

# Summaries

UDC 551.7

**Nozhkin A.D.**  
**PRECAMBRIAN OF THE SOUTHWEST MARGIN  
 OF SIBERIAN CRATON**

On the basis of complex geological, petrologic-geochemical, isotope-geochronological and metallogenic researches carried out by the author with his colleagues mainly in regions of the west and southwest margin of Siberian craton and the framing accretive belt, heterogeneous Archean, Early- and Late-Proterozoic structural- and compositional complexes are allocated fixing main crust-forming events in Precambrian. Petrogeochemical typification is carried out, the main boundaries and geodynamic conditions of formation are revealed, metallogenic specificity is noted. The model of formation, growth and evolution of Precambrian crust of the southwest part of Siberian craton is presented; seven stages of its formation are examined.

UDC 553.044.411:[550.8:528]

**Chernykh A.I.**  
**GEOLOGIC-MINEROGENIC MAPPING OF GOLD WITH SCALE  
 1:500 000 OF THE NORTHWEST PART OF ALTAI-SAYAN-  
 SKAYA FOLDED AREA (PROBLEMS, TECHNIQUE, RESULTS)**

Problems, main results and the technique of geologic-minerogenic mapping with scale 1:500 000 (GMK-500) of gold in the northwest part of Altai-Sayanskaya folded area (ASFA) are examined. As a result of the carried out works the GIS-package is created which includes a set of digital thematic coatings reflected on the corresponding maps, and an electronic database of golden-ore objects. The final forecast-minerogenic map of lode gold of the northwest part of ASFA is approved by NRS Rosnedra. Ore-formational typification of golden and gold-bearing mineralization is developed; forecast-prospecting models of objects known and potentially perspective for the region of golden-ore and gold-bearing formations are made. On the basis of the system analysis of geological, minerogenic, geophysical, geochemical and remote information, the main laws of allocation are revealed, the role of various minerogenic factors is defined; indirect and direct prospecting attributes of gold mineralization of various ore formations are established. On the bases of a uniform technique, metallogenic division into districts of gold of the territory GMK-500 is carried out. Reassessment of forecast resources of gold of the category  $P_3$  is carried out for the northwest part of ASFA. Resources of gold of the category  $P_3$  in the quantity of 632 tons are appraised based on the most perspective ore clusters. High prospects of the region on nonconventional mineralization are proven - gold-sulphidic in black-shale and carbonate strata, gold-silver and gold-quartzitic formations. Perspective areas are allocated for the territory GMK-500; recommendations on further forecast-minerogenic, forecast-prospecting and prospecting-evaluation works are developed.

UDC 553.411.071:553.078.2

**Kucherenko I.V., Gavrilov R.Yu.,  
 Martynenko V.G., Verkhozin A.V.**  
**STRUCTURAL-DYNAMIC MODEL  
 OF GOLDEN-ORE DEPOSITS FORMED IN NON-SHALE  
 AND BLACK-SHALE SUBSTRATUM. P. 2. CHYORTOVO  
 KORYTO DEPOSIT (PATOMSKOE UPLANDS)**

In the declared in the first part of the clause comparative research for reasons of essentially different industrial parameters of gold mineralization in the deposits formed in various substratum, including crystal, on the one hand, and in the strata of carbonaceous shales, on the another, materials participate revealing the structure of Chyortovo Koryto deposit embedded in Early-Proterozoic black-shale. The sequence of formation of folded and ruptural structural elements of

the deposit on preore, ore and postore stages is shown. Rupture-crack elements are differentiated by morphology, scales, kinematics, and the role in ore-formation. The structural-dynamic model of the deposit is developed where leading positions in allocation of gold-bearing mineralization are taken by numerous large and fine ruptures formed in the beginning of the ore stage in the hanging layer of ore-controlling and solution-conductive split-uplift as a result of repeating impulses of tangential compression and accompanying stretching. Features of similarity and difference of this model with structural-dynamic model of quartz-vein deposit formed in basalt strata of Berikulskoye deposit described in the first part the clause are cited and discussed. Among the factors defining the mentioned distinctions of mineralization parameters in gold deposits of the two discussed homogeneous by geologic-genetic parameters sets, the leading role is played by composition and structure of the ore-bearing substratum.

