



Irgibaeva Irina Smailovna
Professor of Chemistry, L.N.
Gumilyov Eurasian National
University (Nur-Sultan)

Contact details:

Email: irgsm@mail.ru
Mob.: 8-701-415-81-63
Tel.: 8-7172-70-95-00 internal
telephone 33-115

Professional experience:
**Total work experience 45 years,
production 12 years.**

From 2004 to the present time -
Professor of the Department of
Chemistry, ENU. L.N. Gumilyova
2002-2004 – Senior Researcher, ENU
L.N. Gumilyova
2000-2002 – Senior Researcher
Institute of electrochemistry and
catalysis, Almaty
1994-2000 Associate Professor of the
Department of Chemistry Karagand.
state university E.A. Buketova
1993-1994 Senior Researcher,
Institute of Organic Synthesis and
Coal Chemistry, Karaganda
1990-1992-Doctoral studies at the
Institute of Chemical Physics of the
Academy of Sciences of the USSR,
Moscow, Chernogolovka
1983-1990 – Institute of Organic
Synthesis and Coal Chemistry,
Karaganda
1973-1983 - Chemical and
Metallurgical Institute, Karaganda
1972-1973-Teacher, Tselinograd City
Council

Scientific internships:

the Institute of Chemical Physics of
the Academy of Sciences of the
USSR Moscow, Chernogolovka 1999-
2001

Awards:

2008 - "The best teacher of the
university 2008" MES RK.
2010 - Honorary Worker of
Education of the Republic of
Kazakhstan, MES RK
Elsevier Science Leader Award 2015
*Certificate of honor for contribution
to research work, 2017*

Scientific degree, scientific school:

Tselinograd state Pedagogical Institute named after S. Seifulina (1972), Faculty of
Physics and Mathematics, specialty "Physics".
Doctoral studies at the OIHF An USSR Moscow, Chernogolovka (1990-1992).
Doctor of Science (Chemistry) (2004) defended in E.A. Buketov Karaganda state
university.
Professor of L.N. Gumilyov Eurasian National university(2012).

Research area: Quantum chemistry, quantum chemical dynamics,
nanomaterials, molecular spectroscopy

Scientific grants:

Foreign scientific grants
Russian fund of fundamental research (project 97-03-33687a), (RFFR,
project 98-07-90290) (project 00-03-32938a), (project 01-03-33178)
Grant for Technology Commercialization of the World Bank and the Ministry of
Education and Science of the Republic of Kazakhstan (2013-2015) (Scientific
Supervisor)
Scientific grants for basic research, Republic of Kazakhstan (PFI 2007-2009,
2009-2011, 2010-2012, 2015-2017).

Courses taught: Physical research methods (B), Fundamentals of quantum
mechanics (B), Physicochemical methods for studying the structure of fluorescent
organic compounds (PhD), Synthesis of chromophore-containing polymers and
dye-polymer compositions (PhD), Luminescent solar concentrates (PhD),
Quantum mechanics and computer chemistry (PhD), Quantum dynamics of non-
rigid molecules (PhD).

Publications (favorites): Author of over 200 scientific publications, has 10
patents of the Republic of Kazakhstan, 2 monographs, 1 textbook; more than 20
articles in peer-reviewed foreign scientific journals based on THOMSON
REUTERS.

