

*CURRICULUM VITAE***Dr. Mikhail (Misha) Zolotov**

School of Earth and Space Exploration, Arizona State University  
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- Research:** Geochemistry of volatile elements (H, O, C, N, S, Cl, Na and K) and species (water, H<sub>2</sub>, carbon oxides, organic compounds) on terrestrial planets, early asteroids, moons of giant planets and habitable zone exoplanets. Oxidation-reduction and acid-base reactions, mineral formation, and rock alteration.
- Education:** Candidate of Sciences (a Ph.D. analog) in geology/mineralogy, Vernadsky Institute of Geochemistry and Analytical Chemistry, USSR Academy of Sciences, Moscow, 1989 (degree conferred in 1990)  
 Diploma in geology/geochemistry (with honor), Lomonosov Moscow State University, Moscow, USSR, 1982
- Employment:** 2006 – present: Research Professor (2011-present), Associate Research Professor (2006-2011), School of Earth and Space Exploration, Arizona State University  
 2002 – 2006: Faculty Research Associate, Department of Geological Sciences, Arizona State University  
 1997 – 2002: Senior Research Scientist, Department of Earth and Planetary Sciences, Washington University in St. Louis, Missouri  
 1985 – 1998: Senior Research Scientist (1992 – 1998), Junior Research Scientist (1985 – 1992), Vernadsky Institute of Geochemistry and Analytical Chemistry, USSR/Russian Academy of Sciences, Moscow.
- Visiting Appointments:** September 1996 – December 1996: Visiting Scientist, Department of Earth and Planetary Sciences, Washington University in St. Louis, Missouri  
 February 1996 – May 1996: Visiting Scientist, Department of Earth and Planetary Physics, University of Tokyo, Japan  
 November 1992 – March 1993: Visiting Scientist, Department of Geological Sciences, Arizona State University, Tempe, Arizona

**Specific research interests:**

- Gas-water-mineral type chemical interactions on Venus, Mars, Mercury, icy and rocky moons, and parent bodies of chondrites (asteroids)
- Formation and chemical evolution of oceans on icy moons
- Chemical weathering of rocks on Venus and Mars
- Oxidation states of planetary surfaces, asteroids, and icy satellites
- Geochemistry of planetary volcanic gases and hydrothermal systems
- Inorganic-organic reactions in the solar system
- Habitability of solar system bodies
- Interior structure, composition, and evolution of dwarf planet Ceres
- Gas-water-rock interactions on exoplanets

**Grants and fellowships**

Principal Investigator (PI), NASA Solar System Workings grant, 2019-23  
PI, NASA Solar System Workings grant, 2019-2023  
PI, NASA Habitable Worlds grant, 2018-2024  
PI, NASA Cosmochemistry grant, 2014-2019  
PI, NASA Mars Fundamental Research grant, 2013-2016  
PI, NASA Planetary Geology/Geophysics grant, 2011-2015  
PI, NASA Outer Planets Research grant, 2010-2014  
PI, NASA Cosmochemistry grant, 2010-2014  
PI, NASA Planetary Geology/Geophysics grant, 2008-2012  
PI, NASA Mars Fundamental Research grant, 2007-2012  
PI, NASA Cosmochemistry grant, 2007-2010  
PI, NSF Planetary Astronomy research grant, 2005-2009  
PI, NASA Outer Planets Research grant, 2005-2008  
PI, NASA Mars Fundamental Research grant, 2006  
PI, NASA Origins of Solar System grant, 2004-2007  
PI, Russian Foundation for Basic Research grant, 1994  
Japan Society for the Promotion of Science (JSPS) research fellowship, 1996  
NASA Space Grant at ASU (for mentoring undergraduate interns), 2005-2006  
Co-PI, NATO Research Collaborative grant, 1996  
Co-PI, Arizona State University – Vernadsky Institute sub-grant, 1992-1993  
Co-Investigator (Co-I), NASA Solar System Workings grant, 2023-2026  
Co-I, DAVINCI NASA Discovery-class mission to Venus, 2022-2024  
Co-I, NASA, MAss SPectrometer for Planetary EXploration/Europa (MASPEX), Europa Clipper mission grant, 2015-present  
Co-I, NASA, Radar for Europa Assessment and Sounding: Ocean to Near-surface (REASON) grant, Europa Clipper mission, 2015-present  
Co-I, NASA, SURface Dust Mass Analyzer (SUDA), Europa Clipper mission, 2016-present  
Co-I, NASA Exoplanet System Science (NexSS) grant, 2015-2021  
Co-I, NASA Outer Planets Research grant, 2010-2014  
Co-I, NASA Astrobiology Institute grant, 2009-2015  
Co-I, NASA Exobiology and Evolutionary Biology grant, 2005-2008  
Co-I, NASA Exobiology grant, 2002-2005  
Co-I, International Science Foundation grant, 1993-1994  
Co-I, Arizona State Univ. – Vernadsky Inst. Sci. Contract, 1992-1993