UDC 551.2

**Salikhov V.S.**  
**SYNERGIC MODEL OF COPPER-BEARING  
 ORE-MAGMATIC SYSTEM**

An attempt to create a model of copper-bearing ore-magmatic system is carried out from positions of nonlinear thermodynamics. The model allows estimating and reconsidering prospects of famous copper-ore regions from positions of search for missing members of self-developing riftogenes.

UDC 553.469 (571.51)

**Ozerskiy A.Yu., Ekhanin A.G.**  
**PROSPECTS OF STUDYING AND DEVELOPMENT  
 OF GERMANIUM RESOURCES IN LOWER-CREATA  
 CEOUS LIGNITES OF KASSKAYA AREA**

New data on germanium lignites of the southeast margin of the Western Siberian Plate are examined. A new perspective site with forecast resources of germanium amounting to 11 thousand tons is revealed by drilling works in the basin of the downstream of the river Kas in chalk deposits. Contents of germanium in the ore amount to 100...280 g/t of dry lignite or 560...3600 g/t of ashes. The necessity of carrying out further purposeful prospecting works for germanium is shown.

UDC 669.094

**Arkhipov V.S., Maslov S.G., Dolgov A.V., Karevskaya A.O.**  
**PROPERTIES OF PEAT-ORE MATERIALS ON THE BASIS  
 OF BAKCHAR ORE AND PEAT OF VASYUGAN DEPOSIT**

The influence of compound, humidity, intensity of hashing on properties of peat-ore materials prepared in laboratory conditions from Bakchar iron ore and peats of Vasyugan deposit is studied. It is shown, that durability of air-dry samples is comparable with durability of iron-rich pellets. The stage of sintering at temperatures above 1000 °C is necessary for production of strong iron-rich materials.

UDC 551.24 (571.56)

**Trophimenko S.V., Grib N.N., Nikitin V.M.**  
**VARIATIONS OF AN ELECTROMAGNETIC FIELD AS  
 A REFLECTION OF SEISMOTECTONIC PROCESSES  
 OF THE OLEKMO-STANOVAYA ZONE**

The main results of observation over a natural electromagnetic field of the Earth in the region of Southern Yakutia are presented. The analysis of variations in connection with earthquakes of the Olekmo-Stanovaya seismic zone is carried out.

UDC 550.83:551.24 (571.6)

**Petrishevskiy A.M.**  
**CONDITION AND PROSPECTS OF GEOLOGICAL  
INTERPRETATION OF GRAVITATIONAL ANOMALIES  
IN THE FAR EAST OF RUSSIA**

The ideology, technique and geological results of interpretation of gravitational anomalies in the Far East of Russia are analyzed. The content and problems of approximated, frequency and correlation methods of interpretation are considered. Their combination with traditional trial and error methods of density inhomogeneities narrows the area of ambiguity of gravitational models. Examples of geological compatibility of approximation constructions obtained in different classes of modeling bodies are cited.

UDC (550.83+550.84 :553.98 (571)

**Isaev V.I., Korzhov Yu.V., Lobova G.A., Romanova T.I.**  
**GEOCHEMICAL FORECASTING OF HYDROCARBON  
DEPOSITS (ON THE EXAMPLE OF THE CENTRAL PART  
OF THE WEST-SIBERIAN PLATE)**

The results of geochemical researches of samples from shot-holes of seismic prospecting on East-Panlorskiy search area and in Kogalymskiy area of oil extracting are cited. Direct forecasting of deposits by anomalies of concentration of migrating into near-surface deposits of aromatic hydrocarbons is carried out. Ranging by the degree of perspectivity of six local uplifts is carried out on East-Panlorskiy area; location of the primary well is defined. A section of a possible trap (deposit) in Upper-Jurassic deposits is offered at the Central-Kustovoy site of Kogalymskiy area.

