

<b>Name</b>	<b>Georgy Cherkashov</b>
<b>Position</b>	Deputy director Professor
<b>Affiliation</b>	Institute for Geology and Mineral Resources of the Ocean (VNIIOkeangeologia), St. Petersburg, Russia St. Petersburg State University, Institute of Earth Sciences (part time)
<b>Higher education</b>	<ul style="list-style-type: none"> <li>• <b>2005</b> Institute of Ore Deposits, Moscow, Russia Dr. habil. in Prospecting&amp;Exploration Geology</li> <li>• <b>1990</b> Shirshov Institute of Oceanology, Moscow, Russia PhD in Marine Geology</li> <li>• <b>1979</b> St. Petersburg State University, St. Petersburg, Russia MSc in Geology</li> </ul>
<b>Academic career</b>	<ul style="list-style-type: none"> <li>• <b>2017 to present</b> Guest professor of Key Laboratory of Submarine Geosciences, State Oceanic Administration, China.</li> <li>• <b>2008-2012</b> Head of Lithology and Marine Geology Department, Faculty of Geology, St Petersburg State University</li> <li>• <b>2005 to present</b> St Petersburg State University, Institute of Earth Sciences (professor)</li> <li>• <b>1979 to present</b> VNIIOkeangeologia (from 1996 – deputy director)</li> </ul>
<b>Teaching Activity</b>	<p>St. Petersburg State University</p> <ul style="list-style-type: none"> <li>• <b>2005 to present</b> Lectures for B.Sc. Geology and Geophysics of the Ocean; Mineral deposits (chapters) Lectures for M.Sc. Marine mineral deposits; Evolution of the Earth (chapters)</li> <li>• <b>2013 to present</b> Supervisor of Master and PhD students</li> <li>• <b>2015 to present</b> Additional educational program Study, exploration and exploitation of marine mineral resources (in English)</li> </ul>
<b>Invited Lectures</b>	<p>International Conference “Mineral resources on the Mid-Atlantic ridge – status and perspectives”. Trondheim Norway, 2014. <b>Invited speaker:</b> Cherkashov G. SMS deposits on the Northern equatorial Mid-Atlantic ridge - status and perspectives.</p> <p>International conference (School) of Marine Geology. Moscow, Russia. 2015. <b>Convener and Keynote speaker:</b> Cherkashov G. Deep sea mineral deposits: current status and future development.</p> <p>Sensitization seminars organized by the International Seabed Authority for the Exploration and exploitation of deep seabed mineral resources: New York, USA. 2014; Pretoria, South Africa. 2015. <b>Invited speaker</b></p>

Name	Georgy Cherkashov
	<p>International conference (School) of marine geology. Moscow, Russia. 2017. <b>Convener and Keynote speaker:</b> Cherkashov G. Exploration and exploitation of deep-sea minerals.</p> <p>Nordic Geological Winter Meeting. Copenhagen (Denmark), 2018. <b>Keynote speaker:</b> Cherkashov G. Exploration of seafloor massive sulphides: current status and perspectives.</p> <p>6th International symposium «Scientific and Legal Aspects of the Regimes of the Continental Shelf and the Area». Wuzhen, China. 2018. <b>Invited speaker.</b> Cherkashov G. Environmental problems relating to the drafting of the regulations on exploitation.</p> <p>International conference «Resources for future generations (RFG-2018)». Vancouver, Canada. 2018. <b>Invited speaker:</b> Cherkashov G. Russian exploration of seafloor massive sulfides: results and prospects.</p> <p>Conference on New Knowledge and Changing Circumstances in the Law of the Sea. Reykjavik, Iceland, 2018. <b>Invited speaker:</b> Cherkashov G. Exploration of the Mid-Atlantic Ridge for mineral resources</p> <p>International conference «Marine minerals». London, UK. 2018. <b>Invited speaker:</b> Cherkashov G. Russian exploration of seafloor massive sulfides: results and prospects.</p> <p>International workshop «MarMine workshop on Exploration strategies for Seafloor Massive Sulfides (SMS)». Oslo, Norway. 2019. <b>Invited speaker:</b> Cherkashov G. Link between active and inactive sites/deposits.</p> <p>International Seminar “Seafloor Mineral Deposits for the Global Sustainable Development”. Madrid. Spain. 2019. <b>Invited speaker:</b> Cherkashov G. Overview of recent International Seabed Authority activity in exploration and exploitation of mineral resources in the Area. Cherkashov G. Massive sulfides: active and inactive sites – resource potential and exploration methods.</p> <p>International conference <b>GeoHab 2019</b> – Marine Geological and Biological Habitat Mapping. St. Petersburg, Russia. 2019. <b>Convener and Keynote speaker:</b> G. Cherkashov, A.Gebruk, O.Smetannikova, A.Bich, A. Firstova. Geological and biological mapping of deep-sea hydrothermal vent fields based on observations using ROV.</p> <p>International expert meeting on the feasibility of applying a rule-based management approach to the Regional Environmental Management Planning of the ISA, with a focus on Polymetallic Sulphide deposits on mid-ocean ridges. Paris, France. 2019. <b>Invited speaker:</b> G.Cherkashov. The potential resources of the mid-ocean ridge in the North Atlantic.</p>