**Professional activities and service; university service**

- Co-Chair of the *Composition Working Group, Europa Clipper NASA Mission* (2020 - 2023)
- Member of the *Temperature-Time Tiger Team* to prepare *Thresholds of Temperature and Time for Mars Sample Return*” (a report requested by the NASA Mars Sample Return program, 2022)
- Member of the Publication Committee, *The Meteoritical Society* (2021-present)
- Member of the *Dean’s Faculty Advisory Council* at ASU, 2022 - present
- Member, science proposal review panels for NASA *Discovery, Emerging Worlds, Cosmochemistry, Habitable Worlds, Solar System Workings, Astrobiology Institute, Mars Fundamental Research, Planetary Geology and Geophysics, Outer Planets Research, and a non-specified NASA program* (2023).
- Reviewer of funding research proposals for the NASA *Cosmochemistry, Emerging Worlds, Origins of the Solar Systems, Habitable Worlds, Solar System Workings, Exobiology, Mars Fundamental Research, Mars 2020 Participating Scientists, Mars Data Analysis, Cassini Data Analysis, Outer Planets Research, a non-specified NASA program, Planetary Geology and Geophysics, Exobiology and Evolutionary Biology* programs, NASA *Postdoctoral Program, NASA Earth and Space Science Fellowship, NASA Astrobiology Institute, NASA Astrobiology Institute Director’s Discretionary Fund, National Science Foundation, The Petroleum Research Fund of the American Chemical Society, European Research Council Executive Agency, French National Research Agency, Swiss National Science Foundation, ETH Zurich Research Commission, and UKRI Future Leaders Fellowships.*
- Manuscript reviewer for *Science, Science Advances, Nature, Nature Geoscience, Nature Astronomy, Nature Communications, Nature Scientific Reports, Proc. Natl. Acad. Sci., Geochimica et Cosmochimica Acta, Journal of Geophysical Research: Planets, Meteoritics and Planetary Science, Earth and Planetary Science Letters, Icarus, Geophysical Research Letters, Planetary Science Journal, American Mineralogist, Astrophysical Journal, Astrophysical Journal Letters, Acta Astronautica, Chemical Geology, Computers and Geosciences, Astrobiology, Space Science Reviews, Reviews in Mineralogy and Geochemistry, Advances in Space Science, Solar System Research, Origins of Life and Evolution of Biospheres, Deep Sea Research, Remote Sensing, and the Oxford Research Encyclopedia of Planetary Science.*
- Organizer of the *Topics in Mineralogy of the Solar System* (with Steven Ruff) at ASU/SESE. 2006-2007, 2011)
- Organizer of the *Martian Mineralogy* (with Paul Niles) seminar series at the Department of Geology, ASU, 2004-2005
- Deputy director of the *Laboratory of Comparative Planetology and Meteoritics* at the Vernadsky Institute, Russian Academy of Sciences, Moscow (1991-1996)
- Organizing committee member for the *Workshop on Modeling Martian Hydrous Environments*, 2009
- Member of an international group “*Active Enceladus*” sponsored by the International Space Science Institute (ISSI), Bern, Switzerland (2009-2012).
- Member of science/technology implementation teams for an instrument proposal for the European Space Agency JUICE mission (2012), for three instrument proposals for future NASA Europa mission (2014), and for NASA Discovery (2010, 2015, 2019) and New Frontiers mission (2009, 2017) proposals.

