

# Shiraz Alexander Markarian

## Research Center for Chemistry

Ֆիզիկական քիմիայի լաբորատորիա  
Chief Researcher

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## 🎓 Education

<b>Institution</b>	Institute of Chemical Physics of the USSR Academy of Sciences, Moscow
<b>Faculty</b>	Chemistry
<b>Date</b>	1970 - 1974
<b>Degree name</b>	PhD student

<b>Institution</b>	Yerevan State University
<b>Faculty</b>	Department of Chemistry
<b>Date</b>	1965 - 1970
<b>Degree name</b>	Qualified specialist

## 🎓 Scientific Rank/degree

<b>Institution</b>	Institute of Physical Organic Chemistry of the University Rostov-Don, Russia
<b>Date</b>	1989
<b>Degree name</b>	Doctor
<b>Specialty</b>	Chemical sciences
<b>Research Topic</b>	molecular interactions and reactions of sulfoxides, sulfides and amines

<b>Institution</b>	Yerevan State University
<b>Date</b>	1975
<b>Degree name</b>	Candidate
<b>Specialty</b>	Chemical sciences
<b>Scientific Supervisor</b>	Բուլազենկո
<b>Research Topic</b>	Quantitative study of nuclea polarization and magnetic effects in chemical reactions

## 🌐 Language skills

English Русский Deutsch

## 📁 Work experience

<b>Institution</b>	Yerevan State University
<b>Period of time</b>	2000 till now

Rank/degree

Head of Chair of Physical Chemistry

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## Scientific interests

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- Physicochemical studies of chemical and biological systems.
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## Membership

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<b>Institution</b>	Member of editorial board
<b>Period of time</b>	1992 - 2004

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## State awards and honorary titles

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2010 Best Scientific Work of the Republic of Armenia in area of natural sciences

2002 Presidential award of the Republic of Armenia

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## Publications

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*Article*

**Diphenyl selenoxide: Unraveled peculiarities in methanol and acetonitrile solutions**

Vitaly V. Chaban, Shiraz A. Markarian, Heghine H. Ghazoyan, Hasmik R. Sargsyan, Gevorg S. Grigoryan, Adrine D. Sahakyan, Levon A. Tavadyan

Journal of Molecular Liquids 2024 125331

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*Article*

**СПЕКТРОСКОПИЧЕСКОЕ ИССЛЕДОВАНИЕ КОМПЛЕСОБРАЗОВАНИЯ МЕДИ(II) С (S)- $\beta$ -[3-ИЗОБУТИЛ-4-(2-МЕТАЛЛИЛ)-5-ТИОКСО-1,2,4-ТРИАЗОЛ-1-ИЛ]- $\alpha$ -АЛАНИНОМ В ВОДНОМ РАСТВОРЕ**

А.Р. Саркисян, Г.С. Григорян, Ш.А. Маркарян

Известия высших учебных заведений. Серия: химия и химическая технология (ChemChemTech) 2023 62-69

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*Article*

**Dimethyl sulfoxide fosters larger micelles of docusate sodium in the mixed solutions with water**

S.A. Markarian, H.R. Sargsyan, G.S. Grigoryan, H.H. Ghazoyan, V.V. Chaban

Journal of Molecular Liquids 2023 120960

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*Article*

**Dimethyl sulfoxide heavily extends homogeneous regions of the Propionitrile/DMSO/Water mixtures**

Heghine H. Ghazoyan, Zara L. Grigoryan, Shiraz A. Markarian, Vitaly V. Chaban

Journal of Molecular Liquids 2023 121734

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*Article*

**The Effect of Dimethylsulfoxide (or Diethylsulfoxide) on Methylene Blue-Calf Thymus DNA Binding in Aqueous Solutions by Fluorescence Polarization and Steady-State Fluorescence Quenching**

Gohar A. Shahinyan, Heghine H. Ghazoyan, Shiraz A. Markarian

Journal of Solution Chemistry 2023 708-719

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*Article*

**Diphenylsulfoxide exhibits an outstanding solubility in Methanol: Physicochemical and quantum chemical evidences. Comparison to acetonitrile**

Shiraz A. Markarian, Heghine H. Ghazoyan, Hasmik R. Sargsyan, Gevorg S. Grigoryan, Vitaly V. Chaban, Adrine D. Sahakyan, Levon A. Tavadyan

