5 September, 2003.
64. F. Ipate: Complete Testing based on Machine Specifications, *Proceedings of the 6th International Symposium of Economic Informatics*, Bucharest, 117-125, 2003.
65. F. Ipate, M. Gheorghe, M. Holcombe, T. Balanescu: Testing non-deterministic (stream) X-machines, in R. Hierons and T. Jeron (Eds.), *Formal Approaches to Testing of Software*, FATES'02, Brno, Czech Republic, August 24, 35-50, 2002.
66. F. Ipate: Two Testing Strategies for Non-Deterministic X-machines, *The 9th Conference On Applied and Industrial Mathematics, CAIM*, Pitesti, Romania, 2001.
67. T. Balanescu, M. Gheorghe, M. Holcombe, F. Ipate: [Testing Collaborative Agents Defined as Stream X-Machines with Distributed Grammars](#), in J Kelemen and P Sosik (Eds), *Advances in Artificial Life, 6th European Conference, ECAL 2001*, Prague, Czech Republic, September 10-14, 2001, Proceedings. Lecture Notes in Computer Science 2159 Springer 2001, 296 -305, 2001.
68. F. Ipate: Refinement of Stream X-machine Specifications, *Proceedings of the 5th International Symposium of Economic Informatics*, Bucharest, 1117-1125, 2001.
69. F. Ipate: A Theory of Testing for X-machines, *The 8th Conference On Applied and Industrial Mathematics, CAIM*, Pitesti, Romania, 115-120, 2000.
70. F. Ipate, M. Popescu: A Z Type Language for Specifying X-Machines, *Proceedings of CITTI*, Constanta, Romania, 82- 88, 2000.
71. F. Ipate: A method for testing non-deterministic X-machines that finds all faults, *The 7th Conference On Applied and Industrial Mathematics, CAIM*, Pitesti, Romania, 107-113, 1999.

72. F. Ipate: Using Hybrid Machines for specifying Hybrid Software Systems, *Proceedings of the 4th International Symposium of Economic Informatics*, Bucharest, 679-686, 1999.
73. F. Ipate: Is software testing effective?, *Proceedings of the 3rd International Symposium of Economic Informatics*, Bucharest, 173-179, 1997.
74. F. Ipate: X-machine Based Testing, *Proceedings of the 10th International Conference on Control Systems and Computer Science*, Vol. 2, Bucharest, 262-272, 1995.
75. M. Holcombe, F. Ipate, A. Grondoudis: Complete Functional Testing of Safety-Critical Systems, *Safety and Reliability in Emerging Control Technologies (A Postprint volume from IFAC Workshop, Daytona Beach, Florida, USA)*, 199-204, 1995.

RESEARCH MONOGRAPH

1. M. Holcombe, F. Ipate: "Correct Systems: Building a Business Process Solution", Springer-Verlag, London, 1998.

BOOK CHAPTERS

1. M. Gheorghe, F. Ipate: [Identifiable Kernel P Systems](#), in *Enjoying Natural Computing*, 130-141, Springer 2018.
2. M. Gheorghe, S. Konur, F. Ipate: [Kernel P Systems and Stochastic P Systems for Modelling and Formal Verification of Genetic Logic Gates](#), in *Advances in Unconventional Computing, Volume 22 of the series Emergence, Complexity and Computation*, 661-675, 2017.
3. A. Turcanu, L. Mierla, F. Ipate, A. Stefanescu, H. Bai, M. Holcombe, S. Coakley: [Modelling and Analysis of E. coli Respiratory Chain](#), in *Applications of Membrane Computing in Systems and Synthetic Biology. Emergence, Complexity and Computation Volume 7*, 247-266, 2014.
4. F. Ipate, M. Holcombe: "Testing non-deterministic X-machines", in C. Martin-Vide & V. Mitran, eds, *Grammars and Automata for String Processing: from Mathematics and Computer Science to Biology, and Back*, Taylor and Francis, London, 151-162, 2003.
5. F. Ipate, M. Gheorghe, M. Holcombe, T. Balanescu: "Testing using X-machine Translations", M. Ito, G. Paun, S. Yu, eds., *Words Semigroups and Transductions*,

Word Scientific Series in Computer Science, World Scientific, Singapore, 211-230, 2001.

BOOKS

1. F. Ipate: "Object-oriented modelling using UML", University of Pitesti Publishing House, 2001 (in Romanian).
2. F. Ipate, M. Popescu: "Database Applications in Oracle8 and Forms6", ALL Publishing House, Bucharest, 2000 (in Romanian).
3. F. Ipate: "Principles of Expert Systems", Sylvi Publishing House, Bucharest 1998 (in Romanian).