Organizer, 18-th Russian-American Working Meeting on Planetology  
(Vernadsky-Brown Micro-symposium), Moscow, 1993

Head, Counsel of Junior Scientists at the Vernadsky Institute, Moscow, 1988-1989

Organizing committee member, *The First All-Soviet Union Symposium on  
Thermodynamics in Geology*, Suzdal', USSR, March 1985

**Professional  
societies:**

Meteoritical Society  
American Geophysical Union

**Invited  
Presentations and  
Lectures**

*Venus Experiments Workshop*, Wesleyan University, June 2023

*Venus geochemistry/petrology panel*. Decadal Survey in Planetary Sciences, 2021

*First Aqua-planetology symposium*, ELSI, Tokyo, 2019

*4<sup>th</sup> Tokyo Area Planetary Sciences meeting*, National Observatory of Japan, Tokyo, 2019

*Internal structure of carbonaceous chondrite parent bodies and their link with primitive asteroids*. Villefranche Sur Mer, France, June 2-4, 2014

*5<sup>th</sup> International Congress on the Science and Technology of Steelmaking*, Dresden, Germany, 2012 (invited talk on Mercury's melts and a public lecture)

*European Planetary Science Congress and the DPS meeting*, 2011

*American Geophysical Union Fall Meetings*, 1996, 2005a, 2005b, 2010, 2011

*Active Enceladus*, International Space Science Institute workshop, Bern, 2010

Colloquium talk, School of Earth and Space Exploration, ASU, 2010

Colloquium talk, Washington University in St. Louis, 2009

*The Enigma of Enceladus*, International Workshop, Leicester, UK, 2009

*Workshop on Modeling Martian Hydrous Environments*, Houston, 2009

*Evolution of Small Ice-Silicate Bodies in the Solar System*, Winthrop, WA, 2009

Lunar and Planetary Institute, Houston, 2006

Planetary Science Institute, Tucson, 2006

AGU Chapman Conf. on Venus as a Terrestrial Planet, Key Largo, FL, 2006

Moscow State University, Russia, 2004

Marine Biological Laboratory at Woods Hole, Massachusetts, 2001

University of Washington, Seattle, 2000

St. Louis Astronomical Society, 2000

University of Tokyo, Department of Earth and Planetary Physics, 1996

Experimental Mineralogy, Petrology, and Geochemistry, Moscow, 1994

Institute of Raumsimulation (DLR), Cologne, Germany, 1992

USSR Mineralogical Society Annual Meeting, Leningrad, 1988

**Other Oral Presentations**

*Lunar and Planetary Science Conferences*, Houston, TX, 1999-2007, 2010, 2011, 2014, 2015, 2018, 2019, 2023

*Annual Meetings of the Meteoritical Society*, 2003, 2004, 2005, 2008, 2013, 2015, 2018

*American Geophysical Union Fall meetings*, 1996, 1998, 2002, 2004, 2005, 2009, 2010, 2011, 2019, 2021

