**Application Guide for 2020 Key Projects of Guangdong-Dongguan Collaborative Fund**

**I. Application Requirements**

(I) The leading host application institution must a provincial fund host institution within Guangdong Province, and the key projects of Guangdong-dongguan Collaborative Fund must be led by the host institutions in dongguan or the host institutions in dongguan must participate in the cooperative application.

(II) The applicant should be a current employed and in-service staff of the host institution or staff employed by two organizations (at least one of the following certificates must be uploaded, including the certificate of employment at the supporting institution, employment contract, social security proof in recent three months and payment certificate of individual income tax).

(III) The applicant is the principle investigator in charge of the project and must have the doctorate or the associate senior job title and above. In addition, the applicant should have presided over national or provincial science and technology programs (including National Natural Science Foundation of China and Provincial Fund Projects) or city-level key research projects (the diploma or certificate of job title, project contract, assignment brief or conclusion reply letter must be uploaded on the system).

(IV)The applicant should meet the application requirements in the text of the Notification.

**II. Award Size and Implementation Period**

The project award size is **RMB 1,000,000/project**, and the implementation period is generally **3 years**. The project fund is appropriated at a time.

**III. Requirements for expected results**

(1) The ability of project team members to undertake national-level science and technology plans and funds in their disciplinary fields has been greatly enhanced to promote regional cooperation in science and technology in the Guangdong-Hong Kong-Macao Greater Bay Area.

(2) Achieve breakthroughs in the research of key scientific problems to support the development of key core technologies.

(2) At least two high-quality papers or patent results published in national science and technology journals with international impact, international top-level or important science and technology journals recognized by the industry, as well as papers presented at top-level academic conferences at home and abroad (referred to as "three types of high-quality papers") (to be acknowledged as supported by this provincial-municipal collaborative fund projects), or apply for at least two relevant invention patents. No less than one scientific and technical report shall be submitted.

(3) Encourage the formation of diversified research results in monograph publication, standards and norms, personnel training and application of results.

**IV. Supported Fields and Directions**

**Table 1: Application Guide and Direction List of Key Projects of Guangdong-Donnguan Collaborative Fund**

| **Application code** | **Guide and direction** | **Remarks** |
| --- | --- | --- |
| **(I) Field of mathematical and physical science** | | |
| DG0101 | 1. Neutron Technology and Methodology (discipline code: A0504) |  |
| SZ0102 | 2. Theory and Material Study of Topological State of Matter and Phase Transformation (discipline code: A04) |  |
| **(II) Field of chemical science** | | |
| DG0201 | 1. Basic research on the preparation of hollow fiber membranes based on bionic technology and its application (discipline code: B06) |  |
| **(III) Field of life science** | | |
| DG0301 | 1. Mechanisms related to arterial vascular bioadhesion (discipline code: C10) |  |
| **(IV) Field of material science** | | |
| DG0401 | 1.The development of lightweight and high-performance amorphous composites and their application exploration (discipline code: E01) |  |
| DG0402 | 2.Key Technology Research on Advanced Manufacturing of Amorphous Alloys (discipline Code: E01) |  |
| DG0403 | 3. Research on new technology for passive radiation cooling of graphene/hexagonal boron nitride infrared coatings (discipline code: E02) |  |
| DG0404 | 4. Applied Research on Neutron Diffraction and Transmission Techniques in the Solidification Process of Metallic Materials (discipline Code: E01) |  |
| **(V) Field of engineering sciences** | | |
| DG0501 | 1. Precision 3D measurement system based on high repetition frequency dual femtosecond laser frequency comb (discipline code: E05) |  |
| DG0502 | 2. Big Data and Artificial Intelligence Driven Key Technology of Additive Manufacturing Intelligent System (Academic) (discipline Code: E05) |  |
| DG0503 | 3.Research on the automatic aseptic production process of gas-liquid exchange hollow fiber membrane preparation and modules based on bionic technology (discipline code: E05) |  |
| **(VI)Field of engineering sciences** | | |
| DG0601 | 1.Research on robot task learning methods for human-machine collaboration (discipline code: F03) |  |
| DG0602 | 2. GaN-based Micro-LED Preparation Key Technology Research and Development (discipline Code: F05) |  |
| DG0603 | 3. Research on traffic control technology for intelligent cities based on information physical systems (discipline code: F03) |  |
| DG0604 | 4. Research on the theory and process of laser high-quality stripping of semiconductor ingots (discipline code: F04) |  |