CV of Grigoriy S. Yablonsky

http://en.wikipedia.org/wiki/Grigoriy_Yablonsky

I. General Information.

- **Date and place of birth:** 07.09.1940, Yessentuki (Russia)

- **Studies:**

  – M.S. Chemistry, 1962 with High Honors
  Kyiv Polytechnic Institute (National Technical University of Ukraine)
  Kyiv, Ukraine

  – Ph.D., Physical Chemistry, 1971
  Boreskov Institute of Catalysis
  Novosibirsk, Russia

  – Dr. Sci., (Habilitation), Physical Chemistry, Kinetics and Catalysis, 1989
  Boreskov Institute of Catalysis
  Novosibirsk, Russia

- **Doctoral theses:**

  – "Mathematical Simulation of Vinylchloride", Diss. *Ph. D. Thesis/Candidate Sci., Phys. Chemistry* (1971)

  – "Complex Kinetic Behavior of Heterogeneous Catalytic Reactions." Diss. *Dr. Sci.,(Habilitation), Physical Chemistry, Kinetics and Catalysis* (1989)

- **Professional Affiliation:**
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- Parks College of Engineering, Aviation and Technology, Department of Chemistry,
  Saint Louis University
  3450, Lindell Blvd,
  St. Louis 63103, USA
  Office Telephone: 1 - 314 - 977-8305; Fax: 1- 314 - 935-8403
  Emails: gyablons@slu.edu

- **Active knowledge of languages:** Russian, English, German, Ukrainian

II. Professional activities and achievements.

a) Research interests/Experience/Membership in professional or scientific associations.

- **Research Interests:**

  – mathematical modeling of chemical reactors and technological processes
  – heterogeneous catalysis
  – kinetics of complex chemical reactions
  – education, history and methodology of science

- **Experience:**

	2007 – Present	Sen. Res. Scientist, Adjunct Prof., Dept of Energy, Env. and Chem. Engng, Washington University in St. Louis St. Louis, Missouri, USA
	2007 – 2017	Associate Professor, Parks College, of Engineering, Aviation anf Technology Saint Louis University, St. Louis, Missouri, St. Louis, USA
	1995 – 2007	Research Associate Professor, Department of Chemical Engineering (since 2006 - Department of Energy, Environmental and Chemical Engineering) Washington University in St. Louis St. Louis, Missouri, USA
	1992 – 1997	Professor of Chemical Engineering, National Technical University of Ukraine (Kyiv Polytechnic Institute), Kyiv, Ukraine
		Vice-President of International Solomon University, Kyiv, Ukraine
	1964 – 1991	Siberian Branch of Russian Academy of Sciences, Russia
including	1986 – 1991	Chief of Laboratory, Deputy Director of Tuvinian Technological Institute, Kyzyl
	1964 – 1986	Postgraduate, Junior Research Associate, Senior Research Associate in

	Boreskov Institute of Catalysis, Novosibirsk
1962 – 1964	Chemical Engineer, Kyiv Chemical Plant, Kyiv, Ukraine

- **Membership in Professional / Scientific Associations**

1988 – 1992	Soviet (after 1991 - Russian) Union of Scientists, Member of Board
1988 – 1992	Scientific Council "Combustion", Russian Academy of Sciences (Russia, Moscow)
1988 – present	Scientific Council "Catalysis and Its Industrial Applications", Russian Academy of Sciences, Member (Russia, Moscow)
1992 – 1993	Siberian Association of Scientists, Member of Board
1992 – 1997	Ukrainian Association of Chemical Engineering, Vice - President
1993 – 1997	New York Academy of Sciences (New York, U.S.A.), Member
1993 – present	Ukrainian Academy of High Education (Kyiv, Ukraine), Member
1996 – present	American Institute of Chemical Engineers, U.S.A.
1996 – present	American Association for the Advancement of Science, U.S.A.
1997 – present	American Association of the University Professors
2002 – present	Academy of Science of St. Louis
2011 – present	American Chemical Society

- Organizer and Chairman of two National Conferences on Mathematical Methods in Chemical Kinetics: Krasnoyarsk (1986) and Kyzil (1989)
- Chairman of Session of 15th World Congress on Scientific Computation, Modeling and Applied Mathematics, Berlin (1997), 16th World Congress, Lausanne (2000), 17th World Congress, Paris (2005)
- Co-Chairman of Bangkok International Conference on Heterogeneous Catalysis, Bangkok, Thailand (2001)

- Organizer of International Workshop “Mathematics in Chemical Kinetics and Chemical Engineering”, Ghent (2002)
- Organizer of Workshop “Presenting Science as an Adventure and a Challenge”, Asian Pacific Conference on Education, Singapore (2003)
- Co-chairman of International Conference on Modeling in Chemical and Biochemical Engineering Science (Bangkok, Thailand, 2006)
- Co-chairman of Second International Workshop on Mathematics in Chemical and Biochemical Kinetics and Engineering (MACKiE-2), Houston, 2007
- Member of the Organizing Committee of the International Workshop “Mathematics in Chemical Kinetics and Chemical Engineering” (MACKiE-3, Ghent, February, 2009)
- Organizer of the session “Teaching Green Engineering” at the 8th World Chemical Congress on Chemical Engineering (Montreal, August 2009)
- Member of the Scientific Committee of the International Workshop “Education in engineering” (Cork, Ireland, July 2010)
- Member of the Scientific Committee of the International Conference “Biofuels in catalysis” (July 2010, St. Petersburg)
- Co-Chairman of the Organizing Committee of the International Workshop“Mathematics in Chemical Kinetics and Chemical Engineering” (MACKiE-4, Heidelberg, May 2011)
- Co-Organizer of the Session “Temporal Analysis of Products” of the American Chemical Society, March 2011
- Member of the Organizing Committee of the International Workshop“Mathematics in Chemical Kinetics and Chemical Engineering” (MACKiE-5, Chennai (Madras), February 2013)
- Member of the Organizing Committee of the World Oxidation Congress (WOC, St. Louis, July 2013)
- Member of the Organizing Committee of the International Workshop“Mathematics in Chemical Kinetics and Chemical Engineering” (MACKiE-6, Gent, Belgium, June-July 2015)
- Editor of “The Scienific Pages of Chemical Kinetics and Thermodynamics” (2016)
- Member of the Organizing Committee of the International Workshop “Mathematics in Chemical Kinetics and Chemical Engineering” (MACKiE-7, Budapest, Hungary, May 2017)
- Member of the Organizing Committee of the International Workshop “Mathematics in Chemical Kinetics and Chemical Engineering” (MACKiE-8, Ghent, Belgium, November 2018)
- Co-editor of the issue “Current Opinions in Chemical Engineering” (2018)

b) <u>Funding/Participation in industrially sponsored research projects/Visiting professorships/Taught courses/Doctor of sciences theses directed/Honors and awards.</u>

- **Funding**

Since 1995 Prof. Yablonsky had a funding via the Heterogeneous Kinetics and Particle Chemistry Laboratory (Director Prof. John T. Gleaves), particularly:

- NSF GOALI Grant (2004-2007) "Atomic Tailoring of Catalyst Surfaces for High Selectivity: Partial Oxidation of Propane";
- NASA Grant (1999-2002), "Global Model of a Protoplanetar Disk";

NSF Grant (1995-1997) "Dynamics of Alkane Oxidation Reactions on Vanadyl Pyrophosphate Based Catalysts"
(2014-2015) President Foundation of Saint Louis University, co-PI of the Grant "Advanced Understanding of Nanostruct.Materials for Novel Interdiscipl. Applications"
Since 2015 – co-PI of the Grant "Integrated Flue Gas Purification and Latent Heat Recovery for Pressurized Oxy-Combustion", Department of Energy (DE FE 0025193

- **Participation in industrially-sponsored research projects**:

1) TAP studies of reaction and diffusion in zeolite catalysts and porous carbon (sponsored by Exxon Co.)

2) propane oxidation over multi-component industrial oxide catalysts (sponsored by Rohm & Haas Co.)

3) catalytic methane oxidation (sponsored by Conoco Co.)

Also participated in NASA-supported project "Global chemical reactor of protoplanetary disc"

Since 2009 – co-PI of the Grant "Integrated nanoscale catalysts for the direct conversion of carbon dioxide into liquid fuels and chemicals" funded by the Clean Coal Consortium, Missouri, USA.

- **International Research Grants Completed**

1994 -1995 Grant of International Science Foundation (Washington, U.S.A.): "Theory of Complex Kinetic Behavior on Non-Ideal Catalytic Surfaces".

1995 - 1996 Joint Grant of the International Science Foundation (Washington, U.S.A.) and Ukrainian Government:

"Kinetic Models of Complex Catalytic Reactions"

- **Visiting Professorships**

- Department of Mathematics, Ben Gurion University of the Negev, Israel (1992)

- Department of Chemical Engineering, University of Minnesota, Minneapolis, U.S.A. (1993)

- Department of Chemistry, Yagellon University, Cracow, Poland (1993)

- Department of Chemical Engineering, Ecole Polytechnique, Montreal (Quebec), Canada (1994)

- Department of Chemical Engineering, Washington University, St. Louis, MO, U.S.A. (1995)

- Department of Chemical Engineering, Kasetsart University, Bangkok, Thailand (1998).

- Institute of Chemical Engineering of Technology, Ecole Polytechnique Federale, Lausanne, Switzerland (1998).

- Department of Chemical Engineering, University of Ghent, Ghent, Belgium (1999, 2000, 2002, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018)

- Department of Chemical Engineering, Department of Chemistry, University Scholars Programme, National University of Singapore, Singapore (2001, 2002, 2003, 2004)

- Department of Chemical Engineering, Wuhan Institute of Chemical Technology, People Republic of China (2001)

- School of Engineering, University of Melbourne, Melbourne, Australia (2004)

- School of Chemistry and Chemical Engineering, Queen's University of Belfast, N. Ireland, United Kingdom (2005)

- Department of Chemical Engineering, University Abo Academi in Turku, Abo, Finland (2009)

- Dresden Senior Fellowship at the School of Engineering Sciences of the Technische Universitat Dresden (2014)

- Fritz-Haber Institute, Germany, Berlin, 2014 (Summer); 2015 (Fall)
- Indian Institute of Technology (Mumbai), India, December 2017
- University of Oslo, Oslo, Norway, January 2018

- **Honors and Awards**

Professor of Chemistry (title) - 1991
Senior Research Scientist (title) - 1987

Soviet Union Mendeleev's Chemical Society Diploma for the work "Modeling of the Process of Vinyl Chloride Synthesis in Fixed Bed of Catalyst" (1967 - 1968)

Soviet Union Mendeleev's Chemical Society Diploma for the work "Dynamics of the Heterogeneous Catalytic Reactions" (1977)

Soviet Union Mendeleev's Chemical Society Diploma for the work "Mathematical Models of Chemical Kinetics" (1979)

Two Silver Medals of the Exhibition of National Economic Achievements of the U.S.S.R. (1971-1973)

Honorary Professor at the Polytechnic University of Wuhan of Chemical Technology, June 2001 (People Republic of China)

"Students and Teachers as Research Scientists (STARS) Program", Certificate of Appreciation, July 2002; August 2004; August 2005 (2002-2010)

Award "Five Years of Service NSF Research Mentor Program" (STARS), 2012

Honorary Professor of the University of Ghent (Belgium) 2010

Honorary Fellow of the Australian Institute of High Energetic Materials (Gladstone, Australia) 2011

Member of the Scientific Council on Catalysis at the Russian Academy of Sciences (2011)

Chevron Chair Professorship at the Indian Institute of Technology (IIT), Madras, India, since December 2011

St. Louis University Award "For 5 years of dedicated service" (2012)

"Lifetime Achievement Award", In recognition of outstanding contributions to the research field of chemical kinetics", (Mathematics in Chemical Kinetics and Engineering, MaCKiE-2013)

James B. Eads Award, Academy of Science of St. Louis Outstanding Scientist Award (2013)

Fellow of Academy of Sciences- St. Louis (St. Louis, MO, USA) 2013

Sarton Medal of the History of Science (2013/2014)