*Astrobiology Science Conferences*, 2000, 2006, 2010

*Joint European Planetary Science Congress and the DPS meeting*, 2011

*Goldschmidt Conference*, Prague, 2011

*The Moscow Solar System Symposium*, 2013, 2022

*40<sup>th</sup> COSPAR Assembly*, Moscow, 2014

*Active Enceladus*, International Space Science Institute, Bern, 2010

*Workshop on Venus Geochemistry: Progress, Prospects, and New Missions*, 2009

*Workshop on Ices, Oceans, and Fire: Satellites of the Outer Solar System*, 2007

*Enceladus Focus Group Meeting II*, 2007

*Europa Focus Group Meeting V*, 2006

*Oxygen in Asteroids and Meteorites*, 2005

*Second Conference on Early Mars*, 2004

*Origin of Earth and Moon*, 1998

*Scientific Conference for Mars Exploration*, Bad Honnef, Germany, 1992

*Intl. Workshop: Engineering Model of Mars Environment*, Hungary, 1990

*Fourth International Conference on Mars*, 1989

*Vernadsky-Brown Microsymposia on Comparative Planetology*, 1986-1989, 1991, 1995, 2002

Department of Geological Sciences/SESE, Arizona State Univ., 1990, 2004-2006, 2010

Department Earth and Planetary Sci., Washington University in St. Louis., 1997, 1999, 2000, 2002, 2009

Vernadsky Institute, Moscow, 1984, 1987, 1988, 1989, 1990, 1994, 1998

Woods Hole Oceanographic Institution, Marine Chemistry & Geochemistry, 2000

Brown University, Planetary Geology Group, 2000

**Teaching**

- *Planetary Geochemistry*, Arizona State University, 2015, 2019
- *Oceans and the Atmosphere*, Washington University in St. Louis, 2001, 2002
- *Planetary Materials*, Shandong University, Weihai campus, China, 2016 (one week class as a part of a three-weeks summer course)

**Advising,  
supervision,  
advisory  
committees**

Advising graduate students: Lev Spivak-Birndorf at ASU, 2008-2010 (supervise research), Christopher Glein at ASU, 2006-2010 (co-adviser), Amy McAdam at ASU, 2005-2008 (co-adviser), Ethan Edmans at ASU 2022-present (co-adviser)

Co-chair of the Ph.D. examination committee at ASU (Amy McAdam, 2008). Thesis is titled: “*Martian weathering processes: Terrestrial analogs and theoretical modeling studies*”

Member of the Ph.D. examination committees at ASU: James Ashley (2010), Christopher Glein (2012), Simon Porter (2013), Jinping Hu (2016), Divya Peddinti (2017), Travis Gabriel (2019), Emerson Speyerer (2023)

Member of the Ph.D. technical review committees at ASU: Amy McAdam (2007, co-chair), James Ashley (2009), Christopher Glein (2011), Simon Porter (2013), Divya Peddinti (2016), Travis Gabriel (2019), Emerson Speyerer (2022)

Chair of the Candidacy Examination committees at SESE/ASU: Travis Gabriel (2017), Sierra Ferguson (2018), John Christoph (2018), Emerson Speyerer (2020), Eamonn Needham (2021), Ashley Herbst (4/2022, 10/2022)

Member of the Candidacy Examination committees at SESE/ASU: Christopher Glein (2007), Lev Spivak-Birndorf (2009), Simon Porter (2009), Divya Peddinti (2012), Nikhil Monga (2012), Nuri Park (2022), Ethan Edmans (2023)

Graduate student advisory committee member: Melissa Bunte, 2010; Divya Peddinti, 2011-2017; Travis Gabriel, 2014-2019; Sierra Ferguson, 2018; John Christoph, 2018; Kevin Hubbard, 2019; Emerson Speyerer, 2020 – present; Eamonn Needham, 2021 – present; Ethan Edmans, 2022 – present; Nuri Park, 2022 – present

Senior thesis reader/co-advisor (Alex Mastrean, ASU SESE/Barrett Honors College, 2015)

Member of the Graduate Committee (SESE/ASU) 2017 – 2020, 2022 – present

Undergraduate student adviser, ASU/SESE, 2008

Advising undergraduate researchers/workers

Michelle Krieg, Arizona State University, 2005-2006

Oleg Suleimenov, Lomonosov Moscow State University, 1984-1985

**Publications**

Peer reviewed journal publications and book chapters: 71 (+5 in review)