Journal of Molecular Liquids 2023 122924

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*Article*

**The Study of the Effect of Dimethylsulfoxide (or Diethylsulfoxide) on Quinine Sulfate-DNA Binding by UV-Vis and Steady-State Fluorescence Spectroscopies**

Gohar A. Shahinyan, Shiraz A. Markarian

Journal of Fluorescence 2023 1-12

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*Article*

**FTIR ATR SPECTRAL AND THEORETICAL VIBRATIONAL STUDIES OF URACIL IN DIMETHYLSULFOXIDE OR DIETHYLSULFOXIDE SOLUTIONS**

A.L. Zatikyan, Sh.A. Markarian

Journal of Structural Chemistry 2022 388-406

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*Article*

**Citrullination of adenosine deaminase impairs its binding to dipeptidyl peptidase IV**

Luiza Karapetyan, Svetlana Sharoyan, Sona Mardanyan, Giulio Lupidi, Massimiliano Cuccioloni, Mauro Angeletti, Shiraz Markarian, Hasmik Shilajyan, Alvard Antonyan

Biophysical Chemistry 2022 106820

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*Article*

**Volumetric Properties of Butyronitrile-Dimethyl Sulfoxide and Butyronitrile-Diethyl Sulfoxide Binary Mixtures**

H.H. Ghazoyan, Sh.A. Markaryan

Журнал физической химии (Russian Journal of Physical Chemistry A) 2021 1811-1820

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*Article*

**Study of the Interaction of Novel Nonprotein Amino Acids with Trypsin by Steady-State Fluorescence Spectroscopy**

Gohar A. Shahinyan, Ani S. Dadayan, Nelli A. Hovhannisyan, Shiraz A. Markarian

Journal of Fluorescence 2020 229-233

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*Article*

**ИССЛЕДОВАНИЕ ВЗАИМОДЕЙСТВИЯ ПОЛИАКРИЛОНИТРИЛА С ДИМЕТИЛСУЛЬФОКСИДОМ МЕТОДАМИ ДТА/ТГ И ИК-СПЕКТРОСКОПИИ**

Յ. Լ. ԳՐԻԳՐՅԱՆ, Մ. Ա. ՄԱՐԿԱՐՅԱՆ

Հայաստանի քիմիական հանդես 2020 8-14

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*Article*

**Dielectric relaxation and proton field-cycling NMR relaxometry study of dimethyl sulfoxide/glycerol mixtures down to glass-forming temperatures**

Max Flämig, Liana Gabrielyan, Rafael Minikejew, Shiraz Markarian, Ernst A. Rössler

Physical Chemistry Chemical Physics 2020 9014-9028

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*Article*

**Fluorescence anisotropy studies on the Hoechst 33258-DNA interaction: the solvent effect**

Karen Yu. Amirbekyan, Gohar A. Shahinyan, Heghine H. Ghazoyan, Hasmik R. Sargsyan,

Shiraz A. Markarian

Journal of Biomolecular Structure and Dynamics 2020 1-5

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*Article*

**Volumetric, UV-Vis and FT IR Studies of Isoniazid in Diethylsulfoxide Solutions**

Shiraz A. Markarian, Zakar K. Papanyan, Gohar A. Shahinyan

Journal of Solution Chemistry 2020 1-13

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*Manual*

**Ֆիզիկական քիմիայի խնդիրների ժողովածու**

Գաբրիելյան Լ. Ս., Խաչատրյան Ա. Գ., Մարգարյան Շ. Ա.

2020 222

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*Article*

**Photophysical properties of methylene blue in water and in aqueous solutions of dimethylsulfoxide**

Gohar A. Shahinyan, Aren Yu. Amirbekyan, Shiraz A. Markarian

SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY 2019 170-175

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*Article*

**Study of thermodynamic properties of binary mixtures of propionitrile with dimethylsulfoxide (or diethylsulfoxide) at temperatures from (298.15 to 323.15)K**

Heghine H. Ghazoyan, Zara L. Grigoryan, Liana S. Gabrielyan, Shiraz A. Markarian

Journal of Molecular Liquids 2019 147-156

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*Article*

**DENSITIES AND ELECTRICAL CONDUCTIVITIES OF COPPER(II) CHLORIDE SOLUTIONS IN DIMETHYL SULFOXIDE AND WATER-DIMETHYL SULFOXIDE EQUIMOLAR MIXTURE AT THE TEMPERATURES 298.15, 308.15 AND 318.15 K**