Award "Ten Years of Service NSF Research Mentor Program" (STARS), 2014

Main taught Courses

- *Chemical Kinetics*, 1980s (Novosibirsk State University, Novosibirsk, Russia)
- *Chemical Technology*, 1980s (Kyzyl State University, Kyzyl, Russia)
- *Modeling of Chemical Processes*, 1992-1995 (Kyiv Polytechnic Institute/National Technical University of Ukraine, Kyiv, Ukraine)
- *Chemical Kinetics in Heterogeneous Catalysis*, 1994 (Ecole Polytechnique, Montreal, Canada), 1997 (Ecole Polytechnique Federale de Lausanne, Switzerland)
- *Modeling in Chemical Technology*, 1998 (Kasetsart University, Bangkok, Thailand)
- *Advanced Reaction Engineering, Principles of Chemical Engineering, Applied Heterogeneous Catalysis*, 1998-2000; 2003 (Washington University); 2000-2001 (National University of Singapore, Singapore)
- *Chemical Sciences and Mathematics*, 2002 (National University of Singapore, Singapore)
- *Science as Adventure and Challenge*, 2002, 2003 (Washington University in St. Louis, University College)
- *Chemical Technology in Everyday Life*, 2003 (National University of Singapore, University Scholars Programme, Singapore)
- *Transport in the Environment*, 2003 -2005 (Washington University in St. Louis)
- *Chemical Kinetics in Heterogeneous Catalysis*, 2005 (Queen's University of Belfast, N. Ireland, UK)
- *Chemistry I*, 2006 - 2013 (Saint Louis University, USA)
- *Engineering Chemistry*, 2007-2014 (Saint Louis University, USA)
- *Chemistry II,* 2009-2014 (Saint Louis University)
  Mathematic Models of Complex Catalytic Reactions, Summer 2009 (University Abo Academi in Turku, Abo, Finland)
  Kinetics of Complex Reactions, 2010 Fall (Washington University in St. Louis, St. Louis), 2011-2018 Spring
  Sustainable Engineering, Spring 2011(Saint Louis University, Center of Sustainability, St. Louis).
  Chemical Kinetics of Complex Catalytic Reactions, June 2012; January 2018 (University of Oslo, Oslo, Norway)
  Kinetics of Chemical Reactions: Decoding Complexity, June 2012 (course based on the book "Kinetics of Complex Reactions" by G. Marin and G. Yablonsky) University of Gent, Ghent, Belgium, June 2012)
  Two-lecture-course "Kinetics of Chemical Reactions", Fritz-Haber-

Institute, Berlin, Germany, July 2014
Three-lecture course "Kinetics of Complex Reactions: Decoding Complexity", Fritz-Haber Institute, Berlin, Germany, November-December 2015.
Course, *"Energy and Technology: From Industry to Daily Life*", Saint Louis University, Fall 2016
Two-week course "Chemical kinetics of complex reactions", Indian Institute of Technology, Mumbai, India, December 2018

Doctor of Sciences Theses Directed

1. Elokhin V.I. "Dynamics of Model Heterogeneous Catalytic Reactions." Dissertation, Boreskov Inst. of Catalysis, 1981.

2. Orlik S.N. "Steady-State and Dynamic Studies of the Heterogeneous Catalytic CO-Oxidation Reaction" Dissertation, Kyiv: Inst. Phys. Chemistry, 1982.

3. Lazman M.Z. "Nonlinear Kinetic Models of Heterogeneous Catalytic Reactions." Dissertation, Boreskov Inst. Catalysis, 1985.

4. Ya. Yu. Stepanskii, "Correlation between Cool-Flame Combustion Characteristics and Octane Numbers of Hydrocarbons." Dissertation, Inst. Petrochem. Industry, 1986.

5. A.V. Myshlyavtsev, "Kinetic Models of Surface Process with Phase Transitions." Dissertation, Boreskov Inst. Catalysis, 1988.

6. P. Phanawadee, "TAP-Pulse Response Studies in Heterogeneous Catalysis: Theory and Application", Dissertation, Washington University in St. Louis, 1999

7. S.O. Shekhtman, "Interrogative Kinetics. A New Methodology for Catalyst Characterization", Dissertation , Washington University in St. Louis, 2003

8. M. Rude, "Quantitative Characterization of Inert Gas Diffuson and Oxygen Adsorption in TAP-Studies", Thesis, Washington University in St. Louis, 2006

9. R. Fushimi, "TAP-Studies of Pd-SiO_2 Catalysts Prepared by Atomic Beam Deposition", Thesis , Washington University in St. Louis, 2006

10. Xiaolin Zhang, "Getting to the Point: Bridging the Gap between Simple and Complex Catalytic Systems using Temporal Analysis of Products (TAP),
Thesis, Washington University in St. Louis, 2009

11.Praminda M. W. Imaduwa Gamage, PhD, "Nonlinear Dynamics of Small Electrochemical Networks and Cathode-Anode Electrochemical Systems", Saint Louis University, 2011

12.Michael Harkins, "Non-linear Dynamics in Far-From-Equilibrium Electrochemi

Systems: Role of Coupling of Anode and Cathode Reactions", PhD Thesis, Saint Louis University, 2017.

III. Books and chapters in books.

Books (in English)

1. G.S. Yablonskii, V.I. Bykov, A.N. Gorban' and V.I. Elokhin, "Kinetic Models of Catalytic Reactions, in series "Comprehensive Chemical Kinetics," vol. 32, Amsterdam-Oxford- New York - Tokyo: Elsevier, 1991, 396 pp

Review by H. Henry Weinberg (University of California, Santa Barbara) on this book: "In summary, this book can be recommended highly. A major strength is that it will bring chemistry to chemical reaction engineers, and it will bring mathematical analysis to catalytic chemists. It could be effectively used as a text in a graduate course on chemical reaction engineering in a chemical engineering curriculum"
Journal of American Chemical Society, 114, N13 (1992)

2. G. B. Marin, G. Yablonsky "Kinetics of Chemical Reactions. Decoding Complexity", Wiley-VCH, 1st edition(2011) 428 pp; Wiley-VCH, 2nd edition (2018)…pp

3. G. Yablonsky, "Chemistry for Engineers", Kendall Hunt Publishing Company (2012) 115p

4. D. Constales. G.S. Yablonsky, J. Thybaut, D.R. D'hooge and G. B. Marin "Advanced Data Analysis and Modeling in Chemical Engineering", Elsevier (2016) 399 pp

5. V.I. Bykov, S.B. Tsybenova, G.S. Yablonsky, "Chemical Complexity via Simple Models: MODELICS", De Gruyter, Berlin (2018) 374 pp

Books (in Russian)

1. G.S. Yablonskii, S.I. Spivak "Mathematical Models of Chemical Kinetics", Moscow: Znanie, 1977.

2. V.S. Myzykantov, G.S. Yablonskii. "Biography of Academician G.K. Boreskov", Moscow: Nauka, 1982.

3. G.S. Yablonskii, V.I. Bykov, A.N. Gorban', "Mathematical Models of Catalytic Reactions", Novosibirsk: Nauka, 1983.

4. G.S. Yablonskii, V.I. Bykov, V.I. Elokhin, "Kinetics of Model Reactions of Heterogeneous Catalysis", Novosibirsk: Nauka, 1984.

5. A.N. Gorban', V.I. Bykov, G.S. Yablonskii, "Skizzes on Chemical Relaxation" Novosibirsk: Nauka, 1987

Chapters in Books (in English)

1. M.Z. Lazman, G.S. Yablonskii, "Kinetic Polynomial: A New Concept of Chemical Kinetics," Patterns and Dynamics in Reactive Media: *IMA Proc.* 1989, Springer Verlag, 1991, p. 117-249.

2. G.S. Yablonskii, V.I. Elokhin, "Kinetic Models of Heterogeneous Catalysis," Perspective in Catalysis, Blackwell Scientific Publishers, 191-249(1992)

3. A.V. Myshlyavtsev, G.S. Yablonskii, "Method of Transfer-Matrix for Calculation of Thermodynamics and Kinetics of Surface Reactions, "Advances in Thermodynamics, vol. 6: *Flow, Diffusion and Rate Processes,* S.I.: Taylor & Fransis (1992).

4. A.V. Myshlyavtsev, G.S. Yablonskii, "New Results in Transfer-Matrix-Method for Catalytic Reactions," Mathematical Methods in Chemistry, New York: Gordon & Breach (1996).

5. M. Lazman and G. Yablonsky, "Overall Reaction Rate Equation of Single Route Catalytic Reaction", in "Advances in Chemical Engineering", 34(2008)47 – 102.

6. A. Efstahiou, J. Gleaves, and G. Yablonsky, "Transient Techniques: Temporal Analysis of Products (TAP) and Steady-State Isotopic Transient Kinetic Analysis (SSITKA)", in the book "Characterisation of Solid Materials: From Structure to Surface Reactivity", Chapter 22 (M. Che and J.C. Vedrine, Eds), J. Wiley-VCH, 2012, 2 volumes.

7. R. Fushimi, J.T. Gleaves and G.S. Yablonsky, "Essential tools of reactor modeling and design", in the book "Multiphase Catalytic Reactors: Theory, Design, Manifacturing and Applications" (Z. Onsan and A. Avci, Eds) Wiley (2016)233-268

Editor

(1) A Special Issue on Modeling on Chemical and Biological Engineering Sciences, Chemical Engineering Communications (2008) Vol.195, issue 11, guest-editor (together with J. Limtrakul), preface by J. Limtrakul and G. Yablonsky, ibid., 1303-1304

(2) "Advances in Chemical Engineering", V. 34, "Mathematics in Chemical Kinetics and Chemical Engineering "(2008), Elsevier, co-editor (together with D. West and G. Marin), preface by G. Marin, G. Yablonsky and D. West

(3) "Advances in Chemical Engineering", V. 39, "Thermodynamics and Kinetics of Complex Systems" (2010), Elsevier, co-editor (together with D. West), preface by D. West and G. Yablonsky.

(4) "Grasping Complexity Editorial", "Computers and Mathematics with their Applications", a special issue 65(2013)10 with A. Gorban http://arxiv.org/pdf/1303.3855v1.pdf

(5) Book "Mathematical Modelling of Natural Phenomena", University of Cambridge 2015 (editor with A, Gorban)
(6) "Complexity", "Current Opinions in Chemical Engineering", a special issue (2018) (editor with G.B. Marin)

Chapters in Books (in Russian)

1. M.G. Slin'ko, V.I. Bykov and G.S. Yablonskii, "Dynamics of Catalytic Processes with Changing Activity", Problems of Cybernetics, Moscow (1973)

2. M.G. Slin'ko, G.S. Yablonskii, "Dynamics of Catalytic Reactions", Problems of Kinetics and Catalysis, in "Non-Equilibrium and Instationary Processes in Catalysis", V. 17, Moscow (1978)

3. A.N. Gorban', G.S Yablonskii and V.I. Bykov, "Dynamics of Closed Chemical Systems: A Path to Equilibrium," Mathematical Problems of Chemical Thermodynamics, Moscow, 1980.

4. G.S. Yablonskii, "An Evolution of Basic Concepts of Chemical Kinetics," Methodological Problems of Chemistry, Novosibirsk, 1981

5. G.S. Yablonskii, "Kinetics of Complex Chemical Reactions. Introduction into the Theory", Moscow University, Moscow, 1983

6. G.S. Yablonskii, V.I. Yevstignejev and V.I. Bykov, "Graphs Theory Methods in Chemical Kinetics", Methods of Graphs Theory in Chemistry, Novosibirsk, 1987.

IV. Scientific papers. Patents.

a) Refereed journal and proceeding papers in English.

1. B.L. Kamenko, G.S. Yablonskii, M.G. Slin'ko and A.I. Gel'bshtein, "Simulation of Vinyl Chloride Synthesis," *Int. Chem.Eng.*(1968)

2. V.I. Bykov, G.S. Yablonskii and M.G. Slin'ko, "Application of Maximum Principle in Optimization of Pseudo-Steady-State Processes with Changing Activity", Lecture Notes in Computer Sci., Vol. 27. Optimization Technique, *IFIP Tech. Conf.*, S.I, Springer-Verl., 153-164 (1975)

3. V.I. Bykov, G.S. Yablonskii and T.A. Akramov, "Dynamic Properties of Oxidation Catalytic Systems", Heterogeneous Catalysis: *Proc. of the IIIrd Intern. Symposium of the Heterogeneous Catalysis*, Varna: Acad. Sci., 262-267 (1975).

4. T.A. Akramov, V.I. Bykov and G.S. Yablonskii, "Dynamic Properties of Open Catalytic System, "Heterogeneous Catalysis: in *Proc. of the IIIrd Intern.Symposium of the Heterogeneous Catalysis,* Varna: Acad. Sci., 43-49 (1975).

5. T.A. Akramov, G.S. Yablonskii and V.I. Bykov, "Qualitative Analysis of Dynamics of Heterogeneous Catalytic Reactions", *Proc. of the IInd Soviet-French Seminar on the Math.l Simulation of Catalytic Proc., Novosibirsk, 31-39 (1976)*

6. V.I. Elokhin, G.S. Yablonskii and V.I. Bykov, "The Simplest Catalytic Mechanism Permitting Several Steady-States of the Surface," *React. Kinet. Catal. Letters,* 4 (1976).

