

**ALEXEI V. MILKOV, Ph.D.**

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Award-winning internationally acclaimed geoscientist. Collaborative and innovative leader with extensive subsurface expertise in 30+ onshore and offshore basins around the world. Diverse career including research, teaching and managerial roles in industry and academia. Published 43 peer-reviewed articles, have high citation index (h-index of 29). Areas of expertise include:

- Petroleum Geochemistry
- Unconventional Resources
- Estimation of Oil and Gas Resources
- Mud Volcanoes
- Geological Risks in Exploration
- Leadership
- Management of Scientific Personnel
- Oil and Gas Exploration
- Basin Modeling
- Gas Hydrates
- Geological Emissions of Methane
- Exploration Decision-Making
- Coaching and Mentoring
- Teaching

**EDUCATION:**

- 2001: Ph.D. Geology, Texas A&M University, College Station, TX. Gas hydrate dissertation. Major adviser: R. Sassen.
- 1998: M.Sc. Petroleum Geology, Saint-Petersburg State University, Saint-Petersburg, Russia. Major adviser: G.D. Ginsburg.
- 1996: M.Sc. Geology, Saint-Petersburg State University, Saint-Petersburg, Russia.
- 1993-1998: Studied towards economics degree at Saint-Petersburg State University, Saint-Petersburg, Russia.

**TEACHING EXPERIENCE:**

- November 2010: 3-day course on Gas Hydrate Exploration and Development at Korea Institute of Geoscience and Mineral Resources (KIGAM), South Korea.
- 2004 – 2011: BP 21st Century Petroleum Systems course, worldwide (Houston, Tyumen, Moscow).
- 2006 – 2007: BP Practical Reservoir Geochemistry course, worldwide (Houston, Sunbury, Anchorage).
- 2006 – 2007: Parts of BP 21st Century Pore Pressure Prediction and BP Reservoir Quality Prediction courses to TNK-BP employees (Moscow, Tyumen).
- January 2006: "Introduction to Petroleum Systems" at the Department of Earth & Atmospheric Sciences, Cornell University.

- 1999 – 2000: Physical Geology (lab section) at the Department of Geology and Geophysics, Texas A&M University.

## **PROFESSIONAL EXPERIENCE:**

- January 2015 – October 2015: **Exploration Manager, New Ventures, Murphy Oil**, Houston, Texas.
  - Directed identification, evaluation, maturation and recommendation of exploration opportunities in West Africa, North America and South America.
  - Improved regional understanding of 4 major basins by leading and coaching team.
  - Evaluated >100 New Venture opportunities using strategic, technical, economic and commercial criteria.
- February 2012 – December 2014: **Senior Manager Exploration Technical, Sasol Upstream Oil and Gas**, Johannesburg, South Africa.
  - Was accountable for technical quality and excellence of exploration deliverables produced by teams in Johannesburg, London, Sydney and Calgary.
  - Developed, owned and implemented technical exploration processes, standards, tools and best practices.
  - Led Exploration Technical Reviews and participated in Value Assurance Reviews for conventional and unconventional opportunities in Africa, North America and Australia.
  - Led exploration skill pool management (hiring, development, promotion).
  - Exploration manager for three non-operated Joint Ventures in West Africa. Managed prospect maturation process and exploration wells in deep-water Nigeria and in pre-salt plays offshore Gabon. Obtained internal approvals for exploration projects, oversaw exploration budget (>10 MM\$), represented the company in TCMs/OCMs.
  - Led teams that evaluated unconventional plays in Australia, Botswana and Canada. Mapped and valued shale oil and gas resources of Velkerri play in Beetaloo basin. Accessed new acreage. 3 wells drilled in 2015 confirmed the play potential. Drilled 9 holes in CBM play in Kalahari basin. Relinquished the acreage based on well results. Identified liquid-rich areas in Montney play. Recommended Nordeg oil play wells on held acreage.
  - Project manager for JSBA with Eni in Mozambique.
  - Managed a team of exploration specialists (5 direct reports) and technical work carried out by consultancies.
- February 2011 – February 2012: **Manager of Exploration Assurance, BP Russia**, Moscow, Russia.
  - Evaluated plays and prospects and advised senior management on exploration investment decisions in Russia and overseas. Ensured technical excellence and consistency of exploration deliverables (probabilistic volumes, risks, ranking, portfolio management, postmortem analysis) in TNK-BP.
- February 2007 – February 2011: **Geologist-Petroleum Systems Analyst, BP Russia Offshore SPU**, Houston, TX and Moscow, Russia.