H. H. GHAZOYAN, Sh. A. MARKARIAN

Proceedings of the YSU B: Chemical and Biological Sciences 2019 3-9

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*Article*

**Synthesis, Structure, and Properties of Novel Enamine Containing Coumarin and Phosphonium Fragments**

L. D. Popov, I. N. Scherbakov, S. A. Borodkin, Yu. V. Revinskii, E. A. Kazoyan, G. A. Shaginyan,

A. R. Sarkisyan, Sh. A. Markaryan

Russian Journal of General Chemistry (Журнал общей химии) 2019 906-912

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*Article*

**Synthesis of Phosphonium Enamines: Physicochemical Properties of Dimethyl Sulfoxide Solutions**

S. A. Borodkin, E. A. Kazoyan, L. D. Popov, G. A. Shaginyan, A. R. Sarkisyan, I. N. Shcherbakov,

Sh. A. Markaryan

Russian Journal of Physical Chemistry A 2019 2187-2191

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*Article*

**Thermodynamic and Spectroscopic (UV-Vis, FT IR) Studies of Solutions of CoCl<sub>2</sub> (or NiCl<sub>2</sub>) in Diethylsulfoxide**

Shiraz A. Markarian, Heghine H. Ghazoyan, Hasmik R. Sargsyan, Gohar A. Shahinyan

Journal of Solution Chemistry 2019 1378-1392

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*Article*

**Study of thermodynamic properties of binary mixtures of propionitrile with dimethylsulfoxide (or diethylsulfoxide) at temperatures from (298.15 to 323.15)K**

H.H. Ghazoyan, Z.L. Grigoryan, L.S. Gabrielyan, S.A. Markarian

Journal of Molecular Liquids 2019 147-156

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*Article*

**Densities and volumetric properties of L-ascorbic acid solutions in water-ethanol mixtures at temperatures from 298.15 to 318.15 K**

H.H. Ghazoyan, Sh.A. Markarian

Proceedings of the YSU B: Chemical and Biological Sciences 2018 3-9

<http://www.ysu.am/science/hy/1520431333>

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*Article*

**Dielectric Relaxation Spectroscopy Study of the Structure and Dynamics of Dialkyl Sulfoxide Solutions**

L.S. Gabrielyan, Sh.A. Markaryan

Russian Journal of Physical Chemistry A 2018 205-213

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*Article*

**Theoretical ab initio calculation of entropy and heat capacity of dialkylsulfones in the gas phase**

A.S. Mkhitarian, Z.K. Papanyan, L.S. Gabrielyan, S.A. Markarian

Chemical Journal of Armenia 2018 13-22

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*Article*

**Template directed excimer formation via specific non-covalent interactions between pyrene guanidinium derivatives and nucleic acids**

Karen Amirbekyan, Justine Mansot, Keiichiro Ohara, Shiraz A. Markarian, Jean-Jacques Vasseur,

Michael Smietana

Tetrahedron Letters 2018 295-298

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*Article*

**КВАНТОВО-ХИМИЧЕСКОЕ ОПРЕДЕЛЕНИЕ ТЕПЛОТЫ ГИДРАТАЦИИ ДИЭТИЛСУЛЬФОНА**

Л.С. Габриелян, Ш.А. Маркарян, З.Х. Папанян, А.С. Мхитарян

Известия высших учебных заведений. Серия: химия и химическая технология (ChemChemTech) 2018 17-21

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*Article*

**DETERMINATION OF THE REACTION RATE CONSTANT FOR THE INTERACTION OF DIETHYL**

**SULFOXIDE WITH THE HYDROXYL RADICAL ON THE BASIS OF COMPETITIVE KINETICS**

A.I. MARTIRYAN, T.M. AYVAZYAN, Sh.A. MARKARIAN

Proceedings of the YSU B: Chemical and Biological Sciences 2018 80-82

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*Article*

**ОБЪЕМНЫЕ СВОЙСТВА ОБРАЩЕННОЙ МИЦЕЛЛЯРНОЙ СИСТЕМЫ n-ГЕПТАН - БИС-(2-ЭТИЛГЕКСИЛ) СУЛЬФОСУКЦИНАТ НАТРИЯ - ПОЛЯРНАЯ ФАЗА (ВОДА+ДИМЕТИЛФОРМАМИД (ИЛИ АЦЕТОНИТРИЛ))**

