# Milovan Šuvakov

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## Education

(1994-1998) High School: "Matematička gimnazija" Belgrade
(1998-2004) University of Belgrade - Department of Physics
(Theoretical Physics, GPA: 9.63)
(2004-2005) Graduate school: University of Belgrade - Department of Physics and
Gaseous Electronics Laboratory - Institute of Physics, Belgrade
(Physics of Ionized Gases, GPA: 10.00)
(2005-2009) PhD: Jozef Stefan Institute, Ljubljana - PhD student on Marie Curie
Training and Research Network, EU Project MTRN-CT-2004-005728
"Unifying Principles in Non-Equilibrium Pattern Formation"

## Teaching Activities

(1999) "Matematička gimnazija" - Belgrade (Preparation classes for IPhO)
(1998-) Petnica Science Center - Teaching Assosiate
(2004-2006) Publishing activities in "Mladi fizičar" ("Young Physicist", a high school physics magazine)

## Research Interests

1 Monte Carlo Simulations of charge transport in ionized gases
2 Numerical modeling of breakdown voltages in multipactor and RF discharges
3 Numerical simulations of charge transport in cellular nanocrystal structures
4 Complex networks: models and topological properties

## Awards and Fellowships

1997 International Physics Olympiad (Canada) - Bronze Medal
1998 International Physics Olympiad (Iceland) - Silver Medal
2002 Royal Family of Serbia (Karadjordjević) Scholarship

## Computer Skills

Programming languages: C++, Pascal, Python, Assembler
Platforms: Linux and Windows

## Personal

Born in Belgrade, Serbia on $28^{th}$ July, 1979.
Citizen of $Serbia$.
Hobies: beekeeping, electronics.

## Publications

1. A. Stannard, M. O. Blunt, E. Pauliac-Vaujour, C. P. Martin, P. Moriarty, I. Vancea, U. Thiele, M. Šuvakov and B. Tadić, *Patterns and Pathways in Nanoparticle Self-Organization*, Oxford Handbook of Nanoscience and Technology: Volume 1: Basic Aspects, Oxford University Press (Feb 28th 2010)

2. M. Šuvakov and B. Tadić, *Modelling Collective Charge Transport in Nanoparticle Assemblies*, Topical Review, Journal of Physics: Condensed Matter, in review (2010)

3. J. P. Marler, Z. Lj. Petrović, A. Banković, S. Dujko, M. Šuvakov, G. Malović, and S. J. Buckman *Positron transport: The plasma-gas interface*, Physics of Plasmas **16** (2009) 057101

4. V. Dmitrasinovic, T. Sato, M. Šuvakov, *Smooth crossover transition from the Delta-string to the Y-string three-quark potential*, Phys Rev. D **80** 5 (2009) 054501

5. M. Šuvakov, *Models of Self-Assembled Functional Materials*, **PhD thesis**, Supervisor: Bosiljka Tadić, Jozef Stefan International Postgraduate School, Ljubljana, Slovenia (April 9th 2009)

6. M. Šuvakov and B. Tadić, *Collective Charge Fluctuations in Single-Electron Processes on Nano-Networks*, Journal of Statistical Mechanics - Theory and Experiment, Article Number: P02015 Published: FEB 2009

7. V. Dmitrašinović, T. Sato, and M. Šuvakov, *Low-lying spectrum of the Y-string three-quark potential using hyper-spherical coordinates*, Eur. Phys. J. C **62** (2009) 383-397

8. B. Dakić, M. Šuvakov, T. Paterek, and Č. Brukner, *Efficient Hidden-Variable Simulation of Measurements in Quantum Experiments*, Phys. Rev. Lett. **101** (2008) 190402

9. M. Šuvakov, Z. Lj. Petrović, J. P. Marler, S. J. Buckman, R. E. Robson, and G. Malović, *Monte Carlo simulation of non-conservative positron transport in pure argon*, New Journal of Physics **10** (2008) 053034

10. Milovan Šuvakov, *Physics Based Algorithms for Sparse Graph Visualization*, ICCS 2008, Lecture Notes in Computer Science, Springer Berlin, **5102**, pp. 593-600 (2008)

11. Z. Lj. Petrović, M. Šuvakov, Ž. Nikitović, O. Šašić, J. Jovanović, G. Malović and V. Stojanović, *Kinetic phenomena in charged particle transport in gases, swarm parameters and cross section data*, Plasma Sources Science and Technology **16** (2007) S1-S12

12. Milovan Šuvakov and Bosiljka Tadić, *Simulation of the Electron Tunneling Paths in Network of Nano-particle Films*, ICCS 2007, Y. Shi et al., Eds., Lecture Notes in Computer Science, Springer Berlin, **4488**, Part II, pp. 641-648 (2007)

13. B. Tadić and M. Šuvakov, *Multiscale Network Models of Nano-Materials: Structure and Dynamics* , Symposium Condensed-Matter Physics SFKM2007, Vrsac, Serbia, 16-20 September 2007.

