Notice on Application for 2023 Open-end Research Fund of State Key Laboratory of Intelligent Construction and Healthy Operation and Maintenance of Deep Underground Engineering

The State Key Laboratory of Intelligent Construction and Healthy Operation and Maintenance of Deep Underground Engineering (hereinafter referred to as the Laboratory) is committed to continuously promoting the breakthroughs in fundamental theories and key technological in geology and geotechnical mechanics of deep underground engineering, intelligent construction of deep underground engineering, disaster prevention and control and healthy operation and maintenance. At present, to meet the national major needs and to give full play to international cooperation and high-level talent training of the Laboratory, the Laboratory has set up open-end research fund to attract both domestic and foreign talents to work in the Laboratory or conduct high-level fundamental research, and make high-level innovative achievement by fully utilizing the resources of the Laboratory.

I. Major research directions of the Laboratory and the research fields supported by the fund

1. Geotechnical mechanics and disaster mechanism of deep underground engineering
2. Intelligent construction and efficient improvement of ultra deep mines
3. Intelligent construction of deep-buried tunnels and giant caverns
4. Intelligent prevention and control and healthy operation and maintenance disasters of deep underground engineering.
5. Spatial fine detection and collaborative development of deep underground engineering
6. Fluidized mining of solid resources of deep underground engineering
7. Deep earth science and deep underground in-situ rock mechanics
8. Deep underground in-situ condition preserved coring and testing
9. Time-varying characteristics and engineering response to deep underground rock masses
10. Multi-dimensional information perception and intelligent construction of deep earth engineering
11. Low carbon technology and CCUS in deep earth energy engineering
12. Dynamic (static) mechanics of disturbed rocks in deep underground engineering
13. Healthy operation and maintenance and disaster prevention and control of deep earth engineering
14. Deep geothermal and clean energy development
15. Deep space and deep sea in-situ condition-holding coring

II. Key supported research fields of this year

Geotechnical Mechanics and disaster mechanism of deep underground engineering

Intelligent construction and efficient improvement of ultra deep mines

Intelligent construction of deep-buried tunnels and giant caverns

Intelligent prevention and control and healthy operation and maintenance disasters of deep underground engineering.

III. Research project categories to be set of this year

1. Key Projects

The key projects are set with the aim of "benchmarking planning, extensive collection, independent evaluation, and strengthened assessment". Each project lasts for 3 years with a fund of approximately 200,000 *yuan*. The applicants of the projects will not be limited to staff working in universities and scientific research institutions. The project acceptance must be shown in evident achievement indicators. The co-researchers of the Laboratory and project applicants will be assessed.

2. General Projects

The implementation period of the general project is 2 years according to the main research direction of the laboratory. The amount of funding is generally not more than 60,000 *yuan*. The project applicants will be assessed.

IV. Application for the open-end research fund

1. The Laboratory cordially invites scholars from relevant fields at home and abroad to apply for projects focusing on the major research directions of the Laboratory and the research fields supported by the Fund and then come to the Laboratory to carry out research. The Laboratory will select the open-end fund projects through a process of free application, preliminary laboratory review, and final academic committee review in accordance with the principle of "fairness, impartiality, merit".

2. The Laboratory prioritizes the joint application of scholars at home and abroad with researchers at the Laboratory, continuous funding projects for in-depth joint research with excellent completion, the projects that carried out at the Laboratory, and the projects that use the public testing platforms of the Laboratory. If there is no cooperation with researchers in the Laboratory

before the application, the applicant should declare that the project will be jointly carried out with the researchers in the Laboratory once it is approved and granted.

3. The applicant should first read the application guide and *Management Method for Open-end Research Fund of State Key Laboratory of Intelligent Construction and Healthy Operation and Maintenance of Deep Underground Engineering*. Next, fill in the *Application Form of the Open-end Research Fund* and *Application Information Form of the Open-end Research Fund* and email them to the following email address (see the contact details) with the subject of "Application of 2023 Open-end Research Fund". **The email deadline is December 15, 2023. Once the application form is approved, sign and stamp it by the work unit (first division) of the applicant, the applicant should send it to the Laboratory in two copies (both original copy, printed on both sides in an A4 paper and stapled to the left) before December 25, 2023.**

4. The Laboratory is located in Xuzhou, Shenzhen and Chengdu. Please send your application form to only ONE place. The same research proposals that submitted to multiple departments or through multiple channels are disqualified.

5. In principle, staff working in China University of Mining and Technology, Shenzhen University and Sichuan University, as well as those who works as full-time researchers from laboratories of other universities, are not allowed to apply for the open-end research fund.

6. Contact Details

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