Г. А. ШАГИНЯН, Ш. А. МАРКАРЯН

Հայաստանի քիմիական հանդես 2018 280-291

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*Article*

**Изучение диэлектрической релаксации бинарной системы сульфолан/диметилсульфоксид.**

Л.С. ГАБРИЕЛЯН, Ш.А. МАРКАРЯН

Հայաստանի քիմիական հանդես 2017 37-44

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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*Article*

**ОБЪЕМНЫЕ СВОЙСТВА РАСТВОРОВ ДИМЕТИЛСУЛЬФОНА В СМЕШАННОМ РАСТВОРИТЕЛЕ (ЭТАНОЛ-ВОДА) В ИНТЕРВАЛЕ ТЕМПЕРАТУР 298,15-323,15 К**

Е.А. Казоян, Ш.А. Маркарян

Известия высших учебных заведений. Серия: химия и химическая технология (ChemChemTech) 2017 27-33

<http://ctj.isuct.ru/>

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*Article*

**Volumetric Properties and Viscosity of Diethylsulfoxide in Acetonitrile at Different Temperatures**

Z.L. Grigoryan, H.H. Ghazoyan, Sh.A. Markarian

Proceedings of the YSU B: Chemical and Biological Sciences 2017 147-155

<http://www.ysu.am/science/hy/1511853083>

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*Article*

**Volumetric properties of binary mixtures of acrylonitrile with dimethylsulfoxide (or diethylsulfoxide) at temperatures from 298.15 to 323.15 K**

H.H. Ghazoyan, Z.L. Grigoryan, Sh.A. Markarian

Chemical Journal of Armenia 2017 462-476

<http://chemjournal.sci.am>

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*Article*

**VOLUMETRIC PROPERTIES AND VISCOSITY OF DIETHYL SULFOXIDE IN ACETONITRILE AT DIFFERENT TEMPERATURES**

Z.L. Grigoryan, H.H. Ghazoyan, S.A. Markarian

ԵՊՀ Գիտական տեղեկագիր, Բնական գիտություններ 2017 147-155

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*Manual*

**Մոլեկուլային ֆլուորեսցենցիայի հիմունքները**

Շ. Ա. Մարգարյան, Կ. Ռ. Գրիգորյան

2017 132

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Article

**The study of n-heptane/AOT/water+ dimethylsulfoxide reverse micelles using acridine orange base as molecular probe**

G.A. SHAHINYAN, S.A. MARKARIAN

Հայաստանի քիմիական հանդես 2016 33-46

<http://www.flib.sci.am/eng/Qimia/Frame.html>

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Article

**Effect of diethylsulfoxide on volumetric properties of sodium bis (2-ethylhexyl) sulfosuccinate microemulsions**

G.A. SHAHINYAN, H.R. SARGSYAN, A.M. KOLKER, S.A. MARKARIAN

Հայաստանի քիմիական հանդես 2016 407-415

<http://chemistry.asj-oa.am/view/year/2016.html>

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Article

**Excess Gibbs Energy and Local Compositions in the Mixtures C<sub>2</sub>, C<sub>3</sub> Alkane Diols and Triols with Water at Various Pressures**

Dmitriy M. Makarov, Gennadiy I. Egorov, Shiraz A. Markarian, Arkadiy M. Kolker

Journal of Solution Chemistry 2016 1679-1688

<http://link.springer.com/journal/10953>

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Article

**Design, Synthesis, and Binding Affinity Evaluation of Hoechst 33258 Derivatives for the Development of Sequence-Specific DNA-Based Asymmetric Catalysts**

Karen Amirbekyan, Nicolas Duchemin, Erica Benedetti, Rinah Joseph, Aude Colon, Shiraz A. Markarian,

Lucas Bethge, Stephan Vonhoff, Sven Klussmann, Janine Cossy, Jean-Jacques Vasseur,