Other reviewed and non-refereed publications: >185

**Citation indices**

*h-index*: 40 (Google Scholar); *h-index* since 2018: 25

*h10 index*: 74 (Google Scholar)

## Journal publications and book chapters:

77. Pappalardo R. T., Buratti B. J., Korth H., Senske D. A., Blaney D. L., et al. (2023) Science overview of the Europa Clipper Mission. *Space Science Reviews*, to be submitted 10/2023.
76. Stepton M. et al. (2023) Thresholds of temperature and time for Mars Sample Return: Final report of The Mars Sample Return Temperature-time Tiger Team. *Astrobiology*, submitted 8/2023.
75. Blankenship D. D., Moussessian A., Chapin E., Young D. A., Patterson G. W., et al. (2023) Radar for Europa Assessment and Sounding: Ocean to Near-surface (REASON). *Space Science Reviews*, submitted 7/2023.
74. Wilson C., Marcq E., Gillmann C., Widemann T., Korablev O., Müller N., Lefèvre M., Rimmer P. B., Séverine R., **Zolotov M. Yu.** (2023) Possible effects of volcanic eruptions on the modern atmosphere of Venus. *Space Science Reviews*, in revision.
73. Becker T. M., **Zolotov M. Yu.**, Gudipati, M. S., Soderblom J.M., McGrath M. et al. (2023) Exploring the composition of Europa with the upcoming Europa Clipper mission. *Space Science Reviews*, in revision.
72. Vance S. D., Craft, K. L., Shock, E. et al. (2023) Investigating Europa's habitability with Europa Clipper. *Space Science Reviews*, in revision.
71. **Zolotov M. Yu.** (2023) Phosphate discovery hints at chemistry and origin of Enceladus. *Nature* 618, 459–460. <https://doi.org/10.1038/d41586-023-01886-1>
70. Nakamura T., Matsumoto M., Amano K., Enokido Y., Zolensky M. E., Mikouchi T., Genda, H. Tanaka S., **Zolotov M. Y.**, et al. (2022) Formation and evolution of carbonaceous asteroid Ryugu: Direct evidence from returned samples. *Science* 379, eabn8671. <https://doi.org/10.1126/science.abn8671>.
69. Gillmann, C., M. J. Way, G. Avice, D. Breuer, G. J. Golabek, D. Höning, J. Krissansen-Totton, H. Lammer, A-C. Plesa, M. Persson, J. G. O'Rourke, A. Salvador, M. Scherf, **M. Y. Zolotov** (2022) The long-term evolution of the atmosphere of Venus: processes and feedback mechanisms. *Space Science Reviews* 218, 56. <https://doi.org/10.1007/s11214-022-00924-0>
68. Garvin J.B., S. A. Getty, G. N. Arney, N. M. Johnson, E. Kohler, K. O. Schwe, M. Sekerak, A. Bartels, R. S. Saylor, V. E. Elliott, C. S. Goodloe, M. B. Garrison, V. Cottin, N. Izenberg, R. Lorenz, C. A. Malespin, M. Ravine, C. R. Webster, D. H. Atkinson, S. Aslam, S. Atreya, B. J. Bos, W. B. Brinckerhoff, B. Campbell, D. Crisp, J. R. Filiberto, F. Forget, M. Gilmore, N. Gorius, D. Grinspoon, A. E. Hofmann, S. R. Kane, W. Kiefer, S. Lebonnois, P. R. Mahaffy, A. Pavlov, M. Trainer, K. J. Zahnle, and **M. Zolotov** (2022) Revealing the Mysteries of Venus: The DAVINCI Mission. *The Planetary Science Journal* 3, 117. <https://doi.org/10.3847/PSJ/ac63c2>
67. Yoda, M., Sekine, Y., Fukushi, K., Kitajima, T., Gankhurel, B., Davaadorj Davaasuren, D., Gerelmaa, T., Ganbat, S., Shoji, D., **Zolotov, M. Yu.**, and Takahashi, Y. (2021) Field investigations of chemical partitioning and aqueous chemistry of freezing closed-basin lakes in Mongolia as analogs of subsurface brines on icy bodies. *J. Geophys. Res.* 126, e2021JE006972. <https://doi.org/10.1029/2021JE006972>
66. Glaser, D. M., H. E. Hartnett, S. J. Desch, C. T. Unterborn, A. Anbar, S. Buessecker, T. Fisher, S. Glaser, S. R Kane, C. M. Lisse, C. Millsaps, S. Neuer, J. G. O'Rourke, N. Santos, S. I. Walker, **M.**