1. Benderskii V.A., Irgibaeva I.S., Vetoshkin E.V., Trommsdorff H.P. Tunneling splitting in vibrational spectra of non-rigid molecules VIII. Six-dimensional tunneling dynamics of hydrogen peroxide and its isotopomers // Chem. Phys., 2000, Vol. 262, P. 369-391.
2. Бендерский В.А., Ветошкин Е.В., Иргибаева И.С., Троммсдорфф Х.П. Многомерная тунNELьная динамика протонного переноса в молекуле малонового альдегида и ее изотопомерах. Известия АН Сер. Хим., №7, с. 1096 - 1105 , 2001 in Russian (Chem. Bull. International Edition, 2002, V. 50, P. 1148-1160 in English).
3. Benderskii V.A., Vetoshkin E.V., Irgibaeva I.S., Trommsdorff H.P. Molon aldehyde and its isotopomers as a test case for fully coupled multidimensional tunneling dynamics. Chemical Physics, v. 262, p.393-422, 2000.
4. Irgibaeva I.S. Determination of the parameters of multidimension vibration Hamiltonian of CH_3NH_2 from quantum chemical data // International Journal of Quantum Chemistry, 2004, Vol. 96, P. 210-218.
5. Irgibaeva I.S. Ab initio modelling of reaction of primary aliphatic diamines with CS_2 in alkaline medium. International Journal of Quantum Chemistry, 2006, Vol. 106, №10. P. 2214 - 2221.
6. Aldongarov A. A., Barashkov N.N., Irgibaeva I.S. **Calculated spectral properties of perylene orange, perylene red, and their complex with sodium azide.** International Journal of Quantum Chemistry, 2007, v. 107, № 13, 2331-2342.
7. Irgibaeva I.S., Aldongarov A. A., Barashkov N.N., Schmedake T. **Study of Spectral Properties of Bis(1,10-phenantraline) Silicon Hexacoordinated Complexes by Density Functional Theory.** International Journal of Quantum Chemistry, 2008, v. 108, № 14, 2641-2647.
8. Irgibaeva I.S., Birimzhanova D.A., Barashkov N.N. **Research of Electronic Absorption Spectra of Benzazoles Derivatives by Ab initio Calculations.** International Journal of Quantum Chemistry, 2008, v. 108, № 14, 2700-2710.
9. I. S. Irgibaeva, N.N. Barashkov, A.A. Aldongarov, A. Mantel, I.I.

- Barashkova. Modeling of Plastic Scintillation Composition of Poly(methyl Methacrylate)–Naphthalene–POPOP. International journal of quantum chemistry. 2010. V.111, N11, P.2540-2544.
10. Yang Liu, Youhong Tang, Nikolay N. Barashkov, Irina S. Irgibaeva, Jacky Wing Yip Lam, Rongrong Hu, Dinara Birimzhanova, Ben Zhong Tang. Fluorescence Chemosensor for Visual Detection of Carbon Dioxide . J. AM. CHEM. SOC. 2010, 132, 13951–13953
11. Tamara V. Sakhno, Nikolay N. Barashkov, Irina S. Irgibaeva, S. V. Pustovit, Yuriy E. Sakhno. Polymer Coatings for Protection of Wood and Wood-Based Materials. Advances in Chemical Engineering and Science, 2016, 6, 93-110.
12. Mantel A.I., Aldongarov A.A., Shautenbaeva N.K., Irgibaeva I.S., Lang A.A., Baraskov N.N., Mukataev I/ Perylene Derivative Dyes Luminescence in Polysiloxane Matrix in Presence of Gold Nanoparticles/ Journal of Fluorescence. – 2016. – Vol. 26. – P. 2213-2223.
13. A. A. Aldongarov, A. M. Assilbekova, I. S. Irgibaevab and N. N. Barashkov. Modeling electronic excitations/formation of trap states in semiconducting nanocrystals. Chem. Modell., 2020, 15, 173–188| DOI: 10.1039/9781788015868-00173
14. Irina Irgibayeva, Arthur Mantel, Nikolay Barashkov, Olga Lu, Akbota Yensebayeva, Anuar Aldongarov, Svetlana Mendigaliyeva, Irina Barashkova. Study of the Effect of the Introduction of Tris(Bipyridine)Ruthenium(II) Chloride into Silicon Dioxide Particles by Spectrofluorometry Methods. [Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy](#). 246 (2021) 119007. <https://doi.org/10.1016/j.saa.2020.119007>, Impact factor 3,232