- Performed basin modeling and geochemical studies to support frontier exploration offshore Russia (offshore Sakhalin, Barents Sea, Kara Sea, Laptev Sea, Eastern Siberia Sea).
- Assured subsurface activities in BP-Rosneft JV in Sakhalin (2D and 3D seismic and EM surveys, PI maintenance, prospect volumes and risks, selection of drilling candidates).
- Led geochemical fingerprinting of tarballs and oil slicks collected in the GoM in response to the Macondo oil spill.
- January 2006 – 2008: **Adjunct Professor, Department of Earth & Atmospheric Sciences, Cornell University, Ithaca, NY.**
- March 2003 – January 2007: **Geoscientist (Petroleum Systems Analyst), BP America, Exploration and Production Technology Group, Houston, TX.**
  - Developed and applied reservoir geochemistry toolkit to constrain compartmentalization, charge history, fluid quality, reservoir surveillance, production allocation etc. in the Gulf of Mexico (Ariel, Dorado, Great White, Fourier, Herschel, Holstein, Horn Mountain, Kepler, Mad Dog, Marlin, Pompano, Puma, Thunder Horse fields), Alaska (Milne Point field), offshore Trinidad (Mahogany field) and offshore Angola (Plutão, Saturno, Venus, Marte fields).
  - Integrated basin modeling and geochemistry to evaluate petroleum systems and predict occurrence, phase, quality, volume, and column height of hydrocarbons in prospects in the Gulf of Mexico (GI90, GI-WD complex, Horn Mountain NWF, Carrot, Kepler, H-2), offshore Trinidad, Beaufort-Mackenzie Basin, Colombia.
  - Provided geochemical support in environmental projects.
  - Developed and taught BP internal course "Practical Reservoir Geochemistry".
- September 2002 – February 2003: **Postdoctoral Scholar, Deep Ocean Exploration Institute, Woods Hole Oceanographic Institution, Woods Hole, MA.**
  - Studied the origin and flow of fluids at Hydrate Ridge offshore Oregon (based on results of ODP Leg 204).
- September 2001 – September 2002: **Postdoctoral Research Associate, Geochemical and Environmental Research Group, College of Geosciences, Texas A&M University, College Station, TX.**
  - Geochemical study of reservoir oil and gases and venting hydrocarbons on the Gulf of Mexico slope.
  - Co-PI in the Applied Gas Hydrate Research Program funded by industry and the U.S. government.
- September 1998 – August 2001: **Graduate Research and Teaching Assistant, Department of Geology and Geophysics, Texas A&M University, College Station, TX.**
  - Participated in the Applied Gas Hydrate Research Program (PI- R. Sassen), modeled gas hydrate stability to study gas hydrate as a geohazard, potential energy resource and an agent of global change.
  - Participated in the Integrated Reservoir Investigations Group (PI- J. Watkins).
- June 1997 – August 1997: **Geologist (internship), GAZPROM, Norilsk, Russia.**
  - Supervised acquisition and geochemical analysis of gas samples.

- Designed well-site experiments.
- June 1996 – August 1996: **Well-site Geologist (internship), GAZPROM**, Norilsk, Russia.
  - Assisted in well-head gas samples acquisition and analysis.
- April 1995 – May 1998: **Research Assistant, All-Russia Research Institute for Geology and Mineral Resources of World Ocean (VNIIOkeangeologia)**, Saint-Petersburg, Russia.
  - Examined geochemical gas and pore water data.
  - Maintained a gas hydrate database.