- Zolotov** (2020) Detectability of life using oxygen on pelagic planets and water worlds. *The Astrophysical Journal* 893, 163. <https://iopscience.iop.org/article/10.3847/1538-4357/ab822d/pdf>
65. Glein C. R., **Zolotov M. Y.** (2020) Hydrogen, hydrocarbons, and habitability across the solar system. *Elements* 16, 47–52.
64. **Zolotov M. Yu.** (2020) The composition and structure of Ceres' interior. *Icarus* 335, 113404. <https://doi.org/10.1016/j.icarus.2019.113404>
63. **Zolotov M.** (2019) Chemical weathering on Venus. In *Oxford Research Encyclopedia of Planetary Science*. Oxford University Press. <http://dx.doi.org/10.1093/acrefore/9780190647926.013.146>.
62. **Zolotov M. Yu.** (2018) Gas-solid interactions on Venus and other solar system bodies. *Reviews in Mineralogy and Geochemistry* 84, 351–392.
61. McKinnon W. B., Waite, J. H., Mousis, O., Lunine, J. I., **Zolotov, M.** (2018) The mysterious origin of Enceladus: A compositional perspective. In: *Enceladus and the Icy Moons of Saturn*, ed. by P. M. Schenk et al., University of Arizona Press, Tucson, pp. 17–38.
60. **Zolotov, M. Yu.** (2017) Aqueous origins of bright salt deposits on Ceres. *Icarus* **296**, 289–304.
59. Jogo, K., Nakamura, T., Ito, M., Wakita, S., **Zolotov, M. Yu.**, and Messenger, S. R. (2017) Mn-Cr ages and formation conditions of fayalite in CV3 carbonaceous chondrites: Constraints on the accretion ages of chondritic asteroids. *Geochim. Cosmochim. Acta* 199, 58–74.
58. **Zolotov, M.** (2016) Planetary Science: Salty Ceres. *Nature Geoscience* 9, 476–477.
57. **Zolotov, M. Yu.**, and Mironenko, M. V. (2016) Chemical models for martian weathering profiles: Insights into formation of layered phyllosilicate and sulfate deposits. *Icarus* 275, 203–220.
56. Evans, L. G., Peplowski, P. N., McCubbin, F. M., McCoy, T. J., Nittler, L. R., **Zolotov, M. Yu.**, Ebel, D. S., Lawrence, D. J., Starr, R. D., Weider, S. Z., and Solomon, S. C. (2015) Chlorine on the surface of Mercury: MESSENGER gamma-ray measurements and implications for the planet's formation and evolution. *Icarus* 257, 417–427.
55. **Zolotov, M. Yu.** (2015) Solid Surface - Atmosphere Interactions. *Treatise on Geophysics, Second edition*, Schubert G. (ed.), vol. 10, *Physics of Terrestrial Planets and Moons*, pp. 411–427.
54. **Zolotov, M. Yu.** (2014) Formation of brucite and cronstedtite-bearing mineral assemblages on Ceres. *Icarus* 228, 13–26.
53. **Zolotov, M. Yu.**, Sprague, A., Hauck, S. II, Nittler, L., Solomon, S., and Weider, S. (2013) The redox state, FeO content, and origin of sulfur-rich magmas on Mercury. *J. Geophysical Research: Planets* 118, 138–146.
52. Lehner, S. W., Petaev, M. I., **Zolotov, M. Yu.**, and Buseck, P.R. (2013) Formation of niningerite by silicate sulfidation in EH3 enstatite chondrites *Geochim. Cosmochim. Acta* 101, 34–56.
51. **Zolotov, M. Yu.** (2012) Aqueous fluid composition in CI chondritic materials: Chemical equilibrium assessments in closed systems. *Icarus* 220, 713–729.
50. Mironenko, M. V., and **Zolotov, M. Yu.** (2012) Equilibrium-kinetic model for water-rock interactions in closed systems. *Geochemistry International* 50, 1-7.