7. G.A. Chumakov, V.I. Bykov and G.S. Yablonskii, "Dynamic Properties of Heterogeneous Catalytic Reaction with Several Steady-States," *React. Kinet. Catal Letters, 4, 397-403 (1976)*

8. V.I. Bykov, G.S. Yablonskii, "Simple Catalytic Mechanism Permitting Multiplicity of Steady-States," *React. Kinet. Catal. Letters,* 10, 13-18 (1976)

9. V.I. Bykov, G.S. Yablonskii and M.G. Slin'ko, "Steady - State and Relaxation Characteristics of CO-Oxidation on Platinum", *Proc. of the IIIrd Soviet-French Seminar on the Mathematical Simulation of Catalytic Processes and Reactors, Novosibirsk: Inst. Catalysis, 119-132 (1978).*

10. V.I. Bykov, A.N. Ivanova and G.S. Yablonskii, "On Some Classes of Kinetic Models of Oscillating Catalytic Reactions," *Kinetics of Physical-Chemical Oscillations: Proc. of the Conf., vol.7, Aachen (1979).*

11. V.I. Bykov, G.S Yablonskii and V.P. Ivanov, "Simulation of Kinetic Dependencies of CO-Oxidation on Platinum Group Metals," Applying Mathematical Methods and Computers in Catalytic Investigations: *Proc .of the IV Soviet-French Seminar*, *Novosibirsk: Inst. Catalysis, .9-16 (1979)*

12. A.N. Gorban', G.S. Yablonskii, and V.I. Dimitrov, "Qualitative Analysis of Homogeneous Hydrogen Oxidation, Proc. of the VI Intern. Symposium on Combustion Processes, Karpath, 26-37 (1979)

13. A.N. Gorban', G.S. Yablonskii and V.I. Bykov, "A Sequential Analysis of Complex Dynamics of Catalytic Reactions," Heterogeneous Catalysis: *Proc. of the IV Intern. Symposium on Heterogeneous Catalysis*, vol.2, Varna, Oct. 2-5, 1979, Varna, 157-162 (1979)

14. A.N. Gorban', V.I. Bykov and G.S. Yablonskii, "Steady - State Dissipative Structures in CO-Oxidation on Platinum," Heterogeneous Catalysis: *Proc.of the IV Intern. Symposium on Heterogeneous Catalysis*, vol. 2, Varna, Oct. 2-5, 1979, Varna, 197--199 (1979)

15. V.I. Bykov, G.S. Yablonskii and A.A. Ivanov, "Influence of an Additional Route on the Rate of Catalytic Reaction," *React. Kinet. Catal. Letters,* 12 , 519-524 (1979)

16. V.I. Bykov, G.S. Yablonskii and V.P. Kamentshikov, "A Diffusion Model of a Catalytic Reaction ," *React. Kinet. Catal. Letters,* 12 (1979)

17. V.I. Bykov, G.S. Yablonskii and K. Kumbilieva-Buda, "Influence of the Number of Active Sites on Kinetic Characteristics," *React. Kinet. Catal. Letters*, 11, 97-101 (1979)

18 Ya.Yu. Stepanskii, G.S. Yablonskii and V.I. Bykov, "Self-Oscillations in the Cool-Flame Combustion of n-Heptane-Isoctane Mixtures," *React. Kinet. Catal .Letters,* 14, 335-340 (1980)

19. V.F. Kim, V.I. Bykov, G.S. Yablonskii and Ya.Yu. Stepanskii, "Simulation of Self-Oscillations in Combustion of n-Heptane," *React. Kinet. Catal. Letters,* 14, 295-300 (1980)

20. A.N. Gorban', V.I. Bykov and G.S. Yablonskii, "Macroscopic Clusters Induced by Diffusion," *Chem. Eng. Sci.*, 10, 2351-2352 (1980)

21. N.A. Bogdanchikova, G.S. Yablonskii and G.K. Boreskov, "Kinetics and Mechanism of Catalytic Reaction between NO and CO on the Ag-Catalyst", *React. Kinet. Catal. Letters*, 21, 1275-1281 (1980)

22. V.I. Elokhin, A.N Gorban', G.S. Yablonskii and V.M. Cheresiz, "Dynamics of Chemical Reaction and Non-Physical Steady-States," *React. Kinet. Catal. Letters*, 15, 245-250 (1981)

23. V.I. Bykov, V.I. Elokhin and G.S. Yablonskii, "Steady-State Multiplicity in Kinetic Model of CO-Oxidation Reaction," *Surf. Sci.*, 107, L334-L338 (1981)

24. V.I. Bykov, G.S. Yablonskii, "Simulation and Optimization of Processes with Decreasing Activity," Catalyst Deactivation: *Proc .of the Int. .Symposium*, Antwerpen, 295-305 (1981)

25. V.I. Bykov, V.I. Elokhin and G.S. Yablonskii, "Steady-State and Dynamic Characteristics of Two-Center Mechanism Catalytic Reactions," *React. Kinet. Catal. Letters,* 17 (1981)

26. S.N. Orlik, G.P. Korneichuk and G.S. Yablonskii, Prediction of Critical Phenomena on CO-Oxidation Reaction by the Help of Ideal Adsorbed Layer Model," *React. Kinet. Catal. Letters*, 19(1982)

27. N.A. Blinova, G.L. Koval and G.S. Yablonskii, "Kinetic Models of CO-Oxidation on Pd-Containing Cataly in the Presence of SO_2"*React. Kin. Cat. Lett,* 19, 202 (1982)

28. A.N. Gorban', G.S. Yablonskii and V.I. Bykov, "The Path to Equilibrium," *Int. Chem. Eng*., 22, 368-375 (1982)

29. A.V. Grechannikov, G.S. Yablonskii, "Analysis of Fluctuations in Chemical Reactions with Several Steady-States", *React. Kinet. Catal. Letters*, 19, 321-326 (1982)

30. V.M. Cheresiz, G.S. Yablonskii, "Estimation of Relaxation Times for Chemical Kinetic Equations", "*React. Kinet. Catal. Letters,* 19, 69-73 (1982)

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c) Unrefereed articles and publications.

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d) Patents.

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VI. Lectures.

a) Invited lectures at American and International Meetings.

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4. "Simulation of the Kinetic Dependencies of CO-Oxidation on Metals of the Platinum Group", with V.I. Elokhin, V.P. Ivanov, IVth Soviet - French Seminar on Mathematical Methods and Computers in Catalytic Investigations, Novosibirsk, 1979.

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9. "Instationary Kinetic Models of Heterogeneous Catalytic Reactions", Intern. Conf. *"Non- Steady Processes in Heterogeneous Catalysis"*, Novosibirsk, 1990

10. "Thermodynamic Modeling of Complex Processes in Atmosphere," with A.V. Myshlyavtsev, International Symposium on Systems Analysis and Simulation, Berlin, 1992.

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13. "Unexhaustible Langmuir-Hinshelwood Mechanism, or Twenty Years Later," Conference *"Phase Transitions in Catalytic Surface Reactions Models*", Institute of Mathematics and Its Applications (Univ. of Minnesota), Minneapolis, 1994.

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15. "Simulation of Structure - Forming Processes in Oxide Systems", with D.V. Kundirenko, Yu.V. Barzilovich, International Symposium on Systems Analysis and Simulation, Berlin, 1995

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17. "New Results in Modeling Complex Catalytic Reactions", 15th World Congress on Scientific Computation, Modeling and Applied Mathematics, Berlin, August 1997

18. "State-Defining TAP Pulse Response Experiments", with J.T. Gleaves, P.Phanawadee, Y. Shuurman, International Symposium *"Dynamics of Surfaces and Reaction Kinetics in Heterogeneous Catalysis"*, Antwerpen, September 1997

19. "Non-Linear Steady-State Kinetics of Complex Catalytic Reactions: Theory and Applications", with M.Z. Lazman, Intern. Symposium *"Dynamics of Surfaces and Reaction Kinetics in Heterogeneous Catalysis*", Antwerpen, September 1997

20. "Pulse - Response TAP - Studies for Understanding Heterogeneous Catalytic Processes", XIV International Conference on Chemical Reactors, CHEMREACTOR – 14, Tomsk, Russia, June 23-26 1998

21. "Multi-Scale Problems in the Quantitative Characterization of Complex Catalytic Materials", I6th World Congress of the IMACS, Lausanne, 2000

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23."Trans-Disciplinary Knowledge: Research and Pedagogy" (with B.Baaquie), 2nd Symposium on Teaching and Learning in High Education, Singapore, Sept. 2002

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28. G. S. Yablonsky and J. T. Gleaves, “Mathematical modeling of catalytic reactions: results and tendencies”, presented at the International Conference on Modeling in Chemical and Biological Engineering Sciences, October 2006

29. G. S. Yablonsky (with R. Fushimi, M. Rude, and J. T. Gleaves), “Atomic Tailoring and Kinetic Characterization of Pd containing Catalysts based on the TAP – technique”, presented at the Fifth International Conference on Unsteady-State Processes in Catalysis, November 22-25, 2006, Suita-City, Japan

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35. G. Yablonsky, Decoding the Complexity of Chemical Reactions, Conference on the Theoretical Chemistry, El-Paso, October 2008 (key-note lecture)

36. G. Yablonsky, “Mathematical models of chemical reactions: new trends”, Plenary talk at the International conference “Mathematical methods, techniques and technologies”, 2009, May 25-28, Pskov, Pskov Polytechnic Institute, Russia

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38. G. Yablonsky, **“**Science as an Adventure and a Challenge “, Invited talk at the seminar of the School of Engineering, University of Ghent, June 2010.

39. G.S. Yablonsky,” Temporal Analysis of Products (TAP)-approach as chemical calculus. Theory and application”, A key-note lecture at 241th American Chemical Society Meeting, Session “Temporal Analysis of Products (TAP) - Studies for Sustainability, Energy and the Environment” (Anaheim, CA, March 2011)

40. G. Yablonsky, “Temporal Analysis of Products (TAP) - pulse response studies for microporous catalyst characterization”, a key-note lecture at the 2nd International Workshop “**Na**no**p**orous Materials for **En**vironmental and **En**ergy Applications (**NAPEN) –** 2011”, Greece, Rhodes, June 2011.

41. G. Yablonsky “Kinetics of Complex Reactions:Grasping Complexity”, Plenary Lecture at the Conference “Mathematics in Chemical Kinetics and Engineering” (MaCKiE-2013), Chennai/Madras, India, February 2013

42.G. Yablonsky (together with G. B. Marin), “Decoding the Complexity of Reaction Networks”, Saint Louis University/USA/ and Universität Ghent /Belgium/, an invited lecture at the DECHEMA Colloquium in Magdeburg/Germany, “Complex Reaction Networks: From Topological-kinetic Analysis to the Design of Industrial Reactors”, January 2013

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45**.** Panel Presentation, G. Yablonsky (together with D. Constales and G. Marin) “ Grasping Complexity in Chemical Kinetics: Bottom-Up, Top_Down and Some More”, Joint European Thermodynamics Conference (July 2013) Brescia, Italy

46. CHEMREACTOR 2014 (Delft, September) “Decoding Complexity of Chemical Reactions”, A Key-note Lecture (together with Guy B. Marin)

47. Lecture at the Inaugural Meeting for the Consortium for Interfacial Reactions and Catalytic Engineering (CIRCE), Idaho Falls, March 2016, “TAP – Mysteries: Time, Life and Astrocatalysis”

48. Key-note lecture at the Gordon Research Conference “Oscillations and Dynamic Instabilities in Chemical Systems”, 8-13 July

2018, "Joint Kinetics: New Relationships Between Thermodynamic and Relaxation Characteristics".

Invited lectures at Soviet Union and Russian Meetings.

1. "Dynamics in Catalytic Kinetics", Soviet Union Conf. on the Chemical and Biological Kinetics, Samarkand, 1980.

2. "Steady - State Kinetic Behaviour in Heterogeneous Catalysis", Soviet Union Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory",* Krasnoyarsk*,* 1982

3. "Dynamics of Catalytic Processes with Changing Activity", Symposium on the Deactivation of the Catalysts, Ufa, 1985

4. "Dynamic Models of Oxidation Catalytic Processes", Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory,"* Krasnoyarsk, 1985.

5. "Classification of Relaxations in Chemical Kinetics", Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory",* Krasnoyarsk, 1985

6. "Graphs Theory in Chemical Kinetics," Conf. *"Application of Graphs Theory Methods",* Irkutsk, 1989

7. "Graphs Theory Methods in Steady-State and Instationary Kinetics", Conf. *"Graphs Methods in Chemistry"*, Kalinin - Tver', 1990

8. "Mathematical Modeling of Complex Catalytic Reactions: New Strategy and Methodology", Third Siberian Congress on Applied and Industrial Mathematics (INPRIM - 98) , Novosibirsk, Russia, 1998.

b) Other presentations at American and international Meetings.