Name	Georgy Cherkashov
<b>International seminars:</b>	<p><b>Cherkashov G.</b>, Kuznetsov V., Stepanova T. Chronology of seafloor massive sulfides: New evidence of hydrothermal systems evolution. Goldschmidt Conference. <i>Prague, 2015.</i></p> <p><b>Cherkashov G.</b> Key SMS parameters for potential mining operations: case of Mid-Atlantic ridge deposits. 45th Underwater Mining Conference. <i>Incheon, Korea, 2016</i></p> <p><b>Cherkashov G.</b>, P. Madureira, H. Brekke, M. Rovere. Comparative analysis of deep-sea minerals. 46th Underwater Mining Conference. <i>Berlin, Germany, 2017</i></p> <p><b>Cherkashov G.</b>, A.Musatov. Hydrothermal activity, sea level and glaciation: evidence of correlation from the Atlantic SMS. 47<sup>th</sup> Underwater Mining Conference. <i>Bergen, Norway. 2018</i></p>
<b>Research and development projects during the past 5 years</b>	<ul style="list-style-type: none"> <li>• <b>since 2019</b> <b>Project partner:</b> ULTRA - Ultramafic-hosted mineral Resource Assessment. <i>Natural Environment Research Council, UK</i></li> <li>• <b>since 2018</b> <b>Project partner:</b> Seabed Mineral Deposits in European Seas: Metallogeny and Geological Potential for Strategic and Critical Raw Materials (MINDeSEA). <i>European Union's Horizon 2020 research and innovation programme.</i></li> <li>• <b>since 2018</b> <b>Project leader:</b> Reconstruction of ore-forming processes based on coupled analysis of massive sulfides and metalliferous sediments: case study of hydrothermal field Pobeda, Mid-Atlantic Ridge. <i>Russian Foundation for Basic Research.</i></li> <li>• <b>2014-2016</b> <b>Project leader:</b> Study of rare elements in seafloor massive sulfides for their resource assessment. <i>St Petersburg State University, Russia.</i></li> </ul>
<b>Activities in scientific organizations and associations during the past 5 years</b>	<ul style="list-style-type: none"> <li>• <b>since 2013</b> Member of Legal and Technical Commission of the International Seabed Authority</li> <li>• <b>since 2013</b> Member of Scientific Advisory Board of the Center for Arctic Gas Hydrate, Environment and Climate</li> <li>• <b>since 2010</b> Member of the Editorial Board of "Oceanology" journal</li> <li>• <b>since 2005</b> International Marine Mineralogical Society (member – since 2005, President 2011-12, Past President 2013-14, Past-Past President 2015-16)</li> <li>• <b>since 2002</b> Chairman of biannual international conference "Minerals of the Ocean". <i>St.Petersburg, Russia</i></li> <li>• <b>since 2002</b> Member of Scientific Advisory Board of the Otto Schmidt Laboratory for Polar and Marine Research</li> <li>• <b>since 2019</b> Member of Editorial Board of "Minerals" journal</li> </ul> <p>Guest editor of special issues: <i>Ore Geology Review</i> (2017), <i>Minerals</i> (2018)</p> <p>Reviewer for journal articles:  <i>Geochemistry, Geophysics, Geosystems (G-Cube); Marine Geology; Ore Geology Review; Chemical Geology; Marine Georesources &amp; Geotechnology; Minerals; Elements; Sedimentary Geology; Journal of Geology and Geoscience</i></p>