49. **Zolotov, M. Yu.** (2011) On the chemistry of mantle and magmatic volatiles on Mercury. *Icarus* 212, 24–41.
48. Sohl, F., Choukroun, M., Kargel, J., Kimura, J., Pappalardo R., Vance, S., and **Zolotov, M.** (2010) Subsurface Water Oceans on Icy Satellites: Composition and Exchange Processes. *Space Science Reviews* 153, 285–510.
47. **Zolotov, M. Yu.**, and Kargel, J. S. (2009) On the Composition of Europa's Icy Shell, Ocean and Underlying Rocks. In *Europa* (R. Pappalardo, W. B. McKinnon, and K. Khurana, Eds.). University of Arizona Press, Tucson, 431–457.
46. **Zolotov, M. Yu.** (2009) On the composition and differentiation of Ceres. *Icarus* 204, 183–193.
45. Jogo, K., Nakamura, T., Noguchi, T., **Zolotov, M. Yu.** (2009) Fayalite in the Vigarano CV3 Carbonaceous Chondrite: Occurrences, Formation Age and Conditions. *Earth and Planetary Science Letters* 227, 320–328.
44. Niles\*, P. B., **Zolotov, M. Yu.**, and Leshin, L. (2009) Insights into the Formation of Fe- and Mg-rich Aqueous Solutions on Early Mars Provided by the ALH 84001 Carbonates. *Earth and Planetary Science Letters* 226, 122–130.
43. Glein\*, C. R., **Zolotov, M. Yu.**, and Shock, E. L. (2008) Oxidation state of hydrothermal fluids on early Enceladus. *Icarus* 197, 157–163.
42. McAdam\*, A. C., **Zolotov, M. Yu.**, Mironenko, M. V., and Sharp, T. G. (2008) Formation of Silica by Low-Temperature Acid Alteration of Martian Rocks. *Journal of Geophysical Research [Planets]* 113, E08003, doi:10.1029/2007JE003056.
41. McAdam\*, A. C., **Zolotov, M. Yu.**, Leshin, L. A., and Sharp, T. G. (2008) Preferential Low-pH Dissolution of Pyroxene in Plagioclase-Pyroxene Mixtures: Implications for Martian Surface Materials. *Icarus* 196, 90–96.
40. **Zolotov, M. Yu.** (2007) An oceanic composition on early and today's Enceladus. *Geophysical Research Letters* 34, L23203, doi: 1029/2007GLG031234.
39. **Zolotov, M. Yu.**, and Mironenko, M. V. (2007) Timing of acid weathering on Mars: A Kinetic-Thermodynamic Assessment. *Journal of Geophysical Research [Planets]* 112, E07006, doi:10.1029/2006JE002882.
38. **Zolotov, M. Yu.** (2007) Solid Planet - Atmosphere Interactions. *Treatise on Geophysics*. Schubert G. (ed.), Volume 10, pp. 349–370, Oxford: Elsevier Ltd. doi:10.1016/B978-044452748-6/00181-4.
37. **Zolotov, M. Yu.**, Mironenko, M. V., and Shock, E. L. (2006) Thermodynamic Constraints on Fayalite Formation on Parent Bodies of Chondrites. *Meteoritics and Planetary Science* 41(11), 1775–1796.
36. Owen, T. C., Niemann, H., Atreya, S., and **Zolotov, M. Y.** (2006) Between Heaven and Earth: The Exploration of Titan. *Faraday Discussions* 133, 387–391.
35. Seewald, J., **Zolotov, M. Yu.**, and McCollom, T. (2006) Experimental Investigation of Carbon Speciation under Hydrothermal Conditions. *Geochimica et Cosmochimica Acta* 70, 446–460.
34. **Zolotov, M. Yu.**, and Shock, E. L. (2005) Formation of Jarosite-bearing Deposits through Aqueous Oxidation of Pyrite at Meridiani Planum, Mars. *Geophysical Research Letters* 32, No. 21, L21203, doi: 10.1029/2005 GL024253.