14. M. O. Blunt, M. Šuvakov, F. Pulizzi, C. P. Martin, E. Pauliac-Vaujour, A. Stannard, A. W. Rushforth, B. Tadić, and P. Moriarty, *Charge Transport in Cellular Nanoparticle Networks: Meandering through Nanoscale Mazes*, Nano Letter **7**, pp. 855-860 (2007)

15. Milovan Šuvakov, *Kinetics phenomenon in electron and positron transport through gases*, Master Thesis, Supervisor: Zoran Petrović, University of Belgrade, Department of Physics (September 2006)

16. M. Šuvakov and B. Tadić, *Transport Processes on Homogeneous Planar Graphs with Scale-Free Loops*, Physica A **372** pp. 354 (2006)

17. M. Šuvakov and B. Tadić, *Topology of cell-aggregated planar graphs*, ICCS 2006, V.N. Alexandrov et al., Eds., Lecture Notes in Computer Science, Springer Berlin, **3993**, Part III, pp. 1098-1105 (2006)

18. Milovan Šuvakov, Zoran Ristivojević, Zoran Lj. Petrović, Saša Dujko, Zoran M. Raspopović, Nikolay A. Dyatko, Anatoly P. Napartovich, *Spatial Profiles of Electron Swarm Properties and Explanation of Negative Mobility of Electrons*, IEEE Trans. Plasma. Sci. **33** (2005) 532-533

19. Milovan Šuvakov, *Anisotropy and Thermal Effects in Monte Carlo Simulations of Electron Motion in Gases*, Diploma Thesis, Supervisor: Zoran Petrović, University of Belgrade, Department of Physics (March 2004)

## Conferences

1. Surface Science Summer School, Nottingham, UK, 21-26 August 2005.

2. Self-Assembly & Properties of Complex Patterns, Portorož, Slovenia, 3-6 September 2006
   Talk: *Single Electron Transport on Cellular Networks*

3. International Conference on Computational Science 2006 (ICCS2006), Reading, UK, 28-31 May 2006.
   Talk: *Topology of cell-aggregated planar graphs.*

4. Workshop on "Nanoscience & Nanotechnologies", Thesaloniki, Greece, 10-12 July 2006
   Poster: *Single Electron Transport in Planar Networks Of Small Metallic Dots*

5. MTRN Project PATTERNS: Mid-Term Review, Berlin, January 16-17, 2007
   Talk: *Numerical Modeling of Assembly & Conduction: Single Electron Tunneling in Cellular Networks*

6. 23rd IUPAP International Conference on Statistical Physics (StatPhys2008), Genova, Italy, 9-13 July 2007.
   Poster: *Emergent Patterns of Ant Walk with Reflections*

7. International Conference of Computational Methods in Sciences and Engineering, Corfu, Greece, 25-30 September 2007.
   Poster: *Graph Visualization Based on Physical Models*

8. Pattern formation: Self-organization versus Self-assembly? - International workshop, Dresden, Germany, 10-12 December 2007.
   Poster: *Numerical Modeling of Biorecognition Assembly and Study* of Charge Transport Through Nanoparticle Films

9. Bio-inspired Complex Networks in Science and Technology: From Topology to Structure and Dynamics, Dresden, Germany, 14-31 April, 2008.
   Poster: *Numerical Modeling of Biorecognition Assembly and Topology of Emergent Aggregates*

10. Workshop Network, Complexity & Competition, 2-4 May 2008.
    Poster: *Networks of Aggregated Colloids with Bio-Recognition Binding*

11. International Conference on Computational Science 2008 (ICCS2008), Krakow, Poland, June 23-25, 2008.
    Talk: *Topology of cell-aggregated planar graphs*

12. Self-assembly and Self-organisation at Surface and Interfaces, Selwyn College, University of Cambridge, 10-12 December 2008
    Poster: *Study of Charge Transport Fluctuations in Nanoparticle Films and Numerical Modeling of Biorecognition Assembly*