### **PROFESSIONAL DEVELOPMENT COURSES:**

- March 2013 (5 days): Evaluating resource plays (Nautilus), Houston, TX.
- June 2012 (3 days): Best Practice in Exploration Management: Portfolio, Process & People (WTG Energy Training), London, UK.
- September 2011 (6 days): ASSET Management (BP Internal course), Aviemore, UK.
- September 2010: HSSE Management in Geophysical Projects (BP Internal course), Sunbury, UK.
- September-December 2010 (9 days): Managing major energy projects, SKOLKOVO / MIT, Moscow, Russia.
- October 2009 (3 days): Effective Teamworking (BP Internal course), Moscow, Russia.
- September 2009 (5 days): MPath training, Sunbury, UK.
- July 2008 (5 days): Integrated Petroleum Exploration (BP Internal course), Banff, Canada.
- June 2007 (7 days): Fieldtrip in California (turbidites, Monterey formation).
- May 2007 (2 days): First Aid in Fieldtrips (BP Internal course), Houston, TX.
- September 2006 (3 days): Reservoir Quality Prediction (BP internal course), Tyumen, Russia.
- June 2006 (3 days): 21<sup>st</sup> Century Pore Pressure Prediction (BP internal course), Moscow, Russia.
- November 2005 (2 days): Positive Power and Influence (BP internal course), Houston, TX.
- July 2005 (1 week): RAD-A (Reservoir Appraisal and Development, Static Data) (BP internal course), Austin, TX.
- May 2005 (1 day): Water and Helicopter Survival (McMillan Offshore Survival Training), Houston, TX.
- March 2005 (1.5 days): Communicating for Results (BP internal course), Houston, TX.
- February 2005 (2 weeks): Seismic Interpretation Fundamentals (BP internal course), Houston, TX.
- December 2004 (1 day): Reservoir Geochemistry, Mérida, Yucatán, Mexico.
- November 2004 (1 week): Petroleum Economics & Business (BP internal course), Houston, TX.
- October 2004 (2 days): MPath (Petroleum Migration) Course (BP-Permedia), Houston, TX.

- August 2004 (1 week): 21<sup>st</sup> Century Structural Geology (BP internal course), Houston, TX.
- June 2004 (3 days): Temis3D (Basin Modeling) Course (BP-Beicip), Houston, TX.
- April-May 2004 (2 weeks): BP Induction (Basics of hydrocarbon exploration and production), Mayaro and Port-of-Spain, Trinidad.
- February 2004 (1 week): 21<sup>st</sup> Century Applied Geophysics (BP internal course), Houston, TX.
- October 2003 (2 weeks): 21<sup>st</sup> Century Applied Petroleum Geoscience (BP internal course), Austin, TX.
- August 2003 (1 week): 21<sup>st</sup> Century Stratigraphy and Reservoirs (BP internal course), Houston, TX.
- July 2003 (1 week): Reservoir Fluids and PVT analysis (BP internal course), Houston, TX.
- March 2003 (1 week): 21<sup>st</sup> Century Petroleum Systems (BP internal course), Houston, TX.
- July 1997 (3 weeks): MAST3-Intensive Course: Methane in the Marine Environment, Longhirst Hall, UK.

#### **EXPERIENCE AT SEA:**

- August 2005 (3 days): Drilling jack-up rig ENSCO81, West Delta Block 95 in the Gulf of Mexico (shelf).
- July-August 2002 (50 days): R/V JOIDES RESOLUTION (ODP Leg 204), Hydrate Ridge offshore Oregon, Sedimentologist / Organic Geochemist / Pressure Core Specialist.
- May-June 2002 (9 days): R/V SEAWARD JOHNSON II (including one dive on JOHNSON-SEA-LINK I submersible), Gulf of Mexico, Scientist.
- April 2002 (1 day): R/V POINT LOBOS, ROV VENTANA, Monterey Bay.
- December 1999 (14 days): R/V POWELL, Gulf of Mexico, Research Assistant.
- April 1999 (14 days): R/V GYRE, Gulf of Mexico, Research Assistant.
- July-August 1996 (50 days): R/V PROFESSOR LOGACHEV, Norwegian-Greenland Sea, Research Assistant.

