

CONTENTS

Problems of Planetology, Cosmochemistry and Meteoritica

5

Barenbaum A.A. Key events of the Proterozoic eon: explanation using the galactic model. <i>UDC: 551.71/.72</i>	5
Basilevsky A.T. ¹ , Head J.W. ² On the problem of determination of the composition of material comprising Venus surface geologic-morphologic units. <i>UDC 523.42</i>	8
Guseva E.N. and Ivanov M.A. Results of morphometric analysis of the Venus coronae. <i>UDC 523.42</i>	12
Krasilnikov A.S., Ivanov M.A. Determination of the mixing factor of local and foreign material in the langrenus, cavalierius and theophilus crater ejecta. <i>UDC 523.34</i>	15
Marakushev S.A. Geochemical roots and energy of metabolism. <i>UDC 553.21: 576.8: 577.37</i>	19
Maxe L.P. Indicative characteristic of the shapes and morphology of metallic particles of cosmic dust formed in the Earth's atmosphere. <i>UDC 524-1/-8</i>	24
Tselmovich V.A., ¹ Kamyshev A.N. ² Detection of hydrogen in an archaeological artifact. <i>UDC 551.12; 549.2; 552.31; 54-11; 54-18</i>	29

Mineral equilibria at high PT-parameters

33

Gnuchev Y.Y., Bychkov D.A., Koptev-Dvornikov E.V. A single olivine liquidus composimeter for water-containing and anhydrous systems. <i>UDC 553.212, 552.111</i>	33
Kostyuk A.V. ¹ , Vasyukova O.V. ² , Serdyuk A.A. ¹ , Williams-Jones A.E. ² Experimental modeling of the genesis of alkaline silicate melts using the silicate-carbonate system at 800-1000°C, 200 MPa. <i>UDC 550.4.02</i>	36
Kostyuk A.V., Gorbachev N.S., Novikov M.P., Nekrasov A.N. Influence of fluid on metal-sulfide liquation of FeS-Fe-C melt in the basalt-sandstone system at 1250°C, 300 MPa. <i>UDC 550.4.02</i>	38
Kuzyura A.V. ¹ , Spivak A.V. ¹ , Kriulina G.Yu. ² , Zakharchenko E.S. ¹ Ultrabasic diamonds from Zapolyarnaya kimberlite pipe. <i>UDC 550.4.02, 548.2, 548.5, 549.211</i>	41
Levshunova S.P. ¹ , Kartashov A.A. ¹ , Ivanova S.R. ¹ Geothermal conditions of oil generation at great depths under harsh thermobaric conditions. <i>UDC 553.98</i>	45

Thermodynamic properties of minerals and fluids

47

Bublikova T.M. ¹ , Setkova T.V. ¹ Thermo-dynamic modeling of atacamite [Cu ₂ Cl(OH) ₃] solubility in ammonia solutions. <i>UDC 549.472.226:546.171.1</i>	47
---	----

Synthesis of minerals

51

Kovalsky G.A. ¹ , Kovalskaya T.N. ¹ , Ermolaeva V.N. ^{1,2} , Chukanov N.V. ³ , Ermolaev D.N. ¹ , Varlamov D.A. ¹ , Chaychuk K.D. ¹ , Behelev D.B. ¹ , Pekov I.V. ⁴ Influence of mineral-forming composition on stability of zirconsilicates under different alkalinity conditions (according to experimental data).	51
Redkin A.F. ¹ , Nekrasov A.N. ¹ , Neretina A.N. ¹ , Drozhzhina N.A. ¹ Composition, properties and evolution of sodium and niobium oxy-fluorides at high temperature and pressure. <i>UDC 550.4.02+550.84+552.11</i>	54
Setkova T.V. ¹ , Verchenko P.A. ¹ , Spivak A.V. ¹ , Nekrasov A.N. ¹ Crystal growth of Al-tourmaline – alumo-oxi-rossmanite analogue. <i>UDC: 549.612</i>	56
Spivak A.V. ¹ , Setkova T.V. ¹ , Kuzyura A.V. ¹ , Zakharchenko E.S. ¹ , Bendeliani A.A. ² , Gornova E.S. ^{1,2} , Bobrov A.V. ^{1,2} , Vaitieva Y.A. ³ , Aksekov S.M. ³ Synthesis and structural features of mica K ₂ Mg ₅ (Si ₄ O ₁₀) ₂ (OH) ₄ . <i>UDC 550.4.02</i>	59

Hydrothermal equilibria and ore formation

63

Akhmedzhanova G.M., Kotelnikov A.R., Suk N.I. Experimental modeling of the transport of ore components (Fe, Ni, Cu, Zn, Pb) by water and the formation of scattering halos. <i>UDC 550.89:550.84.092</i>	63
Korzhinskaya V.S., Kotova N.P. Study of concentration dependence of Nb ₂ O ₅ , pyrochlore, and columbite solubility in HF and KF solutions. <i>UDC-550.814</i>	65
Kotelnikov A.R., Suk N.I. Experimental study of tungsten transport by water-salt fluids at increased PT-parameters. <i>UDC 550.89:549.761.6</i>	67
Kotelnikov A.R. ¹ , Suk N.I. ¹ , Kotelnikova Z.A. ² , Damdinov B.B. ³ , Damdinova L.B. ⁴ , Akhmedzhanova G.M. ¹ Hydrothermal natural fluids, transport and accumulation of ore and rare elements. <i>UDC 550.89:550.46</i>	70
Kotova N.P. Experimental studies of Nb ₂ O ₅ solubility in HCl solutions at 550°C and 50 TO 500 MPa.....	73

