VLADIMIR E. GUTERMAN
2016.04.17

1. Last Positions

Dean of the Chemistry Department, Southern Federal University, since 2011 -
Professor of Electrochemistry Department, Rostov State University, since 2002 - ;
Member of Research Staff, Samsung Advance Institute of Technology (Material and Device Laboratory) 2002.10 – 2005.10;
Associate Professor of Electrochemistry Department, Rostov State University (Russia) 1996 – 2002;
Vice Dean of Chemistry Department of Rostov State University (Russia) (1992-1998).

2. Education and degrees:

1. Diploma (certificate) of Professor of Electrochemistry Department 2010.
2. Diploma of Doctor of Science (Electrochemistry) 2002.
3. Doctor Thesis (Electrochemistry) "Kinetics and phase transformation during electrochemical formation and dissolution of lithium alloys in electrolytes on the base of organic solvents", 2001.
4. Diploma of Associate Professor (Docent) (Electrochemistry), 1997.
5. Ph.D (Electrochemistry) (Candidate of science - Russian qualification) Ph.D thesis "Electrochemical behaviour of aluminum in electrolytes based on amid solvents" defended at Rostov State University, 1985.
6. Postgraduate course. Rostov State University (including 2 months in Moscow State University). Chemistry departments. 1979-1982.
7. Diploma (Chemistry) Rostov State University (1-st Class Honour), 1979.

3. Member of International Society of Electrochemistry (since 1999).

4. Scientific interests:

Electrocatalysts for low temperature Fuel Cells; chemistry and electrochemistry of metal nanoparticles and M/C nano composites; Lithium batteries, Electrochemical incorporation of metals; Computer modelling of the nucleation processes; Electrochemical behaviour of lithium alloys, Lithium Intermetallics and Composite Materials.

5. Selected publications for the last 5 years:

1. V.E. Guterman, S.V. Belenov, A.Yu. Pakharev, M. Min, N.Yu. Tabachkova, E.B. Mikheykina, L.L. Vysochina, T.A. Lastovina, Pt-M/C (M = Cu, Ag) electrocatalysts with inhomogeneous distribution of metals in the nanoparticles, **Int. J. of Hydrogen Energy,** 2016, 41 (3), pp. 1609 -1626. DOI:10.1016/j.ijhydene.2015.11.002

2. V. E. Guterman, A. A. Alekseenko, V. A. Volochaev, N.Yu. Tabachkova, Synthesis of Pt/C nanostructured electrocatalysts: the impact of atmosphere and the intermediate carrier on the microstructure, **Inorganic Materials**, 2016, 52, 1, pp. 23–28. **DOI:** 10.1134/S002016851601009X

3. Vasiliy V. Pryadchenko, Artyom D. Galustov, Elena B. Mikheykina, Vasiliy V. Srabionyan, Leon A. Avakyan, Yan V. Zubavichus, Ivo Zizak, **Vladimir E. Guterman**, Lusegen A. Bugaev, Atomic structure of bimetallic nanoparticles in PtAg/C catalysts: determination of components distribution in the range from disordered alloys to "core-shell" structures**, J. Phys. Chem. C**, **2015**, 119 (6), pp 3217–3227, **DOI:** 10.1021/jp512248y

4. Rui Lin, Tiantian Zhao, Mingfeng Shang, Jianqiang Wang, Wenchao Tang, **Vladimir Guterman,** Jianxin Ma, Effect of heat treatment on the activity and stability of PtCo/C catalyst and application of in-situ X-ray absorption near edge structure for proton exchange membrane fuel cell, **J. of Power Sources**, 2015, Vol. 293, Article number 21227, Pages 274-282 doi:10.1016/j.jpowsour.2015.05.067

5. Weldegebriel Yohannes, S.V. Belenov, **V.E. Guterman**, L.M. Skibina, V.A. Volotchaev, N.V. Lyanguzov, Effect of ethylene glycol on electrochemical and morphological features of platinum electrodeposits from chloroplatinic acid, **Journal of Applied Electrochemistry**, 2015, Volume 45, Issue 6 , pp 623-633 . **DOI:** 10.1007/s10800-015-0820-5

6. **Vladimir E. Guterman**, Sergey V. Belenov, Vladimir V. Krikov, Larisa L. Vysochina, Weldegebriel Yohannes, Natalya Yu. Tabachkova, Elena N. Balakshina, Reasons for the differences in the kinetics of thermal oxidation of Pt/C nanostructured materials, **The J. of Phys. Chem., C,** 2014, 118, 41, pp. 23835–23844.
DOI: 10.1021/jp507801f, http://pubs.acs.org/doi/abs/10.1021/jp507801f