Name	Georgy Cherkashov
<b>Significant publications during the past 5 years</b>	<p>Selected publications from overall 60</p> <p>G.A. Cherkashev, V.N. Ivanov, V. Bel'tenev, L.I. Lazareva, , I.I. Rozhdestvenskaya, M.L. Samovarov. Massive sulfide ores of the northern equatorial Mid-Atlantic Ridge, <i>Oceanology</i> 53 (2013) 607–619, <a href="http://dx.doi.org/10.1134/S0001437013050032">http://dx.doi.org/10.1134/S0001437013050032</a>.</p> <p>G. Cherkashov. Mining for Marine Minerals. In “The regulation of continental shelf development: rethinking international standards” 2013. Eds. M. Nordquist, J. Moore, A. Chircop and R. Long. Center for oceans law and policy. Martinus Nijhoff Publishers. V. 17 p. 71-79.</p> <p>A. Portnov, A. Smith, J. Mienert, G. Cherkashov, P. Rekant, P.Semenov, P. Serov Widespread gas release limited by the 20-m isobath at the South Kara Sea Shelf. <i>Geophysical Research Letters</i>, 2013.Vol. 40, 1–6, doi:10.1002/grl.50735</p> <p>Halbach, P., Schneider, S., Jahn, A. and Cherkashov, G. (2013): The Potential of Rare-Earth Elements in Oxidic Deep-Sea Mineral Deposits (Ferromanganese Nodules and Crusts). In: Martens, P.N., (Hrsg.), <i>Mineral Resources and Mine Development</i>, Verlag Glückauf GmbH, Essen, 161-174.</p> <p>P. Rekant, H. A. Bauch, T. Schwenk, A. Portnov, E. Gusev, V. Spiess, G. Cherkashov, H. Kassens. 2015. Evolution of subsea permafrost landscapes in Arctic Siberia since the Late Pleistocene: a synoptic insight from acoustic data of the Laptev Sea. <i>Arktos</i>. DOI: 10.1007/s41063-015-0011-y</p> <p>De Jonge C., Stadnitskaia A., Hopmans E.C., Sinninghe Damsté J.S., Cherkashov G., Fedotov A., Streletskaya I.D., Vasiliev A.A. Drastic changes in the distribution of branched tetraether lipids in suspended matter and sediments from the Yenisei River and Kara Sea (Siberia): implications for the use of brGDGT-based proxies in coastal marine sediments//<i>Geochimica et Cosmochimica Acta</i>. 2015. V. 165. P. 200-225.</p> <p>Kuznetsov V., Tabuns E., Kuksa K., Cherkashov G., Maksimov F., Zherebtsov I., Grigoriev V., Baranova N., Bel'Tenev V., Lazareva L. The oldest seafloor massive sulfide deposits at the Mid-Atlantic Ridge: <sup>230</sup>Th/U chronology and composition//<i>Geochronometria: Journal on methods and applications of absolute chronology</i>. 2015. V. 42. № 1. P. 100-106.</p> <p>Firstova, A.; Stepanova, T.; Cherkashov, G.; Goncharov, A.; Babaeva, S. Composition and Formation of Gabbro-Peridotite Hosted Seafloor Massive Sulfide Deposits from the Ashadze-1 Hydrothermal Field, Mid-Atlantic Ridge. <i>Minerals</i>. 2016, 6, 19</p> <p>Madureira P., Brekke H., Cherkashov G., Rovere M. Exploration of polymetallic nodules in the Area: Reporting practices, data management and transparency. <i>Marine Policy</i>. 2016. 70. 101–107</p> <p>Cherkashov G., V.Kuznetsov, K.Kuksa, E.Tabuns, F.Maksimov, V.Bel'tenev. Sulfide geochronology along the Northern Equatorial Mid Atlantic Ridge. <i>Ore Geology Reviews</i>. 2017. P. 147-154. DOI: 10.1016/j.oregeorev.2016.10.015</p> <p>Konstantinova N., Cherkashov G., Hein J., Mirao J., Dias L., Madureira P., Kuznetsov V., Maksimov F. Composition and characteristics of the ferromanganese crusts from the western Arctic Ocean. <i>Ore Geology Reviews</i>. 2017. V.87. P.88-99 DOI/10.1016/j.oregeorev.2016.09.011</p> <p>Cherkashov G. Seafloor Massive Sulfide deposits: distribution and prospecting. In: <i>Deep-Sea Mining. Resource Potential, Technical and Environmental Considerations</i>. R. Sharma (ed.) Springer International Publishing AG. 2017. P.</p>

Name	Georgy Cherkashov
	<p>143-165. DOI 10.1007/978-3-319-52557-0_4</p> <p>P. Halbach, A. Jahn, G. Cherkashov. Marine Co-rich Ferromanganese Crust Deposits: Description and Formation, Occurrences and Distribution, Estimated World-wide Resources. In: <i>Deep-Sea Mining. Resource Potential, Technical and Environmental Considerations</i>. R. Sharma (ed.) Springer International Publishing AG. 2017. P. 65-143. DOI 10.1007/978-3-319-52557-0_4</p> <p>The World Ocean. Mineral resources and gas hydrates. L. Lobkovsky, G.Cherkashov (eds). Moscow. Scientific World. 2018. 708 p. (in Russian).</p> <p>A.Firstova, T.Stepanova, A.Sukhanova, G.Cherkashov, I. Poroshina. 2019. Gold and Tellurium enrichment of Seafloor Massive Sulfides from Semyenov-2 hydrothermal field, Mid-Atlantic Ridge. <i>Minerals</i>. 2019, 9, 294; doi:10.3390/min9050294</p>