LABORATORY COMMUNICATION

State Key Laboratory of Mineral Deposits Research

The State Key Laboratory of Mineral Deposits Research, located at Nanjing University and based on the key discipline of Economic Geology-Geochemistry of the State Education Commission and on the Institute of Granites, Volcanics and Metallogeny of Nanjing University, was established in 1995 with the approval of the State Planning Commission, State Science and Technology Commission and State Education Commission. The Laboratory successfully went through the national appraise and formally opened to domestic and overseas researchers. At present, Prof. Ma Dongsheng is the director of the Laboratory. Xu Keqin, an academician of CAS, is the honorable chairman of the academic committee. Hu Shouxi is the Chairman of the committee which consists of 18 well-known scientists.

1 Research orientations

The main research orientations of the Laboratory at present and in the near future are: (i) Occurrence pattern, genesis and prospecting areas of mineral deposits that are urgently needed or superior in reserves in China. (ii) Basic geology theory about composition and structure of lithosphere, especially of granitoids, volcanics and ore-controlling strata and their relationship with mineralization. (iii) Source, nature, movement and evolution of ore-forming fluid, and mechanism of water-rock interaction and its relationship with mineralization of metal elements. (iv) Research on global change and environment based on geochemical methodology.

2 Research projects and achievements

Since 1995, the Laboratory has undertaken more than 100 research programs including over 50 programs and 2 key projects funded by the National Natural Science Foundation of China, 2 projects funded by Excellent Middle Aged and Young Scientist Foundation and State Outstanding Young Scientist Foundation, 2 programs of potential Climbing Projects of the Ninth Five Year Plan, etc.

Many achievements and ore-prospecting benefits have been obtained from researches on gold deposits, granitic and volcanic rocks and their mineralization in East China, and the studies on petrology and geochemistry and their relationship with mineralization of orogenic zones in South China. During the last three years, more than 700 research papers, 15 monographs and 3 textbooks have been published. 24 prizes at the state, provincial and ministerial levels have been obtained. Moreover, the Laboratory has been exploiting new research fields such as water rock interaction, low-temperature geochemical process, petroleum and natural gas, global change, mineral material exploitation and disposal of solid wastes.

3 Training of talents

The Laboratory has a post-doctoral research station and provides 5 disciplines for Ph.D. students. 86 MS, 31 Ph D students and 5 postdoctoral fellows have been trained in the Laboratory. Some young and senior scientists have been awarded or entitled as "Outstanding Doctorate Holder Trained in

China" by the State Education Commission and Academic Degree Committee under the State Council, "Gold Hammer Prize" and "Silver Hammer Prize" by the Geology Society, "Hou Defong Prize" by the Mineralogy-Petrology-Geochemistry Society. They have been granted "Trans-Century Outstanding Talent Fund" by the National Natural Science Foundation and "Trans-Century Outstanding Talent Program Funds" by the State Education Commission.

4 Academic exchange

The Laboratory keeps close academic relationship with scientists from China and overseas and actively carries out international academic exchange. Every year the Laboratory sends 2—3 young scholars to other countries for study or doing research. A total 30 people have been sent to developed countries to conduct academic exchange, research cooperation and technical training. And also, over 40 domestic and overseas scientists have been invited to visit the Laboratory for lecturing or conducting researches. The Laboratory has had 6 international cooperative research projects, such as "Comparison of mineralization and structure of igneous rocks between China and Australia". Moreover, the Laboratory has organized four national scientific conferences.

One of the main purposes of the Laboratory is to attract distinguished scientists to conduct researches in the Laboratory. By now, the Academic Committee has approved 74 opening research programs with funds of 370 000 Yuan RMB and attracted many well-known specialists and outstanding young scientists in related fields to do research in the Laboratory and they have achieved great accomplishment.

5 Main facilities

The Laboratory is well equipped with a SUPER PROBE JXA-8800 series electron probe microanalyzer (JEOL), a gas mass spectrometer (MAT252/GC), a solid mass spectrometer (VG354), an ICP-AES (YJ38S), a system for measurement of fluid inclusions in minerals (this system comprises THMSE 600 heating/cooling stage (LINKAM) and Leitz 1350 heating stage (LEITZ) with Leica Leitz polarizing microscope Laboratoryorlux 12 Pols and Orthoplan Pol), a high pressure and high temperature experimental system for simulating ore- and rock-forming process (this system includes inside-cooling rapid quenching high pressure vessels, cooling-sealed high pressure vessels, rocking volumetric hydrothermal vessels (Barnes reactors) and a flowing diffusion reactor), a computer workstation, and a high resolution ICP-MS (Finnigan MAT, ELEMENT II).

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