#### **AWARDS, HONORS, AND FELLOWSHIPS:**

- J. C. "Cam" Sproule Memorial Award from the American Association of Petroleum Geologists (AAPG) for the best contribution to petroleum geology by a member who is 35 years of age or younger – 2012.
- Sasol Petroleum International Star Award for Technology and Innovation Team of the Year. Member of the winning Durban Basin Play Based Exploration team – 2012.
- Pieter Schenck Award from the European Association of Organic Geochemists (EAOG), given every second year to a scientist normally under 35 years of age who has made a major contribution in any specific area of organic geochemistry or a related field – 2011.

- Medal and Certificate of Excellence from The Worshipful Company of Tallow Chandlers (London, UK) for application of technology in BP – 2005.
- Certificate of Excellence from The Worshipful Company of Tallow Chandlers (London, UK) for application of technology in BP – 2004.
- GCAGS/GCSSEPM Gordon I. Atwater Best Poster Award (with H.H. Roberts, J.M. Coleman, J.L. Hunt, W.W. Shedd, and R. Sassen) – 2002.
- Postdoctoral Award from Monterey Bay Aquarium Research Institute (MBARI) – 2002 (declined in favor of WHOI).
- Postdoctoral Award from Woods Hole Oceanographic Institution (WHOI) (Deep Ocean Exploration Postdoctoral Scholar) – 2002.
- AAPG/EMD Best Poster Award (with H.H. Roberts, J.M. Coleman, J.L. Hunt, W.W. Shedd, and R. Sassen) – 2001.
- Gulf Coast Association of Geological Societies Student Research Award – 2001.
- Geological Society of America Student Research Award – 2001.
- Gulf Coast Association of Geological Societies Travel Award – 2000.
- American Association of Petroleum Geologists Grant-in-Aid – 2000.
- Gulf Coast Association of Geological Societies Student Research Award – 2000.
- Halbouty Graduate Fellowship, Department of Geology & Geophysics, TAMU – 2000.
- Graduate Fellowship, Department of Geology & Geophysics, TAMU – 1999.
- American Association of Petroleum Geologists Grant-in-Aid – 1998.
- Saint-Petersburg City Government Student Research Award – 1998.
- International Soros Science Educational Program Student Research Award – 1998.
- Russian Foundation for Fundamental Research Award – 1997.
- Saint-Petersburg City Government Student Research Award – 1997.

#### **MEDIA ARTICLES FEATURING MY EXPERT OPINIONS:**

- *Le Bulletin de l'Industrie Pétrolière* (BiP) ("Hydrates de méthane: des pistes nouvelles en Alaska et au Japon" or "Methane hydrates: new advances in Alaska and Japan") – 2012 (January 31st issue).
- *Süddeutsche Zeitung* ("Feuer aus dem Eis" or "Fire from the Ice") – 2008 (September 11th issue) (<http://www.sueddeutsche.de/wissen/788/309723/text/4/>)
- *New Scientist* ("Global warming bubbles up from the ocean") – 2006 (March 4th issue)
- *Geotimes* ("Feuding over the origins of fossil fuels") – 2005 (October issue)
- *Focus* ("Strohfeuer vom Meeresboden" or "Straw fire at the seafloor") – 2005 (April 11th issue)
- *Süddeutsche Zeitung* ("Schmelzende Hoffnung" or "Melting Hope") – 2005 (January 7th issue)
- *Die Welt* ("Dämpfer für den Energielieferanten Methan-Eis" or "Show-stopper for gas hydrate as a supplier of energy") – 2004 (December 8th issue)
- *Geotimes* ("Detecting marine gas hydrates / Mining for tomorrow") – 2004 (November issue)
- *Geotimes* ("Gas hydrates as a future energy resource") – 2004 (November issue)