Stellios Arseniyadis, Michael Smietana

ACS Catalysis 2016 3096–3105

<http://pubs.acs.org/journal/accacs>

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Article

**Влияние концентрации Na-сульфосукцината (НАС) на свойства мицеллярной системы НАС-н-гептан-ДМСО-вода**

Մ.Ա. Մարկարյան, Ա.Ք. Տարկիսյան, Դ.Ա. Շահինյան

Журнал физической химии (Russian Journal of Physical Chemistry A) 2015 1606-1611

<http://www.maik.ru/ru/journal/fizkhim/>

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Article

**The effect of dimethylsulfoxide on absorption and fluorescence spectra of aqueous solutions of acridine orange base**

Shiraz A. Markarian, Gohar A. Shahinyan

SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY 2015 662-666

<http://www.journals.elsevier.com/spectrochimica-acta-part-a-molecular-and-biomo...>

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Article

**Thermodynamics of Liquid-Vapor Phase Equilibrium in Dimethyl Sulfoxide-Alkanol Systems in the Range of 293.15-323.15 K**

Grigoryan Z.L., Ghazoyan H.H., Markarian S.A.

Russian Journal of Physical Chemistry A 2015 1790-1794

<http://link.springer.com/journal/11504>

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Article

**Effect of the Dioctyl Sodium Sulfosuccinate (AOT) Concentration on the Properties of the AOT-n-Heptane-DMSO-Water Micellar System**

Sh. A. Markaryan, A. R. Sarkisyan, G. A. Shaginyan

Russian Journal of Physical Chemistry A 2015 1808-1813

<http://link.springer.com/journal/11504>

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Article

**Thermodynamics of Liquid-Vapor Phase Equilibrium in Dimethyl Sulfoxide-Alkanol Systems in the Range of 293.15-323.15 K**

Z. L. Grigoryan, E. A. Kazoyan, Sh. A. Markaryan

Russian Journal of Physical Chemistry A 2015 1588-1592

<http://link.springer.com/journal/11504>

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Article

**Thermodynamics of Liquid-Gas Phase Equilibria of Diisopropyl and Dibutyl Sulfoxides**

G. S. Grigoryan, Sh. A. Markarian

Журнал физической химии (Russian Journal of Physical Chemistry A) 2014 1071-1072

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Article

**ИССЛЕДОВАНИЕ РАВНОВЕСИЯ ЖИДКОСТЬ-ПАР В БИНАРНОЙ СИСТЕМЕ ДИМЕТИЛСУЛЬФОКСИД-ЭТАНОЛ**

Е. А. КАЗОЯН, З. Л. ГРИГОРЯН, Ш. А. МАРКАРЯН

Chemical Journal of Armenia 2014 36-42

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Article

**DENSITIES, EXCESS MOLAR AND PARTIAL MOLAR VOLUMES FOR DIETHYLSULFOXIDE WITH METHANOL OR ETHANOL BINARY SYSTEMS AT TEMPERATURE RANGE 298.15-323.15 K**

H. H. GHAZOYAN, Sh. A. MARKARIAN

Proceedings of the YSU B: Chemical and Biological Sciences 2014 17-25

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Article

**Volume Properties of Reverse Micellar Systems AOT/nHeptane/DMSO-Water**

A. R. Sargsyan, G. A. Shahinyan, S. A. Markarian

Журнал физической химии (Russian Journal of Physical Chemistry A) 2014 858-862

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Article

**Low temperature dielectric relaxation study of aqueous solutions of diethylsulfoxide**

Liana Gabrielyan, Shiraz Markarian, Peter Lunkenheimer, Alois Loidl

The European Physical Journal Plus 2014 245

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Article

**Dielectric spectroscopy of dimethylsulfone solutions in water and dimethylsulfoxide**

Liana S. Gabrielyan, Shiraz A. Markarian, Hermann Weingärtner

Journal of Molecular Liquids 2014 37-40

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Article

**IR SPECTROSCOPY DETERMINATION OF THE COMPLEXATION CONSTANT FOR A CHOLESTEROL-DIISOPROPYL SULFOXIDE COMPLEX**

L. S. Gabrielyan, L. G. Melik-Ohanjanyan, S. A. Markarian



Article

**Thermodynamics of Liquid-Gas Phase Equilibria in the Dipropylsulfoxide-Water System in the Range of 303.15 to 323.15 K**

G. S. Grigoryan, Sh. A. Markaryan

Журнал физической химии (Russian Journal of Physical Chemistry A) 2013 191-193

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Article

**DETECTION OF OXIDATION OF L-CYSTEINE BY DIMETHYL SULFOXIDE IN AQUEOUS SOLUTIONS BY IR SPECTROSCOPY**

PAPANYAN Z., MARKARIAN S.

