

Dr. Alexander OLEINICK

List of all peer-reviewed articles

in Ukrainian and Russian Journals:

1. I.B. Svir, A.I. Oleinick, R.G. Compton. The optimisation of the simulation of diffusional transport to a microsphere electrode and its application to electrogenerated chemiluminescence. *Radioelectronics and Informatics* 1, **2000**, p. 28-32.
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3. I.B. Svir, A.I. Oleinick. Numerical solution of the microspherical problem. *Management Information Systems and Devices* 116, **2001**, p. 39-44.
4. I.B. Svir, A.I. Oleinick, R.G. Compton. Ring problem via spherical co-ordinates. Application to electrogenerated chemiluminescence. *Management Information Systems and Devices* 115, **2001**, p. 128-133.
5. A.N. Slipchenko, A.I. Oleinick. Finite element solution of the semi-infinite diffusion problem. Adaptive grid construction based on the analytical solution. *Management Information Systems and Devices* 122, **2003**, p. 135-140.
6. A.I. Oleinick, I. Svir. Application of the conformal mapping to the simulation of the diffusional ECL processes at double hemicylindrical electrodes. *Management Information Systems and Devices* 123, **2003**, p. 87-93.
7. A. Oleinick, C. Amatore, I. Svir. Simulation of the double hemicylinder electrode system through conformal mapping. Application to steady-state electrogenerated chemiluminescence. *Radioelectronics and Informatics* 4, **2003**, p. 35-38.
8. I.B. Svir', A.I. Olejnik, R.G. Kompton. Solution of problems of an annular microelectrode with spherical coordinates. The application to near-stationary voltammetry with linear sweep. *Elektrokhimiya* (Russia) 39/2, **2003**, p. 177-181.
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11. O.V. Klymenko, A.I. Oleinick, C.A. Amatore, I.B. Svir. Simulation of the diffusion-convection processes in microfluidic channels. *Radioelectronics and Informatics* 1, **2005**, p. 47-53.
12. A.I. Oleinick, C.A. Amatore, I.B. Svir. Mathematical models and numerical simulation of diffusion-reaction problems of brain-chemistry. *Radioelectronics and Informatics* 3, **2005**, p. 18-22.
13. A.I. Oleinick, A.G. Drogovozov, C.A. Amatore, I.B. Svir. Calculation of ECL emission intensity measured using confocal microscope. *Radioelectronics and Informatics* 3, **2005**, p.23-28.
14. A.I. Oleinick. Construction of the optimal quasi-conformal mapping for the numerical simulation of diffusion at a microdisk electrode. *Radioelectronics and Informatics* 1, **2006**, p. 21-26.
15. A.I. Oleinick. Mathematical modelling of diffusion-reaction inside mesoporous spherical nanoparticles. Analytical solution for the case of extremely fast irreversible adsorption. *Radioelectronics and Informatics* 4, **2007**, p. 18-21.
16. O.V. Klymenko, A. Oleinick, C. Amatore, I. Svir. A new approach for the determination of a stellate neuron activity function in rat's brain. *J. Phys. Chem.* (Russia) 82/9, **2008**, pp. 1608-1613.
17. A. Oleinick. Numerical simulation of diffusion processes at recessed microdisc electrode array systems. *Management Information Systems and Devices* 145, **2008**, p. 29-39.

18. A.I. Oleinick. Brownian motion simulation of vesicle actin tail formation. *Bionics of Intelligence* 1, **2009**, p. 82-85.
19. A. Oleinick. Mathematical modelling of neurotransmitter diffusion from a vesicle at fixed opening angles. *Bionics of Intelligence* 2, **2009**, p. 106-110.