- *NGV-Geonieuws* ("Vorraden gashydraten blijken veel geringer dan eerder aangenomen" or "Supplies of gas hydrates appeared much smaller than earlier accepted") – 2004 (November, issue 502)
- *Bild der Wissenschaft* ("Methan-Eis – nichtmehr als ein Strohfeuer?" or "Gas hydrates – nightmare as a straw fire?" – 2004 (November issue)
- *World Oil* ("What's new in exploration: Methane outgassing") – 2004 (September issue)
- *Geotimes* ("The missing methane link") – 2004 (August issue)
- *BBC News Online* ("Ocean methane stocks overstated") – 2004 (February 17th issue)
- *Geotimes* ("Inorganic origin of oil: Much ado about nothing?") – 2002 (November issue)
- *Dallas Morning News* ("At sea, a slice of life") – 2002 (August 26th issue)
- *Hart's E&P* ("Offshore gas hydrates begin to add up") – 2002 (June issue)

### **PROFESSIONAL SERVICES:**

- Industry adviser for the team of students from the University of Western Cape which participated in AAPG Imperial Barrel Award. The team won the regional competition in Africa Region and progressed to Global competition in Houston, TX (2014).
- Invited Associate Editor for a special issue of *Organic Geochemistry* (2007-2008).
- Member of the Scientific Committee, *International Meeting on Organic Geochemistry* (2007).
- Co-chair of *Houston Organic Geochemistry Society* (2003-2007).
- Journal reviewer for *Applied Geochemistry*, *AAPG Special Memoir on Shale Tectonics*, *Chemical Geology* (3), *Computers & Geosciences*, *Geochimica et Cosmochimica Acta* (3), *Geofluids*, *Geology* (8), *Global and Planetary Change*, *Global Biogeochemical Cycles*, *Earth-Science Reviews*, *EOS* (2), *Earth and Planetary Science Letters* (2), *Energy & Fuels*, *Energies*, *Environmental Geology*, *Environmental Science and Technology*, *Journal of Geodynamics*, *Journal of Foraminiferal Research*, *Journal of Geophysical Research*, *Marine and Petroleum Geology* (5), *Marine Geophysical Researches* (2), *Marine Geology*, *Marine Chemistry*, *Nature Geoscience* (2), *Nature Climate Change*, *Organic Geochemistry* (4), *Proceedings of the ODP*, *Science*, *Terrestrial, Atmospheric and Oceanic Sciences*.
- Proposal reviewer for *National Science Foundation* (2), *National Geographic Society*, *The International Science and Technology Center* (2).
- Report reviewer for *National Academy of Science / National Research Council*.
- Invited chair of technical sessions at:
  - *The Fourth International Conference on Gas Hydrates* (Yokohama, Japan, May, 2002) (did not attend the conference because of a research cruise).
  - *NATO Advanced Research Workshop "Mud Volcanism, Geodynamics and Seismicity"* (Baku, Azerbaijan, May 2003).
  - *23<sup>rd</sup> International Meeting on Organic Geochemistry* (Torquay, UK, September 2007).
  - *AAPG International Meeting* (Cape Town, South Africa, October 2008).

- *25<sup>th</sup> International Meeting on Organic Geochemistry* (Interlaken, Switzerland, September 2011).
- *AAPG Annual Convention and Exhibition* (Houston, TX, 2014).
- Judge of poster sessions at AAPG Annual Conventions (2003, 2005).
- Member of thesis/dissertation committee, University of Texas at Austin (2008).