7. **Guterman V.E.**, Lastovina T.A., Belenov S.V., Tabachkova N.Yu., Vlasenko V.G., Khodos I.I., Balakshina E.N. PtM/C (M = Ni, Cu, or Ag) Electrocatalysts: Effects of Alloying Components on Morphology and Electrochemically Active Surface Areas, **J. of Solid State Electrochemistry**, 2014, Volume 18, Issue 5, pp 1307-1317. DOI: 10.1007/s10008-013-2314-x

8. **V.E. Guterman**, A.Y. Pakharev, N.Y. Tabachkova, Microstructure and Size Effects in Pt/C and Pt3Ni/C Electrocatalysts Synthesised in Solutions Based on Binary Organic Solvents, **Applied Catalysis A: General**, 2013, Vol. 453, p. 113-120.

9. N. Leontyev, S. V. Belenov, **V. E. Guterman**, P. Haghi-Ashtiani, A.P. Shaganov, B. Dkhil, Catalytic activity of carbon supported Pt/C nano-electrocatalysts. Why reducing the size of Pt nanoparticles is not always beneficient. **Journal of Physical Chemistry C,** 2011, V. 115, i.13, pp. 5429–5434.

10. **V.E. Guterman**, S.V. Belenov, T.A. Lastovina, E.P. Fokina, N.V. Prutsakova, Ya.B. Konstantinova, Microstructure and Electrochemically Active Surface Area of PtM/C Electrocatalysts, **Russian Journal of Electrochemistry**, 2011, Vol. 47, No. 8, pp. 933–939. http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1134/S1023193511080052

7. Phone: +7-863)-255-87-75 (home); +7-863)-219-88-25 (office).
8. E-mail: gut57@mail.ru , gutermanv@gmail.com, guter@sfedu.ru
9. Birth: 7 May 1957
10. Languages: Russian, English.
11. Professional experience: engineer, minor and senior research worker (Institute of physical and organic chemistry and Department of Chemistry, Rostov State University, Russia), Assistant Professor, Senior Teacher, Associate Professor, Member of Research Staff (Samsung Advance Institute of Technology, Material and Device Laboratory), Full Professor (Department of Chemistry, Southern Federal University, Russia).

12. Leadership in research projects:

1. "New approaches to the obtaining of high-performance catalysts: management by multi-level organization of materials; selection of efficient supports; search the optimum ratio of activity and stability; the development of methods for the research of fine structure of platinum-containing composites", RSF grant No 16-19-10115 (2016-2018).
2. "Supported electrocatalysts with reduced platinum content: new approaches to the management of multi-level structure and new methods of evaluation" Grant from Russian Foundation for Basic Researches No 14-29-04041_OBR_i (2014-2016).

3. “Synthesis and study the degradation mechanism of Core-shell M@Pt/C based electrocatalysts for Proton Exchange Membrane Fuel Cells” Grant from Russian Foundation for Basic Researches No 14-03-91167 (Joint Russian-Chinese project) (2014-2015).
4. “Development of Pt catalysts for a reduced Pt loading (core-shell type or hollow type Pt catalyst) Samsung SDI Co., Ltd. (2012-2013).
5. “Preparation, core and surface state diagnosis of two- and three-metallic nanoparticles with not uniform components distribution” Grant from Russian Foundation for Basic Researches No 11-08-00499 a (2011-2013).
6. “Prediction of the specific catalytic activity and synthesis of high active Pt/C and PtMe/C nanocatalysts for low temperature fuel cells” Grant from Russian Foundation for Basic Researches No 08-08-0869a (2008-2010).
7. “Development and study of nanostructured electrocatalysts for low temperature fuel cells”, Grant of Russian Federal Program, Lot «2007-6-1.6-00-01-024» (State contract No 02.516.11.6005).
8. “Stochastic computer model and experimental research of incipient states of an electrochemical crystallization of new phase” Grant from Russian Foundation for Basic Researches No 01-03-33018a (2001-2003).
9. “Synthesis and investigation of metal-contained composite materials with reversible lithium intercalation” Grant from Russian Foundation for Basic Researches No 01-03-32541, 2001-2003.
10. “Mathematical model of the heterogeneous solid-phase reaction”. Grant from Russian Foundation for Basic Researches, No 97-03-32618, 1997-1999.

13. Courses taught: New Materials for Electrochemical Power Sources, Electrochemical Methods of Investigation, Theoretical Electrochemistry, and Physical Chemistry.
14. Speaker at different International and Russian Scientific Conferences in the area of Lithium Batteries, Fuel Cells, Nanomaterials.
15. Supervisor of 6 Ph.D., defended at Southern Federal (Rostov State) University and Voronezh State University.
16. The member of Editorial Council of the Russian Journal of Electrochemistry.