33. **Zolotov, M. Y.**, and Shock, E. L. (2004) A Model for Low-Temperature Biogeochemistry of Sulfur, Carbon, and Iron on Europa. *J. Geophysical Research [Planets]* 109, E06003, doi: 10.1029/2003JE002194.
32. Kargel, J. S., Carlson, R. W., Davies, A. G., Fegley, B., Gillespie, A., Greeley, R., Howell, R. R. Jessup, K. L., Kamp, L., Keszthelyi, L. P., Lopes, R. M., MacIntyre, T.J., Marchis, F., McEwen, A. S., Milazzo, M., Perry, J., Radebaugh, J., Schaefer, L., Schmerr, N., Smythe, D. W., Spencer, J. R., Williams, D. A., Zhang, J., and **Zolotov, M. Yu.** (2003) Extreme Volcanism on Io: Latest Insights at the End of Galileo Era. *Eos, Transactions, Amer. Geophysical Union*, **84**, No. 33, 113, 318.
31. **Zolotov, M. Y.**, and Shock, E. L. (2003) Energy for Biologic Sulfate Reduction in a Hydrothermally Formed Ocean on Europa. *Journal of Geophysical Research, [Planets]* **108**, E4, 5022, doi: 10.1029/2002JE001966.
30. Moses, J. I., **Zolotov, M. Yu.**, and Fegley, B., Jr. (2002) Alkali and Chlorine Photochemistry in a Volcanically Driven Atmosphere on Io. *Icarus* **156**, 107–135.
29. Moses, J. I., **Zolotov, M. Yu.**, and Fegley, B., Jr. (2002) Photochemistry of a Volcanically Driven Atmosphere on Io: Sulfur and Oxygen Species from a Pele-type Eruption. *Icarus* **156**, 76–106.
28. **Zolotov, M. Yu.**, and Shock, E. L. (2001) Composition and Stability of Salts on the Surface of Europa and their Oceanic Origin. *Journal of Geophysical Research, [Planets]* **106**, 32815–32828.
27. **Zolotov, M. Yu.**, and Shock, E. L. (2001) Stability of Condensed Hydrocarbons in the Solar Nebula. *Icarus* **150**, 323–337.
26. Fegley, B., Jr., and **Zolotov, M. Yu.** (2000) Chemistry of Sodium, Potassium and Chlorine in Volcanic Gases on Io. *Icarus* **148**, 193–210.
25. Shock, E. L., Amend J. P., and **Zolotov, M. Y.** (2000) The Early Earth vs. the Origin of Life. In *Origin of the Earth and Moon* (R. Canup and K. Righter, Eds.), pp. 527-543, Univ. of Arizona Press, Tucson.
24. **Zolotov, M. Yu.**, and Fegley, B., Jr. (2000) Eruption Conditions of Pele Volcano on Io Inferred from Chemistry of its Volcanic Plume. *Geophysical Research Letters* **27**, 2789–2792.
23. **Zolotov, M. Yu.**, and Shock, E. L. (2000) An Abiotic Origin for Hydrocarbons in the Allan Hills 84001 Martian Meteorite Through Cooling of Magmatic and Impact-Generated Gases. *Meteoritics and Planetary Science* **35**, 629–638.
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## Some mentions in the media

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## Past years

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