## **PRESENTATIONS:**

- September 2015: *Schlumberger GeoX and PetroMod Users Meeting*, Istanbul, Turkey (talk).
- April 2014: *AAPG Annual Meeting*, Houston, TX (talk).
- February 2014: Invited, *Energy and Geosciences Institute, University of Utah*, Salt Lake City, USA (2 talks).
- September 2011: *25<sup>th</sup> International Meeting on Organic Geochemistry*, Interlaken, Switzerland (two posters).
- May 2011: *International Oil Spill Conference*, Portland, OR (poster).
- November 2010: *SETAC Annual Meeting*, Portland, OR (talk).
- October 2010: *Successes in Organic Geochemistry*, Novosibirsk, Russia (talk).
- April 2010: *AAPG Annual Meeting*, New Orleans, LA (talk).
- April 2010: *4<sup>th</sup> International Conference & Exhibition, EAGE*, St. Petersburg, Russia (talk).
- June 2009: *AAPG Annual Meeting*, Denver, CO (talk).
- May 2009: *AAPG Hedberg Research Conference "Basin and Petroleum System Modeling: New Horizons in Research and Applications"*, Napa, CA (poster).
- October 2008: *AAPG International Meeting*, Cape Town, South Africa (poster).
- September 2007: *23<sup>rd</sup> International Meeting on Organic Geochemistry*, Torquay, UK (poster).
- April 2007: Invited, *Houston Organic Geochemistry Society*, Houston, TX (talk).
- April 2007: *AAPG Annual Meeting*, Long Beach, CA (talk).
- December 2006: Invited, *Moscow Gubkin Oil and Gas University*, Moscow, Russia (talk).
- December 2006: Invited, *Moscow State University*, Moscow, Russia (talk).
- December 2006: Invited, *Joint Session of SEG, EAGE, AAPG*, Moscow, Russia (talk).
- November 2006: *AAPG International Conference and Exhibition*, Perth, Australia (talk).
- October 2006: Invited, *Houston Geological Society Luncheon*, Houston, TX.
- September 2005: *22<sup>nd</sup> International Meeting on Organic Geochemistry*, Sevilla, Spain (talk and poster)
- September 2005: Invited, *Tallow Chandlers Competition*, London, UK (talk).
- June 2005: *AAPG Annual Convention*, Calgary, Canada (talk and poster).
- December 2004: *9<sup>o</sup> Congreso Latinoamericano de Geoquímica Orgánica*, Mérida, Yucatán, Mexico (talk).
- September 2004: Invited, *Tallow Chandlers Competition*, Sunbury, UK (talk).
- April 2004: Invited, *Drilling Gas Hydrates at Hydrate Ridge, Leg 204 2nd Post-cruise Meeting*, Barcelona, Spain (2 talks).

- December 2003: Invited, *AGU Fall Meeting*, San Francisco, CA, USA (talk).
- December 2003: Invited, *Rice University / University of Houston SPE Student Chapter*, Houston, TX, USA (talk).
- November 2003: Invited, *AAPG Committee on Resource Evaluation*, Houston, TX, USA (talk).
- November 2003: Invited, *Fire in Ice Gas Hydrate Workshop*, Rice University, Houston, TX, USA (talk).
- June 2003: Invited, *MMS Gas Hydrate Brainstorming Session*, Washington, DC, USA (talk).
- May 2003: Invited, *NATO Advanced Research Workshop "Mud Volcanism, Geodynamics and Seismicity"*, Baku, Azerbaijan (talk).
- May 2003: *AAPG Annual Convention*, Salt Lake City, UT, USA (2 talks).
- February 2003: Invited, *ODP Pressure Coring Workshop*, College Station, TX, USA.
- May 2002: Invited, *Second Tsunami Symposium*, Honolulu, HI (did not attend the symposium because of a research cruise, the talk was presented by W. Sager).
- May 2002: *The Fourth International Conference on Gas Hydrates*, Yokohama, Japan (did not attend the conference because of a research cruise, the poster was presented by E. Jones).
- May 2002: Invited, *ChevronTexaco Gulf of Mexico Gas Hydrates JIP*, Houston, TX, USA (2 posters).
- April 2002: Invited, *Monterey Bay Aquarium Research Institute (MBARI)*, Moss Landing, CA, USA (informal talk).
- March 2002: Invited, *ChevronTexaco Gulf of Mexico Gas Hydrates JIP*, Houston, TX, USA (poster).
- March 2002: *AAPG Annual Convention*, Houston, TX, USA (talk and 2 posters).
- February 2002: Invited, *BP Exploration*, Houston, TX, USA (talk).
- January 2002: Invited, *Colorado School of Mines Departmental Seminars*, Golden, CO, USA (2 talks).
- December 2001: *AGU Fall Meeting*, San Francisco, CA, USA (2 posters).
- November 2001: Invited, *BP Exploration*, Houston, TX, USA (informal talk).
- October 2001: *GCAGS Annual Convention*, Shreveport, LA, USA (talk).
- October 2001: Invited, *Woods Hole Oceanographic Institution (WHOI) Departmental Seminar*, Woods Hole, MA, USA (talk).
- October 2001: Invited, *Cornell University Departmental Seminar*, Ithaca, NY, USA (talk).
- June 2001: *AAPG Annual Convention*, Denver, CO, USA (2 posters).
- November 2000: *GSA Annual Meeting*, Reno, NV, USA (2 talks).
- October 2000: *GCAGS Annual Convention*, Houston, TX, USA (talk).
- April 2000: *AAPG Annual Convention*, New Orleans, LA, USA (poster).
- April 1999: *AGHRP Meeting*, College Station, TX, USA (talk).
- February 1998: *Carbonate Mud Mounds and Cold Water Reefs International Conference*, Gent, Belgium (poster and talk).
- October 1997: *XII International Conference on Marine Geology*, Moscow, Russia (talk).