1. "Application of Maximum Principle for Optimization of Catalytic Processes with Changing Activity”, with V.I. Bykov, M.G. Slin'ko, *IFIP Conf. on Optimization,* Novosibirsk, 1974

2. "Dynamic Properties of Open Catalytic Systems", with T.A. Akramov, V.I. Bykov, *III*rd *Intern. Symposium on the Heterogeneous Catalysis*, Varna, 1975

3. "Dynamic Properties of Oxidation Catalytic Systems", with T.A. Akramov, V.I.Bykov *III*rd *Intern. Symposium on the Heterogeneous Catalysis,* Varna, 1975

4. "A Sequential Analysis of Complex Dynamics of Catalytic Reactions", with V.I. Bykov, A.N. Gorban', *IV*th *Intern. Conf. on Heterogeneous Catalysis,* Varna, 1979

5. "Steady - State Dissipative Structures in the CO-Oxidation on the Platinum", with A.N. Gorban', V.I. Bykov, *IV*th *Intern. Conf. on Heterogeneous Catalysis,* Varna, 1979

6. "On the Time - Space Control of Catalytic Reactions", with V.I. Bykov, V.I. Elokhin, Conf. *"Chemplant-80. Computers in the Design of Chemical Plants",* Germany, 1980

7. "Kinetic Model of CO-Oxidation on Pd-Containing Catalyst and Critical Phenomena Prediction", with V.I. Elokhin, *V*th *Intern. Symposium on Heterogeneous Catalysis,* Varna, 1983

8. "Non-Linear Oscillations in the Kinetics of Catlytic Reactions", *III*rd *Intern. Workshop on Non-Linear and Turbule*nt *Processes in Physics"*, Kyiv, 1988

9. "Mathematical Models of Catalytic Reactions", *IUPAC Prague Conf. on Chemistry and Chemical Technology,* Prague, 1989

10. "Kinetic Models of Surface Science for Industrial Catalysis", IVth World Congress on Chemical Engineering, "*Strategies - 2000",* Karlsruhe, 1991

11. "Kinetic Models of Oscillating Catalytic Reactions", *Gordon Research Conf.*, U.S.A., July 1991

12. "Models of Phase Transitions for Adsorption of Simple Molecules on Metals and Oxides Surface", with A.V. Myshlyavtsev, A.F. Chul'dum, *Intern. Conf. on Oxide Surface Chemistry and Reaction Simulation,* Kyiv, 1992

13. "Kinetic Model as a Basis for Design of Industrial Reactors and Standartization of Catalysts", *Proc. of Organic Chemistry and Technology,* Israel Chem. Soc., 1992

14. "Estimation of Chemical Risk (Thermodynamic and Kinetic Aspects)", with Yu.V. Barzilovich, *CHEMTEX- 93*, Wroclaw, 1993

15. "Kinetic Models of Heterogeneous Catalysis", *I*st *European Congress on Catalysis* (EUROPACAT-I), Montpellier, September 1993.

16. "Monte - Carlo Studies of Trigger- and Self - Oscillations in the Bimolecular Heterogeneous Catalytic Reactions", with L.V. Lutsevich, V.I. Elokhin, *I^st European Congress on Catalysis* (EUROPACAT-I), Montpellier, September 1993

17. "Catalyst Standartization: The Kinetic Approach", with N.M. Bobrov, B.S.Balzhinimaev, *I^st European Congress on Catalysis* (EUROPACAT-I), Montpellier, September 1993

18. "Dynamics of Complex Surface Reactions", "CHISA - 93" *11^th Intern. Congress on Chemical Engineering*, Prague, 1993

19. "Transfer-Matrix-Method for Surface Diffusioin and Surface Rerconstruction Model", with A.V. Myshlyavtsev, R.T. Samdanchap, *Lars Onsager Symposium* "Coupled Transport Processes and Phase Transitions", Tronheim, 1993

20. "Complex Dynamic Behavior in Oxidation Catalytic Reactions", 3^rd *Intern. Conf on* "Far - From Equilibrium Dynamics of Chemical Systems", Warsaw, 1993

21. "Dynamics and Thermodynamics of Complex Catalytic Reactions. New Results", *Gordon Research Conf.,* Irsee, Bavaria, 1994

22. "Mathematical Modeling of the Catalysts Quality Testing", with S.I. Spivak, *X^th Intern. Conf. of the Israel Society for Quality,* Jerusalem, 1994

23. "Mathematical Models of Non-Linear Catalytic Reactions", with M.Z. Lazman, *Intern. Congress on Industrial and Applied Mathematics,* Hamburg, 1995

24. "Critical Phenomena and Self - Organization", *The Second Intern. Conf. on Non-Steady - State Processes in Catalysis"*, St.Louis, Sept.10-13, 1995

25. "Self - Organization in Heterogeneous Catalysis", *Intern. Conf.* "Criteria of Self - Organization in Physical, Chemical and Biological Systems", Suzdal', 1995

26. "Modeling of Commensurate and Incommensurate Structures in the System "Adsorbent - Adsorbate", with S.O. Shekhtman, *Intern. Conf.* "Criteria of Self - Organization in Physical, Chemical and Biological Systems", Suzdal', 1995

27. "Temporal Self - Organization in Oregonator Model: Influence of the Reversibility", with V.A. Chavrus', *Intern. Conf.* "Criteria of Self - Organization in Physical, Chemical and Biological Systems", Suzdal', 1995

28. "A Thermodynamic Approach to Atmospheric Chemical Processes Analysis", with Yu.V. Barzilovich, III^rd Intern. Congress and Exhibition of Odours and VOC's Emissions, Paris, 1995

29. "New Model of the Catalyst Reconstruction", with S.O. Shekhtman, *Second European Congress on Catalysis* (EUROPACAT-II), Maastricht, 1995

30. "New Model of Surface Reconstruction on an Orderness in the Adsorbed Layer", with S.O. Shekhtman, *11th Intern. Congress on Catalysis: 40th Anniversary*, June 30-July 5, 1996, Baltimore, 1996

31. "New Correlations for Determination of Transport and Kinetic Parameters in TAP Pulse Response Experiment", with P. Phanawadee, Y. Schuurman, J.T. Gleaves, American Institute Chemical Engineering 1996 Annual Meeting, Chicago, November 10-15, 1996

32 "Kinetic Hysteresis in Catalytic Oxidation Reaction:Dependencies: Region of Existence and Experimental Reproducibility", with S.N. Balely, M.Z. Lazman, V.A. Vonsyatskii, American Institute Chemical Engineering, 1996 Annual Meeting, Chicago, November 10-15, 1996

33. "Non - Linear Steady - State Kinetics of Complex Catalytic Reactions: Theory and Application", with M.Z. Lazman, American Institute Chemical Engineering 1996 Annual Meeting, Chicago, November 10-15, 1996

34. "TAP Investigation of High Vacuum Transport Phenomena: One Dimensional Model Validity and New Method for Parameter Determination", with I.N. Katz, P. Phanawadee, J.T. Gleaves, American Institute Chemical Engineering 1996 Annual Meeting, Chicago, November 10-15, 1996

35. "New Method of Non - Steady-State Catalyst Characterization: An Interrogative Kinetics Approach", with J.T. Gleaves, P. Phanawadee, *NAM'97* "15th North American Catalysis Society Meeting", Chicago, May 18-23, 1997

36. "Highly Selective VPO Catalysts for n-Butane Oxidation: The Nature of the Active/Selective Phase", with D. Dowell, J.T. Gleaves, Y. Schuurman, *NAM'97* "15th North American Catalysis Society Meeting", Chicago, May 18-23, 1997

37. "The Exact Computational Technology in Chemical Problems", with M.Z. Lazman, Conf. "*Chemical Reaction Engineering VI: Reactor Engineering for Sustainable Processes and Products",* Banff, June 8-13, 1997

38. "The Catalyst Quality Control System", with S.I. Spivak, 29th Exhibition - Congress "*International Meeting on Chemical Engineering, Environm*ental *Protection* and *Biotechnology (ACHEMA 97)*", Frankfurt at Main, June 9-14, 1997.

39. "Kinetics and Thermodynamics of Insignificantly Perturbated Chemical Systems", Marian Smoluchowski Symposium on Statistical Physics, Zakopane, Poland, Sept. 1-10, 1997

40. "Unsteady-State Characteristics of n-Butane Oxidation VPO Catalysts: An Interrogative Kinetics Approach", with J.T. Gleaves, D.Dowell, Y. Schuurman, Am. Inst. Chem. Eng. 1997 Annual Meeting, Los Angeles, November 16-21, 1997
41 "Moment-Based Analysis in Transient Response Catalytic Studies (TAP Experiment)", with S.O. Shekhtman, J.T. Gleaves, American Institute Chemical Engineering 1997 Annual Meeting, Los Angeles, November 16-21, 1997

42. "Thermodynamics and Kinetics of Insignificantly Perturbated Catalytic Systems: TAP Studies", with J.T. Gleaves, XXth IUPAP International Conference on Statistical Physics (STATPHYS 20), Paris, July 20-25, 1998.

43. "Time - Length" Correspondence in Human Perception: Experiment, Primary Interpretation", with L.I Soyfer, XXth IUPAP International Conference on Statistical Physics STATPHYS 20, Paris, July 20-25, 1998.

44. "TAP Response Studies of Heterogeneous Catalytic Reactions", with S.O. Shekhtman, J.T. Gleaves, 13th International Congress of Chemical and Process Engineering CHISA' 98, Praha, Czech Republic, August 23-28, 1998.

45. "Thin - Zone TAP-Reactor. Theory and Application", with S.O. Shekhtman, J.T. Gleaves and S.Chen, 13th International Congress of Chemical and Process Engineering CHISA' 98, Praha, Czech Republic, August 23-28, 1998

46. "TAP Dynamics, The Third Strategy of Heterogeneous Kinetics", with J.T. Gleaves, American Institute of Chemical Engineeris: 1998 Annual Meeting, Miami Beach, Florida, November 15-20, 1998

47. "TAP Response Studies of Complex Catalytic Reactions Revealing", with S. Chen, J.T. Gleaves and S.O. Shekhtman, American Institute of Chemical Engineers:1998 Annual Meeting, Miami Beach, Florida, November 15-20, 1998.

48. "Thin - Zone TAP Reactor. Theory and Application, " with S. O. Shekhtman, J.T. Gleaves, S. Chen, The 16th Meeting of the North American Catalysis Society, Boston, May 30 - June 4, 1999.
49. "A New Method for Determining Gas Diffusivities in the Complex Porous Media Using TAP Pulse Response Experiment", with S.O. Shekhtman, J. T. Gleaves, The 16th Meeting of the North American Catalysis Society, Boston, May 30 - June 4, 1999.

50. "A New Method for Determining the Number of Active Sites on Complex Catalysts Using TAP Pulse Response Experiment", with J. T. Gleaves, S. O. Shekhtman, 16th Meeting of the North American Catalysis Society, Boston, May 30 - June 4, 1999

51. "How to Reveal a Mechanism of Complex Heterogeneous Reaction Using TAP-Studies", with J.T. Gleaves, S.O. Shekhtman, American Institute of Chemical

Engineers:1999, Annual Meeting, Dallas, Texas, October 31 - November 5, 1999.

52. "Knudsen Diffusivity in a Channel with "Rough" Wall Surface", with R .Feres, J.T. Gleaves, American Institute of Chemical Engineers:1999, Annual Meeting, Dallas, Texas, October 31 - November 5, 1999.

53. "Determination of the Active Site Number During the Reaction (TAP Pulse-Response Experiment)", with J.T.Gleaves, S.O. Shekhtman, Gordon Conference "Catalysis", June 2000

54."Space Chemical Reactor of Protoplanetary Disc", with V.N . Snytnikov, J.T. Gleaves, V.N. Parmon, COSPAR, Poland, 16-23 (2000)

55. "Protoplanetary Disc as a Space Chemical Reactor", with V.N. Parmon, J.T. Gleaves, V.N. Snytnikov, G.I Dudnikov, S.A. Nikitin, V.O Stoyanovskaya, V.A. Vzhivkov, and V.S. Zakharenko, *The First Annual JURISS Conference*, Washington D.C., July 16-18 (2001)

56. "Globally Accessible Lab for the Development and Analysis of Catalysis (GLADAC)", with J.T. Gleaves, H.O Moser, The Third International Conference on Synchrotron Radiation in Material Science, *SRMS-3,* Singapore, 2002

57. "New Method for Revealing Complexity : a State-Defining Approach", The Thirteen Interdisciplinary Conference on Science and Culture", with J.T. Gleaves, S.O. Shekhtman, Kentucky State University, Frankfort, Kentucky, 2002.