Physical chemical properties of geomaterials 76

Tselmovich V.A., ¹ Golovanova L.V. ² , Doronicheva E.V. ² , Doronichev V.B. ² , Kurazhkovskii A.Yu. ¹ Features of magnetic minerals from sedimentary rocks of Kuvinskaya cave (North-West Caucasus). <i>UDC 550.3+902.1+902/904+551.8+551.21</i>	76
Tselmovich V.A., Aphinogenova N.A. Use of heterophase oxidized titanomagnetites in the diagnosis of paleomagnetic data. <i>UDC 550.383.3:549.641.23</i>	79
Verchenko P.A. ¹ , Tereshkina E.P. ² , Setkova T.V. ¹ , Spivak A.V. ¹ , Zakharchenko E.S. ¹ Raman spectroscopy of synthetic Cu-bearing tourmaline. <i>UDC: 549.612;543.424.2</i>	83

Experimental geoecology 87

Karaseva O.N. ¹ , Khanin D.A. ^{1,2} , Lakshtanov L.Z. ¹ Cadmium adsorption on talc (kinetics and equilibrium). <i>UDC 541.18 + 628.316.12</i>	87
Karaseva O.N. ¹ , Khanin D.A. ^{1,2} , Lakshtanov L.Z. ¹ Changes in the specific surface area and sorption properties of ferrihydrite during its recrystallization. <i>UDC 541.183 + 628.316</i>	90
Zharikov A.V., Malkovsky V.I. Assessment of actinide colloid transfer in the «Eniseysky» site. <i>UDC 621.039.7</i>	92

Engineering of experiment 97

Chertkova N.V., Spivak A.V., Zakharchenko E.S., Safonov O.G. Applicability of ammonia borane as a hydrogen source in diamond anvil cell experiments. <i>UDC 552.11</i>	97
Krivolutskaya N.A. Melt inclusions in minerals from intrusive rocks: to the methodology of the study. <i>GRNTI 38.33.17</i> ..	99

Interaction in the systems of fluid–melt–crystal 104

Chevychelov V.Y. ¹ , Viryus A.A. ² Partition of fluorine and chlorine between biotite, apatite and melt of water-saturated rare-metal biotite granite. <i>UDC 550.42</i>	104
Chevychelov V.Y. ¹ , Viryus A.A. ² Influence of temperature on the conditions of formation and composition of biotite crystallizing from granite melt. <i>UDC 550.42</i>	108
Gorbachev P.N., Nekrasov A.N., Gorbachev N.S. Experimental modeling of contamination of sulfate-bearing marls in basalts of the mokulaevo formation (Norilsk). <i>UDC 550.4</i>	112
Kazakova A.A. ¹ , Shchekina T.I. ² Cryolite as an indicator of rare metal mineralization from the standpoint of experimental data in a granite system with fluorine. <i>UDC 552.11</i>	115
Khodorevskaya L.I., Safonov O.G., Spivak A.V., Tushkanova S.A., Nekrasov A.N. Experimental study on melting of graphite-bearing garnet – two mica schist at 500 MPa and 750-800 °C: toward internal sources of CO ₂ in the Earth's crust. <i>UDC 552.13</i>	118
Khodorevskaya L.I., Safonov O.G., Spivak A.V., Tushkanova S.A., Nekrasov A.N. Experimental study of partial melting graphite-containing schist at 1.0-1.5 GPa and 900°C. <i>UDC 552.13</i>	122

CONTENTS

Korzhinskaya V.S., Suk N.I., Kotelnikov A.R., Novikov M.P., Van K.V. Solubility of hafnium in aluminosilicate melt at temperatures of 800°C, 1000°C and pressure of 400 MPa. <i>UDC-550.89:546.83</i>	126
Kotelnikov A.R. ¹ , Suk N.I. ¹ , Kotelnikova Z.A. ² , Krinichkina O.K. ³ , Drozhzhina N.A. ¹ , Van K.V. ¹ Study of albitization processes: experimental data. <i>UDC 550.89:550.46</i>	129
Persikov E.S. ^{1*} , Bukhtiyarov P.G. ^{1**} , Aranovich L.Y. ^{1,2***} , Sultanov D.M. ^{1****} , Shaposhnikova O.Y. ^{1*****} , Nekrasov A.N. ^{1*****} Features of crystallization of basalt melt at moderate methane-hydrogen fluid pressures (preliminary results). <i>UDC 123.456</i>	132
Suk N.I., Kotelnikov A.R., Nekrasov A.N., Neretina A.N. Experimental study of the solubility of molybdenite in aluminosilicate melts. <i>UDC 550.89:549.325.2</i>	136

AUTHORS INDEX

139