- June 1997: *Advance Study Course: Methane in the Marine Environment*, Longhirst Hall, UK (2 posters).
- June 1996: *2nd International Conference on Natural Gas Hydrates*, Toulouse, France (poster).

### **SOCIETY MEMBERSHIPS:**

- American Association of Petroleum Geologists (AAPG) - active
- American Geophysical Union (AGU)
- Geological Society of America (GSA)
- European Association of Organic Geochemists (EAOG)
- Houston Geological Society (HGS)
- Houston Organic Geochemistry Society (HOGS)

### **COMPUTER SKILLS:**

- Standard Tools: Windows, UNIX, Word, Excel, PowerPoint, Corel Draw, Canvas, Adobe Illustrator, Kaleidagraph.
- Petroleum Systems Toolkit: ORGAS-KINEX (petroleum kinetics modeling), Genesis (1,2D basin modeling), Trinity (map-based basin modeling), Temis2D/3D (basin modeling), MPath (3D hydrocarbon migration modeling), PetroMod (1-2-3D), PeakView (GC trace manipulator), ReserView (GC trace analyzer), ChromEdge Suite, OilUnmixer.
- Other Professional Tools: GeoX, Crystal Ball, ArcView GIS (ESRI certified user), Kingdom Suite (seismic interpretation), SeisWorks (seismic interpretation), CSMHYD (gas hydrate stability modeling), MIX (modeling of mixtures), JMP and STATISTICA (statistical packages).

### **LANGUAGE SKILLS:**

- English – fluent
- Russian – native
- German – good reading ability, poor speaking and writing abilities

### **CONSULTING PROJECTS:**

1. Seafloor hydrate hazards in the Gulf of Mexico (a study for ChevronTexaco) by A.V. Milkov, R. Sassen, and E.D. Sloan - January 2002.
2. Improved fluid correlations in gas-rich systems (a study for BP Exploration) – April-August 2002.