58. "State-Defining Experiment in Chemical Kinetics", with S.O. Shekhtman, J.T. Gleaves, The International Workshop on Mathematics in Chemical Kinetics and Engineering, Ghent, Belgium(2002)

59. "The Principle of Critical Simplification in Chemical Kinetics: a Case Study", with I. Mareels, M.Z. Lazman, The International Workshop on Mathematics in Chemical Kinetics and Engineering, Ghent, Belgium (2002)

60. "Space Chemical Reactor of Protoplanetary Disc", with V.N. Parmon, V.N. Snynikov, J.T. Gleaves, S.A. Nikitin, V.A. Vshivkov, *Goldschmidt 2002*: August 18-23, Davos, Switzerland (2002)

61. G. Yablonsky, A. Ray, "Germinating Seed Problem- Approach for Chemical Engineering", 2nd Symposium on Teaching and Learning in Higher Education, Singapore, September 2002.

62. S.O. Shekhtman, G.S. Yablonsky and J.T. Gleaves, "State-Defining Experiment in Chemical Kinetics", presented by S.O. Shekhtman at the International Workshop on Mathematics in Chemical Kinetics and Engineering, May 5 – May 9, Ghent ,Belgium (2002).

63. R.R. Fushimi, S.O. Shekhtman, A. Gaffney, S. Han, G.S. Yablonsky, J.T. Gleaves, "TAP Studies of Alkane Oxidation over Multi-Component Metal Oxide Catalysts Under Normal and Vacuum Conditions", presented by R.R. Fushimi at the 18th Meeting of the North American Catalysis Society, June 1 – June 7, 2003, Cancun, 26 (2003).

64. R.R. Fushimi, J.T. Gleaves, S.O. Shekhtman, G.S. Yablonsky, "TAP Reactor Studies of Hydrocarbon of Hydrocarbon Oxidation over Surface Modified VPO Catalysts", presented by J.T. Gleaves at the 226th ACS National Meeting, September 2003, New York

65. G.S. Yablonsky (with S.O. Shekhtman, J.T. Gleaves, P.Phanawadee), "Kinetic Characterization of Multicomponent Industrial Catalysts in Thin-Zone Multi-Pulse TAP Experiment", Fourth International Conference on Unsteady-State Processes in Catalysis, October, 2003, Montreal, Quebec, Canada

66. G.S. Yablonsky (with S.O. Shekhtman, J.T. Gleaves, R. Fushimi), "Complex Catalyst Characterization by "State-by-State Transient Screening", Multi-Pulse TAP Approach", Fourth International Conference on Unsteady-State Processes in Catalysis, October 2003, Montreal, Quebec, Canada

67. G.S. Yablonsky (with R. Feres), "Knudsen Cosine Law in Gas Transport, and Random Billiards", Fourth International Conference on Unsteady-State Processes in Catalysis, October, 2003, Montreal, Quebec, Canada

68. G.S. Yablonsky, "Non-steady-state catalyst characterization", presented at the EUROKIN and MaCKiE workshop, May 2005, Lyon

69. G.S. Yablonsky, "Diffusion as a tool for non-steady-state catalyst characterization", presented at the Workshop" Microkinetic analysis as a tool for evaluation of oxide catalysts", Berlin, September, 2005

70. G. S. Yablonsky and J. T. Gleaves, 'Mathematical modeling of catalytic reactions: results and tendencies", presented at the International Conference on Modeling in Chemical and Biological Engineering Sciences, October 2006

71. G. S. Yablonsky (with R. Fushimi, M. Rude, and J. T. Gleaves), "Atomic Tailoring and Kinetic Characterization of Pd containing Catalysts based on the TAP – technique", presented at the Fifth International Conference on Unsteady-State Processes in Catalysis, November 22-25, 2006, Suita-City, Japan

72. X. Zheng, J. Parai, J. Swisher, J.T. Gleaves, G.S. Yablonsky, "Single Particle Experiments with Temporal Analysis of Products", presented at the Chemical Reaction Engineering Laboratory (CREL) Annual Meeting at Washington University in St. Louis, October 2006.

73. J. Parai, X. Zheng, J. Swisher, J.T. Gleaves, G.S. Yablonsky, "CO Oxidation on Single Particle Supported Pt", presented at the Chemical Reaction Engineering Laboratory (CREL) Annual Meeting at Washington University in St. Louis, October 2006.

74. X. Zheng, J. Parai, J.T. Gleaves, G.S. Yablonsky, "Temporal Analysis of Products-Single Particle (TAP-SP) Reactor", presented at the Catalysis Club of Chicago Spring Symposium, May 2007.

75. J. Parai, X. Zheng, G.S. Yablonsky, E. Redekop, "TAP Delta Input Pulse Intensity Studies", presented at the Catalysis Club of Chicago Spring Symposium, May 2007

76. J.T. Gleaves, G.S. Yablonsky, X. Zheng, J. Parai, E.Redekop, "Catalytic Nanocircuits to Industrial Processes", presented at the International Symposium on Energy and Environment at Washington University in St. Louis, May 2007.

77. R. Fushimi, G. S. Yablonsky, J.T. Gleaves, "Combining TAP-2 Experiments with Atomic Beam Deposition", presented at the 20th North American Catalysis Meeting, June 2007, Houston, Texas.

78. X. Zheng, J. Parai, J.T. Gleaves, G.S. Yablonsky, "Single Particle Temporal Analysis of Products Reactor", presented at the 20th North American Catalysis Meeting, June 2007, Houston, Texas.

79. R. Fushimi, J.T. Gleaves, G.S. Yablonsky, X. Zheng, J. Parai, "Isotopic Switching Demonstrated using Pump-Probe TAP-2 Experiments", presented at the 20th North American Catalysis Meeting, June 2007, Houston, Texas

80. G. S. Yablonsky, J.T. Gleaves, S. Shekhtman, R. Fushimi, D. Constales, A. Gaffney, M. Clark, S. Han, "Non-Steady State Catalytic Activity Characteristics using TAP-Studies", presented at the 20th North American Catalysis Meeting, June 2007, Houston, Texas.

81. Xiaolin Zheng, J.T. Gleaves, G. Yablonsky**,** T. Brownscombe, "Needle in a Haystack Catalysis - An Experimental Study using Temporal Analysis of Products (TAP)", presented at the AIChE 2008 Spring National Meeting, New Orleans, LA, April 2008.

82. G. Yablonsky, J.T. Gleaves, Xiaolin Zheng, R. Feres, D. Constales, "High Throughput of Non Steady-State Catalytic Activity Characteristics using TAP Studies", presented at the AIChE 2008 Spring National Meeting, New Orleans, LA, April 2008

83. G. Yablonsky, J.T. Gleaves, Xiaolin Zheng, R. Feres, D. Constales, "Non-Steady-State Monitoring of Catalytic Activity Characteristics in TAP Studies",

presented at the 1st International Combinatorial Catalysis Symposium, Daejon, Korea, July 2008

84. E Stepanova, M. Strube, G. Yablonsky**,** K. Pehrson, S. Shuman (July 2008), "Studying Explicit and Implicit Ethnic Attitudes and Ethnic Categorization Effects in the Russian Federation", presented at the XXIX International Congress of Psychology, Berlin, Germany

85. J.T. Gleaves, G.S. Yablonsky, X. Zheng, "Bridging the Gap – From Particle to Fluid Bed", Chemical Reaction Engineering Laboratory (CREL) Annual Meeting at Washington University in St. Louis, MO, October 2008.

86. L.N. Pelster, I.Z. Kiss, G. Yablonsky, "Frequency of Electrochemical Oscillators: Experiments", 43rd American Chemical Society Midwest Regional Meeting , Oct. 8-11, 2008, Kearney, Nebraska

87. X. Zheng, J.T. Gleaves, G.S. Yablonsky, T. Brownscombe, "Needle in a Haystack Catalysis – New Developments using Pump-Probe TAP Experiments", AIChE 2008 Annual Meeting, Philadelphia, PA, November 2008.

88. X. Zheng, J.T. Gleaves, G.S. Yablonsky, T. Brownscombe, "Needle in a Haystack Catalysis – New Developments using Pump-Probe TAP Experiments", AIChE 2008 Annual Meeting, Philadelphia, PA, November 2008.

89. J.T. Gleaves, **X**. Zheng, G.S. Yablonsky, P.L. Mills, "Bridging the Pressure Gap – Catalytic Oxidation at Steady-State and Non-Steady-State Conditions", American Chemical Society (ACS) National Meeting, Salt Lake City, UT, March 2009.

90. Skeen, S.A., Yablonsky, G., Axelbaum, R.L., "Effects of oxygen-enhanced combustion and fuel-dilution on the kinetics of soot formation in non-premixed flames of ethylene", 6th U.S. National Combustion Meeting, Ann Arbor, MI, May 17-20, 2009

91. X. Zheng, J.T. Gleaves, G.S. Yablonsky, "Needle in a Haystack Catalysis", 21st North American Catalysis Society Meeting, San Francisco, CA, June 2009

92. G.S. Yablonsky, J.T. Gleaves, X. Zheng, R. Fushimi, P. Mills, R. Feres, D. Constales, "High Throughput Monitoring of Non-Steady-State Catalytic Characteristics using Temporal Analysis of Products (TAP)", 8th World Congress on Chemical Engineering, Montréal, Canada, August 2009

93. G.S. Yablonsky, R. Pilasombat, J.P. Breen, R. Burch, S.Hengrasmee, "Cycles across an Equilibrium: Studies of the Reverse and Forward WGS-Reaction", 8th World Congress on Chemical Engineering, Montréal, Canada, August 2009

94. S. Skott, G. Yablonsky, R. Axelbaum, "A comparison of soot precursor

generation: propargyl chemistry and permanently blue flames at high Z st", presentation at ESS Meeting, EES Meeting, Oct. 21 2009, University of Maryland

95. G. Yablonsky, D. Constales, G. B. Marin, "Coincidences in Chemical Kinetics", The 11th International Experimental Chaos and Complexity Conference, Lille, France, June 2010

96. E. Redekop, G. Yablonsky, D. Constales, J. T, Gleaves, Xiaolin Zhang, J. M. Veith, "Non-Steady-State Catalyst Characteriization with Thin-Zone TAP Experiments",
International - Mexican Congress on Chemical Reaction Engineering, Mexico, June 2010

98. Xiaolin Zheng, G. Yablonsky, J. Gleaves, and G. Veith, "TAP Studies of CO and O_2 adsorption on Au/SiO_2 catalysts prepared by Magnetron Sputtering",
International Symposium on Chemical Reactor Engineering, (ISCRE21), June 2010

99. G. Yablonsky, J. T. Gleaves, R. Fushimi, "Teaching Sustainability via Catalysis" International Symposium on Engineering Education (ISEE), Cork, Ireland , July 2010

100. K. Mitchell, K. McCune, G. Yablonsky, R. Gharabagi, A. Ray, "Teaching a Course "Technology and Energy around you",
International Symposium on Engineering Education (ISEE), Cork, Ireland , July 2010

101. R. Fushimi, J. Gleaves, P. Mills, G. Yablonsky, P. Mills **"**Development of catalyst and transport-bed solar reactor for conversion of CO_2 and methane to syngas", "Catalysis", Gordon Research Conference, June 27-July 2, 2010, New London, NH

102. C. Lo, J. Gleaves, G. Yablonsky, M. Dudukovic, and M. Sheintuch, "Integrated nanoscale catalyst for the conversion of CO_2 to chemicals and fuels", Symposium on Global Energy Future, October 1-5, 2010

103. A. Gaffney, R. Fushimi, G. Yablonsky, and J. Gleaves "A new catalyst design methodology: integrated atomic level modification and intrinsic kinetic characterization", Symposium on Global Energy Future, October 1-5, 2010 (poster)

104. J. Gleaves, G. Yablonsky, and R. Fushimi, "Development of coupled instrumental array for advanced catalyst fabrication", Symposium on Global Energy Future, October 1-5, 2010 (poster)

105. R. Fushimi, A. Gaffney, G. Yablonsky, and J. Gleaves, "Solar catalyst reforming utilizing greenhouses gases", Symposium on Global Energy Future, October 1-5, 2010 (poster)

106. M. Dudukovic, P. Ramachandran, C. Lo, J. Gleaves, and G. Yablonsky, "Multi-scale reaction engineering for clean environment and environment", Symposium on Global Energy Future, October 1-5, 2010 (poster)

107. E. Redekop, G. Yablonsky, P. Ramachandran, J. T. Gleaves, "Non-steady-state catalyst characterization with thin zone TAP experiments", AIChE Meeting, November 2010

108. S. Pietrzyk, and G. Yablonsky, "Analysis of TAP-reactor procedures using COMSOL", European COMSOL Conference, Paris, 17-19 November 2010

109. R. Fushimi, S. Shekhtman, G. Yablonsky, J. Gleaves, C. A. Jones and A. M. Gaffney, "Pulsed-TPR and complex microporous diffusion characterization using TAP-reactor system", the 14th Meeting of the North East Corridor Zeolite Association (December 10, 2010)

110. E. Redekop, G.S. Yablonsky, D. Constales, P.A. Ramachandran, J.T. Gleaves, "Application of the Y-procedure to a single-site reversible adsorption CO on polycrystalline Pd", the 241th American Chemical Society Meeting, Session "Temporal Analysis of Products (TAP) - Studies for Sustainability, Energy and the Environment" (Anaheim, CA, March 2011)

111. R. Fushimi, J.T. Gleaves, G. Yablonsky, A.M. Gaffney, "Atomic beam preparation of Pd/SiO_2 catalysts. Surmising striking features from kinetic data using TAP", the 241th American Chemical Society Meeting, Session "Temporal Analysis of Products (TAP) - Studies for Sustainability, Energy and the Environment" (Anaheim, CA, March 2011)

112. P. Phanawadee, N. Pongboutr, W. Soikham, C. Jarungmanorom, G. Yablonsky, D.Constales, and J. Limtrakul, "Characteristics of Catalyst Change in State-Altering TAP Knudsen Pulse Response Experiments with High Pulse Intensity: Numerical Simulation Results for Irreversible Adsorption Cases", International Workshop on Mathematics in Chemical Kinetics and Engineering, 2011 (MaCKiE 2011) Heidelberg, Germany, May 2011.