Журнал прикладной спектроскопии (Journal of Applied Spectroscopy) 2013 775-778

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Article

**Molecular Interactions between Benzimide Trichloride (Hoechst 33258) and DNA in Dimethyl Sulfoxide Aqueous Solutions, According to Spectroscopy Data**

K. Yu. Amirbekyan, A. P. Antonyan, P. O. Vardevanyan, Sh. A. Markarian

Журнал физической химии (Russian Journal of Physical Chemistry A) 2013 2027-2029

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Article

**Влияние диметилсульфоксида на электрохимические и антирадикальные свойства аскорбиновой кислоты**

Ш. А. Маркарян, Л. А. Тавадян, Г. Г. Кочарян, Г. А. Шагинян

Известия Академии наук. Серия химическая 2013 1625-1629

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Article

**Densities and thermochemical properties of dimethylsulfone in dimethylsulfoxide and dimethylsulfoxide/water equimolar mixture**

Heghine H. Ghazoyan, Shiraz A. Markarian

Journal of Molecular Liquids 2013 85-88

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Article

**The properties of solutions of isoniazid in water and dimethylsulfoxide**

Markaryan S.A., Harutyunyan L.R., Pepoyan E.K., Evangelopoulos D., Guzman J.D., McHugh T.D.,

Bhakta S.

Journal of Solution Chemistry 2012 1462-1476

<http://link.springer.com/journal/10953>

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Article

**SPECTROSCOPIC DETERMINATION OF BINDING BETWEEN HUMAN SERUM ALBUMIN AND A PLATINUM(II) DIMETHYLSULFOXIDE COMPLEX**

K. R. Grigoryan, M. G. Aznauryan, N. A. Bagramyan, L. G. Gevorkyan,, Sh. A. Markaryan

Журнал прикладной спектроскопии (Journal of Applied Spectroscopy) 2008 593-596

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Article

**Investigation of the Effect of Dimethyl Sulfoxide and Diethyl Sulfoxide on Sodium Dodecyl Sulfate Micellization in Aqueous Solutions by Fluorescence Method**

Harutyunyan L.R., Markarian S.A.

Colloid Journal 2007 407-410

*Article*

**Complexation and Reactions of Molecular Iodine with Dimethyl and Diethyl Sulfoxides**

Grigoyan K. R., Sh. A. Markaryan, A. R. Sarkisyan,, A. M. Asatryan,, Ts. A. Adamyan

Russian Journal of General Chemistry (Журнал общей химии) 2006 1801-1803

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*Article*

**Effect of Diethylsulfoxide on the Thermal Denaturation of DNA**

Karine R. Grigoryan, Arpine M. Asatryan, Shiraz A. Markarian, Hasmik R. Sargsyan

Biopolymers 2006 1-5

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*Article*

**The properties of mixtures of sodium dodecylsulfate and diethylsulfoxide in water**

Harutyunyan L.R., Markarian S.A., Harutyunyan R.S.

Journal of Solution Chemistry 2005 361-368

<http://link.springer.com/journal/10953>

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*Article*

**DSC study on the effect of dimethylsulfoxide (DMSO) and diethylsulfoxide (DESO) on phospholipid liposomes**

Grigorian K. R., Markarian S. A., S. Bonora, A. Trincherо

Thermochimica Acta 2005 19-26

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*Article*

**FT IR ATR Study of Molecular Interactions in the Urea/Dimethyl Sulfoxide and Urea/Diethyl Sulfoxide Binary Systems**

Karine R. Grigoryan, Shiraz A. Markarian, Liana S. Gabrielyan

Journal of Solution Chemistry 2004 1005-1015

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*Conference*

**Диэлектрические и релаксационные характеристики водных растворов диэтилсульфоксида**

Л.С. Габриелян, Ш.А. Маркарян

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*Conference*

**Medium effect on hydrogen bonded complexes of L-ascorbic acid with diethylsulfoxide: quantum chemical calculations**

A.L. Zatikyan, S.A.Markarian

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*Conference*

**Ab initio study of molecular interactions in ascorbic acid dimethylsulfoxides/water mixture**

A.L. Zatikyan, S.A.Markarian

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*Conference*

**Study the effect of sulfoxides on micellar properties of surfactant aqueous solutions**

Harutyunyan L.R., Markarian S.A.