**CITIZENSHIP:** Citizen of Russia, Permanent Resident of the USA (Green Card holder).

## PUBLICATIONS:

### Peer-reviewed articles (h-index of 29)

1. **Milkov, A.V.** (2015) Risk tables for less biased and more consistent estimation of probability of geological success (PoS) for segments with conventional oil and gas prospective resources. *Earth-Science Reviews*, v. 150, pp. 453–476.
2. **Milkov, A.V.** (2011) Worldwide distribution and significance of secondary microbial methane formed during petroleum biodegradation in conventional reservoirs. *Organic Geochemistry*, v. 42, pp. 184-207.
3. **Milkov, A.V.** (2010) Methanogenic biodegradation of petroleum in the West Siberian basin (Russia): Significance for formation of giant Cenomanian gas pools. *AAPG Bulletin*, v. 94, pp. 1485–1541.
4. **Milkov, A.V.** (2010) The role of methane generating biodegradation of hydrocarbons in formation of giant Cenomanian pools of dry gas in the north of West Siberia. *Geologiya Nefti i Gaza*, issue 4, p. 55-61 (in Russian). Original Russian title: Мильков А.В. (2010) Роль метанообразующей биодеградациии углеводородов в формировании гигантских сеноманских залежей сухого газа на севере Западной Сибири. "Геология нефти и газа" № 4, стр. 55-61.
5. Etiope G., A. Feyzullayev, **A.V. Milkov**, A. Waseda, K. Mizobe, C.H. Sun (2009) Evidence of subsurface anaerobic biodegradation of hydrocarbons and potential secondary methanogenesis in terrestrial mud volcanoes. *Marine and Petroleum Geology*, v. 26, pp. 1692-1703.
6. Etiope, G., **A.V. Milkov**, and E. Derbyshire (2008) Did geologic emissions of methane play any role in Quaternary climate change? *Global and Planetary Change*, v. 61, pp. 79-88.
7. **Milkov, A.V.**, E. Goebel, L. Dzou, D.A. Fisher, A. Kutch, N. McCaslin, and D. Bergman (2007) Compartmentalization and time-lapse geochemical reservoir surveillance of the Horn Mountain oil field, deep-water Gulf of Mexico. *AAPG Bulletin*, v. 91, no. 6, pp. 847-876.
8. **Milkov, A.V.** and L. Dzou (2007) Geochemical evidence of secondary microbial methane from very slight biodegradation of undersaturated oil in a deep hot reservoir. *Geology*, v. 35, pp. 455-458.
9. Claypool, G.E., **A.V. Milkov**, Y.-J. Lee, M.E. Torres, W.S. Borowski, and H. Tomaru (2006) Microbial methane generation and gas transport in shallow sediments of an accretionary complex, southern Hydrate Ridge (ODP Leg 204), offshore Oregon, USA. In Tréhu, A.M., Bohrmann, G., Torres, M.E., and Colwell, F.S. (Eds.), Proc. ODP, Sci. Results, 204, 1–52 [Online]. Available from World Wide Web: <[http://www-odp.tamu.edu/publications/204\\_SR/VOLUME/CHAPTERS/113.PDF](http://www-odp.tamu.edu/publications/204_SR/VOLUME/CHAPTERS/113.PDF)>. [Cited YYYY-MM-DD].
10. **Milkov, A.V.** and W. Xu (2005) Comment on "Gas hydrate growth, methane transport, and chloride enrichment at the southern summit of Hydrate Ridge,

- Cascadia margin off Oregon" by Torres et al. [Earth Planet. Sci. Lett. 226 (2004) 225-241]. *Earth and Planetary Science Letters*, v. 239, pp. 162-167.
11. **Milkov, A.V.** and G. Etiope (2005) Global methane emission through mud volcanoes and its past and present impact on the Earth's climate. Comment. *International Journal of Earth Science*, v. 94 (3), pp. 490-492.
  12. **Milkov, A.V.** (2005) Molecular and stable isotope composition of natural gas hydrates: A revised global dataset and basic interpretations in the context of geological settings. *Organic Geochemistry*, v. 36 (5), pp. 681-702.
  13. **Milkov, A.V. (2005)** Global distribution of mud volcanoes and their significance as an indicator of active petroleum systems, a source of methane in the atmosphere and hydrosphere, and a geohazard. In: G. Martinelli and B. Panahi (Eds.) *Mud Volcanism, Geodynamics and Seismicity*, NATO Science Series Volume, Springer, pp. 29-34.
  14. **Milkov, A.V.**, G.E. Claypool, Y.-J. Lee, and R. Sassen (2005) Gas hydrate systems at Hydrate Ridge offshore Oregon inferred from molecular and isotopic properties of hydrate-bound and void gases. *Geochimica et Cosmochimica Acta*, v. 69 (4), pp. 1007-1026.
  15. Etiope, G. and **A.V. Milkov** (2004) A new estimate of global methane flux from onshore and shallow submarine mud volcanoes to the atmosphere. *Environmental Geology*, v. 46, pp. 997-1002.
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