113. D. Constales, G.S. Yablonsky, V. Galvita, and G. B. Marin, "Reciprocity and transport correction for thermodynamictime-invariances in thin-zone TAP reactors", International Workshop on Mathematics in Chemical Kinetics and Engineering, 2011 (MaCKiE 2011) Heidelberg, Germany, May 2011.

114. G. Yablonsky, E. Redekop, D. Constales, P. Ramachandran, and J. T. Gleaves, Towards unraveling the complex catalytic mechanisms via transient kinetic data: the Y-procedure methodology, 7th International Conference on Chemical Kinetics (ICCK), MIT (Cambridge), July 2011

115. Michael J. Hankins, Gregory S. Yablonsky and Istvan Z. Kiss, "Reciprocal Kinetic Curves in Electrochemical Systems", Regional Conference of American Chemical Society, St. Louis, 2011

116. John T.Gleaves, Rebecca Fushimi, Gregory S. Yablonsky, Evgeniy A. Redekop, Vladimir Galvita, Guy Marin, Michael Harod, Xiaolin Zheng, "Newest evolution of the temporal analysis of products reactor system: TAP-3E combining catalyst synthesis with kinetic characterization", presentation at the ICC 2012 Congress 15th International Congress on Catalysis 2012, Munich, German, July 1-6, 2012.

117**.** Gregory Yablonsky, Evgeniy A. Redekop, Denis Constales, Xiaolin Zheng, Gabriel Veith, Rebecca Fushimi, Guy B. Marin, J.T. Gleaves, "New results in non-steady-state catalyst characterization and mechanism decoding using the Temporal Analysis of Products (TAP) approach", presentation at the ICC 2012 Congress 15th International Congress on Catalysis 2012, Munich, German, July 1-6, 2012.

118. Gregory S. Yablonsky, Evgeniy A. Redekop, Denis Constales, Xiaolin Zheng, Gabriel Veith, Rebecca Fushimi, Guy B. Marin, and John T. Gleaves, „New results in non-steady-state catalyst characterization and mechanism decoding using the Temporal Analysis of Products (TAP) approach*"*, ISCRE 22 (International Symposium on Chemical Reaction Engineering), Maastricht, Netherlands, Conference, September3-5, 2012

119. Gregory Yablonsky, "Grasping Complexity", Presentation at the "240-Workshop" on Chemistry Frontiers, University of Chicago, September 2012

120. Evgeniy A. Redekop, Gregory S. Yablonsky, Denis Constales, Palghat A. Ramachandran, John T. Gleaves, and Guy B. Marin, "Towards Developing a Systematic Strategy for Elucidating Complex Catalytic Mechanisms Based on Transient Pulse-Response Kinetic Data", International Conference "Mathematics in Chemical Kinetics and Engineering" (MaCKiE-2013), Chennai, India, February4-6, 2013.

121. Denis Constales, Gregory S. Yablonsky, and Guy B. Marin, "The C-Matrix: Augmeentation and Reduction in the Analysis of Chemical Composition and Structure", International Conference "Mathematics in Chemical Kinetics and Engineering" (MaCKiE-2013), Chennai, India, February4-6, 2013.

122. Denis Constales, Gregory. S. Yablonsky, and Guy B. Marin, Kinetics 2. 0: New Patterns of Kinetic Behavior: Intersections, Coincidences and Reciprocal Time Invariances, 3rd North American Symposium on Chemical Reaction Engineering (NASCRE-3) March 17-20, 2013, Houston, Texas.

123. Evgeniy A. Redekop, Gregory S. Yablonsky, Vladimir V. Galvita, Denis Constales, Rebecca Fushimi, John T. Gleaves, Guy B. Marin, Momentary Equilibrium in Transient Kinetics and its Application for Estimating the Number of

Catalytic Sites, 3rd North American Sumposium on Chemical Reaction Engineering (NASCRE-3), Houston, USA, 16/03/2013 to 20/03/2013

124. Vladimir V. Galvita, Evgeniy A. Redekop, Gregory S. Yablonsky, Denis. Constales, Guy B. Marin, Transport and reaction processes of CO oxidation over CuO-CeO2/Al2O3 in TAP experiments: the influence of catalyst dilution, 7th World Congress on Oxidation Catalysis (WCOC-7), Saint Louis, USA, 9/06/2013 to 12/06/2013

125. G. S. Yablonsky, J. T. Gleaves, R. Fushimi, E.Redekop,"'Chemical Calculus': A New Approach for Kinetic Characterization of Active Materials and Complex Mechanism Decoding", 7th World Congress on Oxidation Catalysis (WCOC-7), Saint Louis, USA, 9/06/2013 to 12/06/2013

126. Presentations of two posters at the Regional St. Louis Nano-Symposium (together with R. Fushimi), 2013, May.

127. Fushimi, R., Gaffney, A., Yablonsky, G., Gleaves, J. "Discovery of unique catalytic architectures using *Incremental Kinetic Synthesis*: A new methodology for catalyst development" 1st International Symposium on Catalytic Science and Technology in Sustainable Energy and Environment, Tianjin, China, October 8-10, 2014

128. G. Yablonsky, E. Redekop, D. Constales, Xiaolin Zheng, R. Fushimi, G. Veith, R. Fushimi, G.B. Marin, and J.T. Gleaves, 5th International Symposium "The Role of Research Universities in Addressing Global Challenges" (McDonnell International Scholars Academy)"New Results in Non-Steady-State Catalyst Characterization using the Temporal Analysis of Products (TAP) Approach ('Chemical Calculus') October 16-19, 2014

129**.** G. Yablonsky, D. Constales, G. Marin, "Commensurability versus Hierarchy in Chemical Kinetics (Joint European Thermodynamic Conference, May 2015)

130. G. Yablonsky, "A Hidden History of Time in Chemistry" (Joint European Thermodynamic Conference, May 2015)

131. G. Yablonsky, V.Gol'dshtein, and N.Krapivnik, "Bifurcational Parametric Simplification in Chemical Kinetics", International Conference on Chemical Kinetics (ICCK), June-July 2015

132. G. Yablonsky, E. Redekop, J. T. Gleaves, Denis Constales, and G. B. Marin, "Rate-Reactivity Model (RRM): a New Basis for Non-Steady-State Kinetic Characterization of Heterogeneous Catalysts", International Conference on Chemical Kinetics (ICCK), June-July 2015

133. Wendong Wu, G. Yablonsky, R. Axelbaum, "New Observation of Water Gas

Shift Equilibrium in Diffusion Flames", International Conference on Chemical Kinetics (ICCK), June-July 2015

134. R. Feres, M. Wallace, G. Yablonsky, A. Stern, "Explicit Formulas for Reaction Probability in Reaction-Diffusion Experiments", Workshop "Mathematical Conference in Chemical Kinetics and Chemical Engineering" (MACKiE-2015, Ghent, June-July 2015)

135. V. Bykov, A. Gorban, G. Yablonsky, Plenary Seminar: 135 years in chemical kinetics: Bykov-Gorban-Yablonsky's problem, Workshop "Mathematical Conference in Chemical Kinetics and Chemical Engineering" (MACKiE-2015, Ghent, June-July 2015)

136. C. Sprung, G. S. Yablonsky, R. Schlögl, A. Trunschke, "A Qualitative Kinetic Analysis of Steady-State Selective Oxidation Process: Role of Water", 12th European Congress on Catalysis – EuropaCat-XI, Kazan, Russia, 30 August – 4 September, 2015

138. R. Fushimi, E. Redekop, C. Nyapete , T. Korakianitis , J. Gleaves , G.Yablonsky,"A Kinetic Fingerprint for Distinguishing Porous Diffusion", session "Catalyst preparation and characterization", 12th European Congress on Catalysis – EuropaCat-XI, Kazan, Russia, 30 August – 4 September, 2015

139. G. Yablonsky, D. Constales, D. Branco Pinto, and G. B. Marin "Joint Kinetics: New Relationships between Thermodynamic and Kinetic Characteristics", American Chemical Society Meeting, San-Diego, 2016, March 13-17, section "Computational Chemistry Across Catalysis"

140. C. Sprung, G. Yablonsky, "Multi Scale Kinetics for the Selective Oxidation of Propane to Acrylic Acid: Multi-route Mechanism", Natural Gas Conversion Symposium, NGCS 11, Tromse, Norway, 2016, June 5-9

141. G. Yablonsky, D. Constales, D. Branco Pinto, V. Galvita, E. Redekop, G. B. Marin, "Joint Kinetics**:** A New Kinetic Strategy For Heterogeneous Catalysis" XXII International Conference on Chemical Reactors, "CHEMREACTOR-22", 2016, September 13-17, London

142. S. Tan, S. Saha, L. Wang, R. Fushimi, G. Yablonsky, J. Gleaves and D. Li, "Experimentally Probing Ligand-Strain Effect via a Novel Catalyst Platform", AIChE Annual Meeting, San Francisco, November 13-16, 2016.

143. Gregory S. Yablonsky, Daniel Branco P., Denis Constales, Guy Marin "Perturbed Equilibrium: New Results in Joint Kinetics",14th Joint European Thermodynamics Conference, Budapest Hungary, 21 -25 May 2017

144. Xuebin Wang, Gregory S. Yablonsky, Zhiwei Yang, Adewale Adeosun, Houzhang Tan, Richard L. Axelbaum
"A Skeletal Kinetic Mechanism for the "SO_x -NO_x-O_2-H_2O-CO_2" System at Elevated Pressures", MACKiE 2017, Budapest, Hungary, 25-27 May

145. "Extracting kinetic parameters from intersections in CSTR- dependences"
Daniel Branco P., Gregory S. Yablonsky, Guy B. Marin, Denis Constales, MACKiE 2017, Budapest, Hungary, 25-27 May

146. "Advanced non-steady method for reaction rate/concentration analysis: ammonia decomposition example", Yablonsky G., Constales D., Lwin S., Kunz R., Wang L., Fushimi R., ISCRE-25, Florence 2018, 20-23 May, Italy

147. "New Insights in Chemical Relaxations: Invariants and Conservatively Perturbed Equilibrium", Daniel Branco P., Gregory S. Yablonsky, Guy B. Marin, Denis Constales, ISCRE-25, Florence, 2018, 20-23 May, Italy.

148. "Theoretical Investigation of CO Adsorption and Disproportionation on Mo_2C Nanotubes Supported Pt Nanoparticles", Zongtang Fang, Lucun Wang, M. Ross Kunz, Shuai Tan, Dangmei (Katie) Li, Ember Sikorski, Rebecca Fushimi and Gregory Yablonsky, 2018 AIChE Annual Meeting, Oct. 28-Nov. 2, 2018, Pittsburgh, USA.

