

The Significant Problem of Sustainable Development

- Research of Nontraditional Mineral Resources

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Nontraditional mineral resources refer to potential resources which are unconsidered and unutilized under actual technical, economic and environmental conditions, or which are too difficult to be found because of geological complexity. Nontraditional resources usually need nontraditional research and mining methods and nontraditional mineral economics. Nontraditional resources refer to new types, new depths, new scopes, new technics and new utilization. Nontraditional research includes a series of theories of geoanomalies, nonlinear geology, and the appropriate methods. Nontraditional mining refers to type of exploitation that keeps environment without pollution, and using new technology, deep processing and high additional value mining. Nontraditional mineral economics includes comparative economics of total resources, economics of security and ecology in the exploitation process. There are some significant problems concerning discovery and exploration of nontraditional mineral resources: 1) Mechanism of geological anomaly formation, evolution and controlled mineralization during earth evolution and interactive processes of earthspheres. 2) Scientific forecasting of nontraditional and super-large mineral deposits as chaos targets. 3) Earth material flow theory and the model of its further utilization. 4) Earth material separation and utilization under extraordinary condition. 5) Associated evaluation theory of mineral resources exploration and environment based on polysources, and uncertainty information and data.