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*Conference*

**Molecular interaction between nitrile group containing compounds (acetonitrile, acrylonitrile,**

**polyacrylonitrile) and dimethylsulfoxide**  
Grigoryan Z.L., Ghazoyan H.H., Markarian S.A.

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*Conference*

**The structural and dynamical peculiarities of sulfoxides and sulfones solutions**  
Markarian S.A.

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*Conference*

**Physicochemical properties of n-heptane/AOT/water+ sulfoxide microemulsions**  
G.A. Shahinyan, H.R. Sargsyan, S.A. Markarian

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*Conference*

**Фазовые равновесия жидкость-газ дипропил-, диизопропил- и дибутилсульфоксидов.**  
Григорян Г.С., Маркарян Ш.А.

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*Conference*

**Volumetric properties of diethylsulfoxide-alkanol binary mixtures**  
H.H. Ghazoyan, S.A. Markarian

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*Conference*

**Liquid-vapor equilibrium, volumetric and transport properties of dimethylsulfoxide-acetonitrile system**  
H.H. Ghazoyan, Z.L. Grigoryan, S.A. Markarian

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*Conference*

**Viscosity and volumetric properties of acrylonitrile+ dimethylsulfoxide binary mixtures at T=(298.15-318.15)K**  
Ghazoyan H.H., Grigoryan Z.L., Markarian S.A.

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*Conference*

**ИЗУЧЕНИЕ КОМПЛЕКСООБРАЗОВАНИЯ ХЛОРИДА И НИТРАТА МЕДИ (II) С ДИЭТИЛСУЛЬФОКСИДОМ МЕТОДОМ УФ СПЕКТРОСКОПИИ**  
А.Р. Саркисян, Г.А. Щагинян, Е.А. Казоян, И.Н. Щербаков, Ш.А. Маркарян

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*Conference*

**The study of thermodynamic properties of binary mixtures diethylsulfoxide-acetonitrile (or propionitrile)**  
Ghazoyan H.H., Grigoryan Z.L., Sargsyan H.R., Markarian S.A.

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*Conference*

**THE STUDY OF MOLECULAR INTERACTIONS IN DIMETHYLSULFOXIDE AQUEOUS SOLUTIONS OF ACRIDINE ORANGE BASE BY UV-VIS AND FLUORESCENCE SPECTROSCOPY**  
Markarian S.A., Shahinyan G.A.

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*Conference*

**FT-IR ATR STUDY OF URACIL IN DIMETHYLSULFOXIDE SOLUTIONS**  
Zatikyan A.L., Markarian S.A.

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*Conference*

**AB INITIO STUDY OF LITHIUM CHLORIDE SOLVATION BY SULFONES**

Gabrielyan L.S., Mkhitarian A.S., Papanyan Z.K., Markarian S.A.

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*Conference*

**ФАЗОВЫЕ РАВНОВЕСИЯ ЖИДКОСТЬ-ГАЗ В СИСТЕМЕ ДИИЗОПРОПИЛСУЛЬФОКСИД-ВОДА**

Григорян Г.С., Маркарян Ш.А.

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*Conference*

**Effect of Dialkylsulfoxides on the Thermal Denaturation of DNA**

Markarian S.A.

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*Conference*

**Thermodynamic Properties of Dimethylsulfone- Dimethylsulfoxide-Water Ternary System**

Ghazoyan H.H., Markarian S.A.

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*Conference*

**FT IR study of cobalt chloride or nickel chloride solutions in diethylsulfoxide**

Gohar A. Shahinyan, Shiraz Markarian

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*Conference*

**Dielectric Relaxation and Field-Cycling 1H NMR Relaxometry Studies of Dimethylsulfoxide/ Glycerol Mixtures at Low Temperatures**

Gabrielyan L.S., Markarian S.A, Flämig M., Rössler E.A.