149."Heterogeneous Catalysis Kinetic Characterization via Sparse Graphs", M. Ross Kunz, Yixiao Wang, Zontang Fang, Andrew Medford, Gregory Yablonsky, and Rebecca Fushimi,
2018 AIChE Annual Meeting, Oct. 28-Nov. 2, 2018, Pittsburgh, USA.

c) <u>Presentations at Soviet Union and Russian Meetings.</u>

1. "Modeling of the Process of Vynilchloride Heterogeneous Synthesis", with V.S. Beskov, M.G. Slin'ko, IInd Soviet Union Conf. on Chemical Reactors, Novosibirsk, 1966.

2. "Calculation of Maximal Diameter of Chemical Reactor Tube", with Yu.Sh. Matros, M.G. Slin'ko, IIIrd Soviet Union Conf. on Chemical Reactors, Novosibirsk-Kyiv, 1970.

3. "Mathematical Simulation of Vinyl Chloride Synthesis Processs", with A.I. Gelb'stein, M.G. Slin'ko, IVth Soviet Union Conf. on Chemical Reactors, Novosibirsk, 1971.

4. "Optimization of the Pseudo-Steady-State Catalytic Processes", with V.I. Bykov, Conf. "*Mathematical Methods in Chemistry",* Novosibirsk, 1973

5. "Multi-Extremality in the Theoretical Optimization of Catalytic Processes", with V.I. Bykov, Conf. *"Mathematical Methods in Chemistry",* Novosibirsk, 1973

6. "Random Methods in the Identification of Kinetic Models", with V.I. Lobov, S.I. Spivak, Conf. *"Mathematical Methods in Chemistry",* Novosibirsk, 1973

7. "Characteristics of Complex Chemical Reactions", with V.I. Dimitrov, V.I. Bykov, IVth Soviet Symposium on Combustion and Explosion, Chernogolovka, 1974

8. "Identification of the Kinetic Model of CO-Oxidation on La_2O_3 - Catalyst", with T.S.Borovenskaya, Vth Soviet Conf. on Chemical Reactors, Ufa, 1974

9. "Mathematical Modeling and Qualitative Investigations of Catalytic Systems", with V.I. Bykov, T.A. Akramov, 3rd Soviet Union Conf. on Theoretical Cybernetics, Novosibirsk, 1974

10. "Qualitative Investigation of the Open Chemical System", with T.A. Akramov, Vth Soviet Union Conf. on Chemical Reactors, Ufa, 1974

11. "Identification of Kinetic Models Using Spline-Functions", with E.N. Rudenko, Vth Soviet Union Conf. on Chemical Reactors, Ufa, 1974

12. "Heat Equations in the Pseudo-Homogeneous Model of Fixed Bed", with Yu.L. Vyatkin, Vth Soviet Union Conf. on Chemical Reactors, Ufa, 1974

13. "Investigations of Dynamic Properties of Catalytic System", with T.A. Akramov, V.I. Bykov, Conf. *"Mathematical Methods in Chemistry",* Novosibirsk, 1975

14. "Investigations of Dynamic Properties of Non- Ideal Systems", with T.A. Akramov, V.I. Bykov, Conf. *"Mathematical Methods in Chemistry"*, Novosibirsk, 1975

15. "Pseudo-Steady-State-Hypothesis for Catalytic Systems", with T.A. Akramov, Conf. *"Mathematical Methods in Chemistry"*, Novosibirsk, 1975

16. "Dynamic Properties of Combustion Systems", with T.A. Akramov, V.I. Bykov, Soviet Union Conf. on Combustion Theory, Moscow, 1975

17. "Correlation between Properties of Complex Chemical Reactions", with N.A. Lar'kin, T.A. Akramov, Soviet Union Conf. on Kinetics of Catalytic Reactions *("Kinetics - 2")*, Novosibirsk, 1975

18. "Influence of the Mechanism Structure on Kinetic Characteristics of the Catalytic Reaction", with V.I. Bykov, T.A. Akramov, Vth Soviet Symposium on Combustion

and Explosion, Odessa, 1977

19. "Analysis of the Instationary Regimes of Catalytic Surface", with Yu.A. Chumachenko, Yu.Sh. Matros, Soviet Union Conf. *"Non-Steady-State Catalysis-1"*, Chernogolovka, 1979

20. "Slow Relaxations and Critical Phenomena in Catalytic Reactions", with A.N. Gorban', V .M. Cheresiz, IIIrd Soviet Union Conf. *"Mathematical Methods in Chemistry"*, Moscow, 1980

21 "Signal-Graphs for Analysis of Steady - State and Relaxation Characteristics of Catalytic Reaction", with V.A. Yevstigneev, V.I. Bykov, IIIrd Soviet Union Conf. *"Mathematical Methods in Chemistry"*, Moscow, 1980

22. "Analysis of Influence of Bulk Diffusion on Relaxation Characteristics of Catalytic Reaction", with O.A. Machotkin, V.I. Elokhin, IIIrd Soviet Union Conf. *"Mathematical Methods in Chemistry",* Moscow, 1980

23. "A Correlation between Isotope Exchange and Chemical Relaxation", with A.N. Gorban', Soviet Union Seminar *"Isotope Methods in Catalytic Studies",* Novosibirsk, 1981

24. "Catalytic CSTR-Reactor", with V.I. Bykov, V.I. Elokhin, Vth Soviet Union Conf. on Chemical Reactors, 1981

25. "Self-Oscillations in the Process of "n-Heptane-Isooctane" Oxidation", with V.I.Bykov, Yu.Ya. Stepanskii, Soviet Union Conf. *"Technological Combustion"*, Chernogolovka, 1981

26. "Slow Relaxation Domains in Catalytic Reactions", with V.I. Elokhin, A.N. Gorban', IIIrd All - Union Conf. on Heterogeneous Kinetics, Kalinin, 1980

27. "Analysis of General Steady-State Kinetic Equations (Linear Case)", with A.S. Noskov, IIIrd All - Union Conf. on Heterogeneous Kinetics, Kalinin, 1980.

28. "Computing Surface Processes", with L.V. Lutsevich, VIIth All - Union Conf. *"Computers in Molecular Spectroscopy and Chemical Investigations",* Novosibirsk, 1983

29. "Dependent Parameters of Steady - State Kinetic Models", with V.A. Yevstigneev, Conf. *"Models of Imitation and Optimization",* Novosibirsk, 1983

30. "Relaxation Peculiarities in Kinetic Models", with V.M. Gol'dstein, V.F. Kim, Conf. on Non-Equilibrium Thermodynamics and Its Application", Chernogolovka, 1984

31. "CO-Oxidation on Iridium and Its Simulation", with V.I. Savchenko, V.I. Elokhin, Vth Soviet Union Conf. on Catalytic Mechanisms, Moscow, 1986

32. "Mechanism of Ammonia Decomposition on Re", with A.P. Tsholatsh, V.I.Elokhin, VIth Soviet Union Conf. on Catalytic Mechanisms, Moscow, 1986
33. "Simulation of Catalytic Self-Oscillations Using Monte-Carlo Method", with L.V. Lutsevich, Soviet Union Conf. *"Self - Oscillations in Condensed Media",* Ufa, 1989

34. "Peculiarities of Self-Oscillations in the Catalytic Systems with Fast and Slow Steps", with M.Z. Lazman, Soviet Union Conf. *"Self - Oscillations in Condensed Media",* Ufa, 1989

35. "Self-Oscillations in Some Auto-Catalytic Systems", with M.D. Dongak, V.M. Loginov, Soviet Union Conf. *"Self-Oscillations in Condensed Media"*, Ufa, 1989

36."Calculation of Surface Equilibria Using Transfer-Matrix-Method", with A.V. Myshlyavtsev, N.S. Barsegyan, VIth Soviet Union Seminar *"Mathematical Methods in Chemical Equilibrium Theory",* Novosibirsk, 1989

37. "Application of Computer Algebra Methods for Transformation, Simplification and Analysis of Complex Chemical Models", with M.Z. Lazman, IIIrd Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory"*, Kyzyl, 1991
38. "Dynamics of Heterogeneous Catalytic Reactions", IIIrd Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory"*, Kyzyl, 1991

39. "Analysis of Monomolecular Adsorption on Hexagonal Lattice Using Transfer-Matrix-Method", with A.V. Myshlyavtsev, N.S. Barsegyan, IIIrd Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory",* Kyzyl, 1991

40. "Transfer-Matrix-Method in Surface Kinetics", with A.V. Myshlyavtsev, IIIrd Conf. *"Mathematical Methods in Chemical Kinetics and Combustion Theory",* Kyzyl, 1991

41. "Computer Algebra Methods Chemical Kinetics", Soviet Union Conf. "Mathematical Methods in Chemistry", Kazan', 1991

42. "Monte-Carlo Simulation of the Langmuir-Hinshelwood Mechanism", with L.V. Lutsevich, V.I. Elokhin, Conf. *"Kinetics - 5"*, Ivanovo, 1992

43. "Time - Length Correspondence in Human Perception: A Primary Mathematical Intrepretation of Psychological Experiment", with L.I. Soyfer Third Siberian Congress on Applied and Industrial Mathematics (INPRIM - 98), Novosibirsk, Russia, 1998

44. Gorban, A.N., Yablonsky, G.S. “Two faces of complexity”, Krasnoyarsk Conference on Complex Systems, Krasnoyarsk, Russia, November 2014

d) Academic lectures at universities and other organizations.

1. "Mathematical Models of Chemical Kinetics", Prague, Technological Institute, 1990

2. "Critical Phenomena Models in Heterogeneous Kinetics", Dept of Chem. Eng, Univ. of Minnesota, Minneapolis, 1991.

3. "Non - Linear Phenomena and Chemical Thermodynamics", Dept of Chemistry, Univ. of Chicago, 1991

4. "Simulation in Chemical Kinetics", Dept of Chem. Eng., Univ. of Rochester, 1991

5. "Mathematical Problems of Multiplicity of Steady States in Chemistry", Dept of Mathematics, Ben - Gurion Univ. of the Negev, Beer - Sheva, 1992

6. "Kinetic Models for Standartization of Catalysts", Seminar on Organic Chemistry and Chemical Technology, Israel Chem. LTD, TAMI, Haifa, 1992.

7. "Critical Phenomena in Oxidation Catalysis", Fritz-Haber -Institute, Berlin, 1992.

8. "Kinetic Models of Heterogeneous Catalysis", Dept of Chem. Eng, Washington Univ., St. Louis, 1993.
9. "Surface Phase Modeling", Dept. of Chemistry, Yagellon Univ., Cracow, 1993

10. "Non - Linear Steady - State Theory of Catalytic Reactions”, Dept of Chem. Eng, Ecole Polytechnique, Montreal (Quebec), Canada, 1994

11."Fingerpints in Chemical Kinetics", Dept of Chem. Eng., Washington Univ., St. Louis, 1996

12. "TAP Pulse Response Experiment: Theory and Application", Dept. of Chem. Eng., Univ. of California, Los Angeles, 1997

13. "Mathematical Problems of Heterogeneous Kinetics", Dept. of Mathematics, San Diego State Univ., San Diego, 1997

14. "Transient Kinetic Studies in Heterogeneous Catalysis", Materials Research Lab., SRI Intern., Menlo Park, 1997

15. "Estimation of the Heterogeneous Catalysis Role in Atmospheric Reactions", CAPITA Seminar, Washington Univ., St. Louis, 1997

16. "Interrogative Kinetics Approach", Dept. Chem. Eng., Techn. Univ. Hamburg-Harburg, Hamburg, Germany, 1997

17. "TAP-Studies in Heterogeneous Catalysis", Inst. Angew. Chemie, Abt. Katalyse. Berlin, Germany, 1997

18. "Transient Studies in Oxydation Catalytic Reactions", Ecole Polytechnique Federale de Lausanne, 1997

19. "Complexity in Heterogeneous Catalytic Kinetics Reactions", Lab. Phys. Theor. Liquides, Univ. Pierre et Marie Curie, Paris, France, 1997

20."Non-Linear Theory of Steady-State Complex Chemical Reactions", Fac. Sci., Univ. Libre Bruxelles, Brussels, Belgium, 1997

21."Chemical Kinetics in Heterogeneous Catalysis", Dept. Chem. Eng., Chulalangkorn Univ., Bangkok, Thailand, 1998

22. "Pulse Response Studies in Heterogeneous Catalysis", Paul Scherrer Institut (PSI), Villigen PSI, Switzerland, 1998

23. "Complex Kinetic Behaviour: Algebraic Analysis", Institut fuer Chemische Verfahrentechnik, Universitaet Stuttgart, Stuttgart, Germany, 1998.

24. " Thin - Zone TAP Reactor: Theory and Application", Laboratorium voor Petrochemische Techniek, Universiteit Gent, Gent, Belgium, 1998.