UDC 681.518:622.276

**Zhidkova N.A., Zakharova A.A.**  
**SOFTWARE OF THE PROGRAM MODULE PWRI-FRAC  
FOR FORECASTING OF CRACK PARAMETERS IN INJECTION  
AND ABSORPTION WELLS**

Problems of modeling of the crack-formation process are examined at fracture pressure in injection and absorption wells. With application of the software product PWRI-FRAC which is a part of the integrated system Petroleum Expert, the modeling of crack development for injection and absorption wells is carried out at injection pressure higher than the fracture pressure, forecast parameters of the crack are given, and possible consequences are estimated.

UDC 553.982:504.54(571.16)

**Savichev O.G.**  
**CHEMICAL COMPOSITION OF BOG WATERS OF TOMSK  
REGION (WESTERN SIBERIA) AND INTERACTION  
WITH MINERAL AND ORGANIC-MINERAL COMPOUNDS**

Chemical composition of bog waters of Tomsk region (Western Siberia) is analysed. The data on average concentration (for period from 1960 to 2007 years) of macrocomponents, some metals, biogenic and organic substances, indexes of saturation in bog waters for different antropogeneous factors are described. The level of substances contents in bog waters is determined by waterchange intensity, type of a water feed of a bog and physical and chemical properties of peats. The antropogeneous influence to chemical composition of bog waters now has a local character.

UDC 53:37.012

**Chubik P.S.**  
**ON MINING-AND-GEOLOGICAL EDUCATION AT TOMSK POLYTECHNIC UNIVERSITY ON THE BOUNDARY OF MILLENNIA**

The history of development of mining-and-geological education at Tomsk Polytechnic University is examined.

UDC 553.411

**Korobeynikov A.F.**  
**STRENGTHENING OF MINERAL-RAW-MATERIAL BASE  
OF THE PRECIOUS METALS INDUSTRY OF SIBERIA**

The results of geological researches of gold-bearing regions of Siberia carried out by scientists of Tomsk universities are discussed. The key stages of geological development of bowels of Siberia with participation of the experts of Tomsk geological school are allocated. Development of regional-geological and local mineral-geochemical methods of researches is examined.

UDC 552.161.550.42

**Domarenko V.A., Vorobyov E.A.,  
Molchanov V.I., Mazurov A.K.**  
**BASIC RESULTS AND PROSPECTS OF DEVELOPMENT  
OF PROSPECTING WORKS ON RADIOACTIVE  
RAW-MATERIAL IN CENTRAL-SIBERIAN REGION**

Brief data on the basic geologic-industrial types of uranium deposits of Central-Siberian region, conditions of their deposition, and parameters of ore bodies are cited. Prospects of revealing new deposits in nonconventional geologic-structural conditions are evaluated.

UDC 553.94(571.5):553.078

**Arbuzov S.I., Rikhvanov L.P.**  
**GEOCHEMICAL RESEARCHES OF COALS IN SIBERIA**

The historic-scientific analysis of geochemical researches of coals in Siberia is carried out. The main achievements in the field of studying geochemistry of inorganic components in coals of Siberia are shown. The tendency of increase of interest to elements-impurities in coals from the point of view of углепродукции quality, as well as a potential raw-material source of many valuable metals is noted. For the effective development of the rare-metal potential of coals of the region, performance of complex researches of coal deposits and basins on the basis of the state program, for realization of which the experts of the most different branches of knowledge should be involved.

UDC 551.12:93/94

**Epifanov V.A.**  
**CONTRIBUTION OF TOMSK GEOLOGICAL SCHOOL  
TO THE IDEA OF PULSE DEVELOPMENT OF THE EARTH**

A brief biographic review of founders of Tomsk geological school and their pupils who have brought an essential contribution to development of the idea on pulse character of Earth development is carried out. It is noted, that by now it is possible to reveal duration and chronological place of global pulsations and to establish their dependence on movement of the planet in the galactic orbit. Connection of global modulations of the climate, change in the level of the World Ocean, periodicity of introduction of kimberlites and accumulation of oil with geogalactic pulsations of two large ranks is shown in the tabulated form.