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*Conference*

**UV-VIS AND THERMODYNAMIC STUDIES OF COMPLEX FORMATION OF DIETHYLSULFOXIDE WITH CoCl<sub>2</sub> AND NiCl<sub>2</sub>**

H.H. Ghazoyan, H.R. Sargsyan, Z.K. Papanyan, S.A. Markarian

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*Conference*

**Thermogravimetric and FT IR study of interaction of polyacrylonitrile with dimethylsulfoxide**

H.H. Ghazoyan, Z.L. Grigoryan, S.A. Markarian

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*Conference*

**THERMODYNAMICS OF LIQUID-GAS EQUILIBRIA IN THE DIISOPROPYLSULFOXIDE-WATER SYSTEM**

Grigoryan G.S., Markarian S.A.

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*Conference*

**УФ-ИССЛЕДОВАНИЕ КОМПЛЕКСООБРАЗОВАНИЯ п-НИТРОАНИЛИНА С МОЛЕКУЛАМИ АЭРОЗОЛЯ ОТ В МИЦЕЛЛЯРНЫХ СИСТЕМАХ**

А.Р. Саркисян, Е.А. Казоян, Ш.А. Маркарян

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*Conference*

**UV-VIS AND FT IR STUDY OF COMPLEX FORMATION BETWEEN ISONIAZID AND DIMETHYLSULFOXIDE OR DIETHYLSULFOXIDE**

G.A. Shahinyan, Z.K. Papanyan, S.A. Markarian

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**ИССЛЕДОВАНИЕ СМЕСЕЙ АЛИФАТИЧЕСКИХ НИТРИЛОВ С СУЛЬФОКСИДАМИ НА  
ОСНОВАНИИ ДАННЫХ ДЕНСИТОМЕТРИИ, ВИСКОЗИМЕТРИИ И ФАЗОВЫХ РАВНОВЕСИЙ**  
Казоян Е.А., Григорян Э.Л., Маркарян Ш.А.

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*Conference*

**THE DYNAMIC LIGHT SCATTERING OF B1 AND B6 VITAMINES IN DMSO-WATER MIXTURES**  
H.H. Ghazoyan, L. Baghdasaryan, S.A. Markarian

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*Conference*

**THE MICELIZATION OF AOT IN AQUEOUS SOLUTION OF DMSO**  
H. Sargsyan, G. Grigoryan, H. Ghazoyan, Sh. Markarian

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*Conference*

**Excess Molar Volumes in Homogeneous Region of Propionitrile+DMSO+Water Ternary Liquid  
Mixtures at Temperatures From (298.15 to 323.15)K**  
Ghazoyan H.H., Markarian Sh.A.

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*Conference*

**COMPLEX FORMATION OF COPPER(II) WITH (S)- $\beta$ -[3-ISOBUTYL-4-(2-METALLYL)-5-THIOXO-  
1,2,4- TRIAZOL-1-YL]- $\alpha$ -ALANINE IN AQUEOUS SOLUTION**  
Sargsyan H.R., Grigoryan G.S., Markarian S.A.

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*Conference*

**ИССЛЕДОВАНИЕ КОМПЛЕКСООБРАЗОВАНИЯ ВИТАМИНА В12 С ДНК МЕТОДОМ  
ЭЛЕКТРОННОЙ СПЕКТРОСКОПИИ ПОГЛОЩЕНИЯ**  
Саркисян А.Р., Маркарян Ш.А.

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*Conference*

**Thermodynamic study of binary mixtures of aliphatic nitriles (acetonitrile, propionitrile,  
butyronitrile and acrylonitrile) with dimethylsulfoxide (or diethylsulfoxide)**  
Shiraz Markarian, Zara Grigoryan, Heghine Ghazoyan

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*Conference*

**Size determination of nanoparticles of vitamins B1 and B6 in DMSO-water mixtures by  
dynamic light scattering**  
Heghine Ghazoyan, Shiraz Markarian

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*Conference*

**THE THERMODYNAMIC STUDY OF SOLUTIONS OF DIALKYL SULFOXIDES WITH ALCOHOLS**  
Ghazoyan H.H., Markarian S.A.

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*Conference*

**Dynamic Light Scattering and Volumetric Study of Vitamins (B1 and B6) in Aqueous Solutions  
of DMSO**  
Heghine H. Ghazoyan, Shiraz A. Markarian

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*Conference*

**The effect of dimethylsulfoxide (or diethylsulfoxide) on the properties of DNA solutions**  
Shiraz A. Markarian, Gohar A. Shahinyan, Heghine H. Ghazoyan

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