25. "TAP Pulse Response Studies in Catalysis", Leiden Institute of Chemistry, Gorlaeus Laboratories, Leiden, Netherlands, 1998

26. "Life with Miracle: 175 Years of History of Catalysis", Dept. of Chem. Eng, Washington University in St. Louis, St. Louis, 1999

27. "TAP-Studies in Heterogeneous Catalysis", University of Bath, Bath, United Kingdom, 1999

28. "TAP-Studies in Solid Material Chemistry", Eindhoven University of Technology, Eindhoven, Netherlands, 1999

29. "Discovery of Catalysis", History and Philosophy of Science Seminars, Washington University in St. Louis, St. Louis, 1999

30. “The Relation between Perceived Lengths and Durations” (with L.I. Soyfer), Department of Psychology, Washington University in St. Louis, St. Louis, 1999

31. “Non-Steady-State Studies in Heterogeneous Catalysis”, Department of Chemical and Environmental Engineering, National University of Singapore, Singapore, 2000

32 “Does the Mathematical Chemistry Exist?” Department of Mathematics, National University of Singapore, Singapore, 2000

33. ”Mathematics and Chemical Engineering: Collaboration and Conflict”, Department of Chemical Engineering, Wash. University in St. Louis, St. Louis, 2000

34. “Non-Steady State Kinetics in Catalysis”, Department of Chemical Engineering, Wuhan Institute of Chemical Technology, 2000

35. “Does the Mathematical Chemistry Exist?” Department of Chemical Engineering, Tsinghua University, People Republic of China, 2000

36. “Pulse-Response Studies in Heterogeneous Catalysis”, Department of Chemical Engineering, Hong Kong University of Science and Technology, 2000

37. “Heterogeneous Catalysis: Theory and Application”, Center of Catalytic Technology, Chulalangkorn University, Bangkok, Thailand, 2001

38. “Mathematic Models of Catalytic Processes”, Department of Chemical Engineering, University of Malaya, Kuala Lumpur, Malaysia, 2001

39. “Non-Linear Kinetics of Heterogeneous Catalysis”, Department of Chemical and Environmental Engineering, National University of Singapore, Singapore, 2001

40. “Pulse-Response Studies in Heterogeneous Catalysis”, Department of Chemical Engineering “, Tokyo Institute of Chemical Technology, 2001

41. “Germinating Seed Problem: A New Approach in Pedagogy”, University Scholars Programme, National University of Singapore, Singapore, 2002

42 “Pulse-Response TAP-Studies in Heterogeneous Catalysis”, National Tsing Hua University, Taipei, Taiwan, 2002

43. “Non-Linear Kinetics of Heterogeneous Catalysis”, Department of Chemical and Environmental Engineering”, University of Taiwan, Taipei, 2002

44. “Temporal Analysis of Products: Basic Principles, Applications, and Theories”, Ecole Polytechnique , Montreal(Quebec), Canada, 2003

45. “State-by-State Transient Screening in Heterogeneous Catalysis”, Tri-State

Seminar on Catalysis, Kentucky, 2004

46. “State-by-State Transient Screening” of Multi-Component Oxide Catalysts in Thin-Zone Multi-Pulse TAP-Experiments”, School of Chemistry, University of Ottawa, Canada, 2004

47. “New Tendencies in Theoretical Chemical Kinetics”, University of Melbourne, Australia, 2004

48. “Diffusion and Kinetics in Catalysis”, University of Brisbane, Australia, 2004

49. “Non-Steady-State Kinetics of Heterogeneous Catalysis”, University of Houston, 2004

50. “Concepts of Heterogeneous Chemical Kinetics”, Saint-Louis University, 2004

51. “The General Law of Chemical Kinetics. Does It Exist?” Queen’s University of Belfast, N. Ireland, United Kingdom, 2005

52. “Transient Kinetics in Heterogeneous Catalysis”, Shell Company, Amsterdam, September 2005

53. “Kinetics and Catalysis: Tendencies and Perspectives”, Kyiv University, Ukraine, 2005

54. Lecture “Chemistry and Algebra”, Mathematical Club at the Saint Louis University, April 2009

55. Lecture “Decoding the Complexity of Catalytic Reactions”, Institute of Biocolloid Chemistry, Kyiv, Ukraine, October 2009

56. Lecture “High throughput of non-steady-state catalytic activity characteristics using Temporal Analysis of Products (TAP)-studies”, Technion, Department of Chemical Engineering (Haifa, Israel), December 2010.

57. Lecture “What happens at the crossroad between Chemical Engineering and Mathematics”, Ben-Gurion University, Department of Mathematics (Beer-Sheva, Israel), January 2011.

58. "Temporal Analysis of Products; Theory and Application", Department of Chemical Engineering, University of Berkeley (Berkeley, California, March 2011)

59. "Kinetics of Complex Reactions: Decoding Complexity", presentation of the book at the seminar of the Department of Chemistry, Saint Louis University (St. Louis, Missouri, September 2011)

60. Seminar "Kinetics of Chemical Reactions: Decoding the Complexity", (University of Missouri St. Louis/UMSL/), April 2012

61. Seminar " Comtemporary Problems of Kinetic Catalyst Characterization", Dow Chemical, Terneuzen, Netherlands, August 2012

62. Seminar "Kinetics of Chemical Reactions: Decoding the Complexity", Department of Chemical and Biological Engineering, Northwestern University, Evanston, IL, November 2012

63. Seminar on History and Philosophy of Science and Medicine, Washington University in St. Louis, "Grasping Chemical Complexity: Temporal Behavior", April 2013.

64. "Complexity in Chemical Kinetics", Fritz-Haber Institute, Berlin, Germany, July 2013

65. Seminar "Mathematico-Chemical Crossroad", Department of Mathematics, Saint Louis University, October 2013

66. " Complexity in Chemical Kinetics", Department of Chemical Engineering, March 2014, Carnegie Mellon University (Pittsburgh**)**

67. Seminars Sarton Lecture "A brief history of time in chemical kinetics", June 2014, University of Ghent

68. "Temporal Analysis of Studies in Heterogeneous Catalysis", June 2014, Laboratoire Catalyse and Spectrochimie, ENSICAEN- CNRS, Caen, France

69. "Complexity in Chemical Kinetics", Department of Chemical Engineering and Biotechnology, University of Cambridge, June 2014

70. Two-lecture-course "Kinetics of Chemical Reactions", presented at Fritz-Haber-Institute, Berlin, Germany, August 2014

71. "A brief history of time in chemical kinetics", Department of Energy, Department of Energy, Chemical and Environmental Engineering, Washington University in St. Louis, November 2014

72. Three-lecture course "Decoding Complexity of Chemical Reactions", Dresden, Technical University, December 2014.

73. Department of Chemical Engineering, Massachusets Institute of Technology, "Nonlinear Phenomena in Chemical Kinetics"March 2015

74. Department of Chemistry, Brandeis University, "Decoding Complexity of Chemical Reactions", March 2015

75. Department of Chemistry, Saint Louis University, "Time in Chemistry", March 2015
76. University College, London, Department of Chemical Engineering, UK, "Decoding Complexity of Chemical Reactions", June 2015

77. Harward University, Department of Chemistry, "Chemical Calculus", September 2015

78. Fritz-Haber University, Berlin, Germany, "Kinetics of Complex Reactions", three-lecture-course, November 2015

79. Technical University of Chemnitz, Department of Physics, Chemnitz, Germany "Joint Kinetics: New Thermodynamic and Kinetic Relationships in Heterogeneous Catalysis", Ocober 2015

80. University of Hannover, Department of Chemistry, Germany, "Complexity in Chemical Kinetics", December 2015

81. University of Leipzig, Department of Physics, Leipzig, Germany, "Theory of Catalyst Activity Profile", December 2015

82. Istituto per Applicazioni del Calcolo (Rome, Italy), "Chemical Calculus", July 2016.

83. Idaho Nationa Laboratory, "Chemical Kinetics and Catalysis", March 2018

84. Washington University in St. Louis, Department of Mathematics, "Chemico-Mathematical Crossroad: What's Going On", April 2018.

i. Addendum: Miscellaneous publications. Special grants.

a) Professional (extended abstracts, philosophy of science, etc.)

1. V.S. Beskov, G.S. Yablonskii, "4th Soviet Union Conference on Chemical Reactors," *Chem. Industry,* 11, 71-72 (1971)

2. G.S. Yablonskii, "Soviet Union Symposium "Mathematical Methods in Chemistry," *Theor. Found. Chem. Technology*, 8, 152-153 (1974)

3. G.S. Yablonskii, "5th Soviet Union Conf. on Simulation of the Chemical Processes and Reactors", *Theor. Found. Chem. Technology*, 9, 635-636 (1975)

4. G.S. Yablonskii, "2nd Soviet Union Symposium "Mathematical Methods in Chemistry," *Theor. Found. Chem. Technology*, 10, 650-652 (1976)

5. G.S. Yablonskii, "2nd Soviet Union Conf. on Heterogeneous Kinetics of Catalytic Reactions," *Kinetika i Kataliz*, 17, 534-537 (1976)

6. G.S. Yablonskii, "Conference on Instationary Catalysis," *Kinetika i Kataliz*, 19, 536-539 (1978)

7. G.S. Yablonskii, "2nd Soviet Union Conf. "Technological Combustion," *Kinetika i Kataliz,* 20, 1084-1085 (1979)

8. G.S. Yablonskii, "Review on the book by S.L. Kiperman "Foundations of the Heterogeneous Chemical Kinetics", *Kinetika i Kataliz*, 23, 511 (1982)

9. G.S. Yablonskii, "Conf. "Mathematical Methods in Chemical Kinetics and Combustion Theory", *Kinetika i Kataliz*, 24, 1021-1022 (1983)

10. G.S. Yablonskii, "Goethe, Dobereiner, Catalysis" *Chemistry and Life*, 10, 76-79(1983)

11. G.K. Boreskov, G.S. Yablonskii, "Mendelejev's Traditions", *Economics and Organization Industry*, N 5 (1984)

12. A.N. Gorban', G.S. Yablonskii, "Mathematician and Chemist: Interaction and

Conflict", *Chemistry and Life*, N 12, 23-27 (1987)

13. L.V. Lutsevich, G.S. Yablonskii, "Monte -Carlo and Catalysis", *Chemistry and Life*, 11, 38-39 (1988)

14. G.G. Polyakov, G.S. Yablonskii, "Analysis of the Validity of Vant' Hoff Kinetic Relationships", *Russian J. Natural and Techn. Sci*. *History*, N 3, 93-97 (1989)

15. A.N. Gorban ', G.S. Yablonskii, "Chemistry and Mathematics Interaction", AMS Trans. "Scientific Siberian", Ser. A; V. 8 "Mathematical Models in Chemical Kinetics", 3-12 (1993)

16. V.S. Muzykantov, G.S. Yablonskii, "Academician G.K. Boreskov (1907-1984)", Academician G.K. Boreskov: Sketches, Materials, Memoirs, Novosibirsk, 13-44(1997)

17. G.S. Yablonskii, "Some Reminiscences about G.K. Boreskov", Academician G.K. Boreskov : Sketches, Materials, Memoirs, Novosibirsk, 145-150 (1997)

18. L.I. Soyfer, G.S. Yablonsky, "Time-Length Correspondence in Human Perception: A Primary Mathematical Interpretation of Psychological Experiment", Third Siberian Congress on Applied and Industrial Mathematics (INPRIM - 98), p. V, Novosibirsk, Russia, Inst. Mathematics, 113-114 (1998)

19. L.I. Soyfer, G.S. Yablonsky, "The Relations between Perceived Lengths and Durations", United States. Copyright Office, The Library of Congress, Register of Copyrights United States of America, TXu 959-099, effective date of registration 28 June of 2000

20. G.S. Yablonsky, "Comments on a Commentary by Prof. Levenspiel", Ind. Eng. Chem. Research, 39(8), 3120 (2000)

21. G.S. Yablonsky,"Book Review: Frerich Keil, "Diffusion and Chemische Reactionen in der Gas/Feststoff-Katalyse", Springer ,1999", *Chem. Eng. Comm*., 185, 247-248(2001)

22. G.S. Yablonsky, "Archimedes Games", Copyright Office, The Library of Congress, Register of Copyrights United States of America, Txu1-080-875, effective date of registration 19 December 2003.

23. B.E. Baaquie, G.S. Yablonsky, Metaphors in Science: Bridges across the Abyss", in "Metaphor and Contemporary Science", University Scholars Programme, National University of Singapore, Singapore, 73-99 (2003)

24. D. Constales, G.B. Marin, G. Nicolis, R.van Keer, G.S. Yablonsky, "Mathematics in Chemical Kinetics and Engineering: an Introduction to the Special

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