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20. I.B. Svir, A.I. Oleinick. The electrogenerated chemiluminescence kinetics at a microdisc. *J. Electroanal. Chem.* 499, **2001**, p. 30-38.
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24. I.B. Svir, A.I. Oleinick, R.G. Compton. Dual microband electrodes: current distributions and diffusion layers “titrations”. Implications for electroanalytical measurements. *J. Electroanal. Chem.* 560, **2003**, p. 117-126.
25. C. Amatore, A. Oleinick, I. Svir Theory of transient and steady-state ECL generation at double-hemicylinder assemblies using conformal mapping and simulations. *Electrochem. Commun.* 5, **2003**, p. 989-994.
26. C. Amatore, A. Oleinick, I. Svir. Simulation of the diffusion at microring electrodes through conformal mapping. *J. Electroanal. Chem.* 564, **2004**, p. 245-260. [Invited article](#).
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30. I. Svir, A. Oleinick, K. Yunus, A.C. Fisher, J.D. Wadhawan, T.J. Davies, R.G. Compton. Theoretical and experimental study of the ECE mechanism at ring electrodes. *J. Electroanal. Chem.* 578, **2005**, p. 289-299.
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32. A.I. Oleinick, C. Amatore, M. Guille, S. Arbault, O.V. Klymenko, I. Svir. Modelling release of nitric oxide in slice of rat's brain: describing stimulated functional hyperemia with diffusion-reaction equations. *Math. Med. Biol.* 23, **2006**, p. 27-44.
33. C. Amatore, A.I. Oleinick, I. Svir. Construction of optimal quasi-conformal mappings for the 2D numerical simulation of diffusion at microelectrodes. Part 1. Principle of the method and its application to the inlaid disk microelectrode. *J. Electroanal. Chem.* 597, **2006**, p. 69-76.
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35. C. Amatore, A. Oleinick, I. Svir, N. da Mota, L. Thouin. Theoretical modeling and optimization of the detection performance: a new concept for electrochemical detection of proteins in microfluidic channels. *Nonlinear Analysis: Modelling and Control* 11, **2006**, p. 345-365.
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38. C. Amatore, O.V. Klymenko, A. Oleinick, I. Svir. In situ and on-line monitoring of hydrodynamic flow profiles in microfluidic channels based upon microelectrochemistry: optimisation of channel geometrical parameters for best performance of flow profile reconstruction. *ChemPhysChem* 8, **2007**, p. 1870-1874.
39. A. Oleinick, C. Amatore, O. Klymenko, I. Svir. Mathematical modelling of nitric oxide release caused by exocytosis and determination of a stellate neuron activity function in rat brain. *Nonlinear Analysis: Modelling and Control* 12(3), **2007**, p. 399-408.
40. O. Klymenko, A. Oleinick, C. Amatore, I. Svir. A new approach for the determination of a stellate neuron activity function in rat's brain. *Rus. J. Phys. Chem. A* 82, **2008**, p. 1428-1433. [Invited article](#)
41. C. Amatore, A. Oleinick, O. Klymenko, A. Walcarius, C. Delacote, I. Svir. Theory and simulation of diffusion-reaction into nano- and mesoporous structures. Experimental application to sequestration of mercury(II). *Anal. Chem.* 80, **2008**, p. 3229-3243.
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45. C. Amatore, A. Oleinick, I. Svir. Numerical simulation of diffusion processes at recessed disk microelectrode arrays using the quasi-conformal mapping approach. *Anal. Chem.* 81, **2009**, p. 4397-4405.
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49. C. Amatore, A.I. Oleinick, O.V. Klymenko, I. Svir. Capacitive and solution resistance effects on voltammetric responses at disk microelectrode covered with self-assembled monolayer in the presence of electron hopping. *Anal. Chem.* 81, **2009**, p. 8545-8556.
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61. Y.-T. Li, S.-H. Zhang, X.-Y. Wang, X.-W. Zhang, A.I. Oleinick, I. Svir, C. Amatore, W.-H. Huang. Real-time monitoring of discrete synaptic release events and excitatory potentials within self-reconstructed neuro-muscular junctions. *Angew. Chemie* 54, **2015**, 9313-9318.
62. O. Sliusarenko, A. Oleinick, I. Svir, C. Amatore. Development and validation of an analytical model for predicting chronoamperometric responses of random arrays of micro- and nanodisk electrodes. *ChemElectroChem* 2, **2015**, 1279-1291.
63. S. Majdi, C. Berglund, J. Dunevall, A. Oleinick, C. Amatore, D. Krantz, A. Ewing. Electrochemical Measurements of Optogenetically Stimulated Quantal Amine Release from Single Nerve Cell Varicosities in *Drosophila* Larvae. *Angew. Chemie* 54, **2015**, 13609-13612.
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65. A. Oleinick, R. Hu, B. Ren, Z.Q. Tian, I. Svir, C. Amatore. New Theoretical Model of Neurotransmitter Release during in vivo Vesicular Exocytosis based on a Grainy Biphasic Nano-Structuration of Chromogranins within Dense Core Matrixes, *J. Electrochem. Soc.* 163, **2016**, H3014-H3024. (doi: 10.1149/2.0031604jes)
66. J. Lovrić, N. Najafinobar, J. Dunevall, S. Majdi, I. Svir, A. Oleinick, C. Amatore, A.G. Ewing. On the mechanism of electrochemical vesicle cytometry: chromaffin cell vesicles and liposomes. *Faraday Discuss.*, 193, **2016**, 65-79.

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69. D. He, J. Yan, F. Zhu, Y. Zhou, B. Mao, A. Oleinick, I. Svir, C. Amatore. Enhancing Bipolar Redox Cycling Efficiency of Plane-Recessed Microelectrode Arrays by Adding a Chemically Irreversible Interferent. *Anal. Chem.* 88, **2016**, 8535-8541.
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75. A. Oleinick, I. Alvarez-Martos, I. Svir, E.E. Ferapontova, C. Amatore. Surface heterogeneities matter in fast scan cyclic voltammetry investigations of catecholamines in brain with carbon microelectrodes of high-aspect ratio: dopamine oxidation at conical carbon microelectrodes. *J. Electrochem. Soc.*, 165, **2018**, G3057-G3065. [Invited article to special issue on Brain Electrochemistry.](#)
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77. R. Chen, A. Morteza Najarian, N. Kurapati, R. Balla, A. Oleinick, I. Svir, C. Amatore, R. McCreery, S. Amemiya. Self-Inhibitory Electron Transfer of the Co(III)/Co(II)-Complex Redox Couple at Pristine Carbon Electrode, *Anal. Chem.*, 90, **2018**, 11115-11123.

Book chapters:

1. A. Oleinick, O. Klymenko, I. Svir, C. Amatore. Theoretical insights in ECL in Luminescence in Electrochemistry : Applications in analytical chemistry, physics and biology (F. Miomandre, P. Audebert Eds.), Springer, 2017, 419p. Chapter 7, p. 215-256. ISBN: 3319491350, 9783319491356; doi: 10.1007/978-3-319-49137.