

## Guangdong-Hong Kong Technology Cooperation Funding Scheme 2015

### Textiles and Clothing (Community Advantages)

#### Topic/Theme

The objective is to develop enabling technology, innovative materials, and wearable electronics for improving community care and quality of life.

#### Background

2. Large cities in the Pearl River Delta (PRD), including Hong Kong are facing the problems of an ageing population, leading to the increasing demand of elderly care services and products. People are also more health conscious and concerning about quality of life. Amid the rapid development of different electronic devices and novel materials in recent years, there are huge potential to enhance the functionalities of a wide variety of textiles and apparel products for the benefits of the community.

3. Different miniature and flexible electronic devices developed recently have applications for textile and apparel products. They can benefit a wide range of community, in respect of industrial safety, health monitoring, comfort enhancement, protection from injury, elimination of toxic substance and lifestyle improvements, etc.

4. In addition to wearable electronics, efforts can also be devoted to sophisticated textile and apparel designs, making protective garments lighter and more flexible while enhancing protection to the human body. Investigations in biomedical, physiological and biomechanical functional needs, in terms of dynamic moisture management, weight reduction and injury prevention, have become the foundation to the developments of high performance sportswear, intimate apparels, industrial uniform, workwear, health care textile products etc.

5. To this end, applied research in wearable electronics, sophisticated and functional textile and apparel designs will enhance the performance and functionalities of a wide variety of textile and apparel products, supporting a wide range of community needs. Given the collaboration between Guangdong Province and Hong Kong, in particular, the swift adaptation of such research and development will give rise to the revival of high value textiles and clothing industry in the Great Pearl River Delta Region (PRD).

#### Scope

6. The research theme of community advantages is to facilitate elderly care, health monitoring, sports performance, industrial safety, comfort enhancement, protection from injury and toxic substance, lifestyle enjoyment by integration of miniature/flexible electronics, biomedical and novel textile designs into different aspects of textile and apparel applications.

7. Prototypes should be developed to reasonably demonstrate the merits and prove its viability and safety of the technologies for the benefits of communities in Hong Kong and the PRD.

8. In order to spearhead and support research and development for the sake of community advantages, HKRITA is seeking proposals on the following:

**(a) Wearable Electronics**

Life quality and comfort can be enhanced by smart intelligent technologies. These apparel based electronics have functions like the wearable computing arena, in particular, thermal control, pressure assessment and measurement of health conditions. In order to develop more effective wearable electronics, capacitive fabrics for energy storage and conductive materials, by printing or weaving, are essential elements to transform traditional textile and apparel products into lightweight, wireless and flexible wearable computing devices. Sensors can be utilized to measure strain, pressure, geo-position and temperature etc. They can either be attached to or integrated into a textile substrate. In this connection, auxiliary devices such as miniature cables, connectors, switches, battery, etc. should also be considered.

**(b) Protective and Functional Garments & Footwear**

In light of the aging population and increasing importance of industrial safety and sports activities, sophisticated textile and apparel designs on protective garments and footwear can reduce injuries and enhance the protection of human body from bacteria and toxic substances. Impact force can be absorbed by novel 3D knitting technology whilst retaining the comfort and air permeability of a protective garment. By means of metallic deposition technology, special fiber materials or chemical treatments, protective apparel products can create barriers to bacteria and toxic substances.

**(c) Health Care Textile & Apparel Products**

The demands and requirements of health care products are increasing with the ageing population and living standards. Advanced textile technologies, by means of weaving structures, chemical treatments or special fiber materials, can be adopted in different types of health care products such as napkin, masks and socks. Pressure garments are not only useful for injury management, but also weight management. Besides natural and biodegradable fiber materials, optical fibers can be considered for health care and beauty products.

**Objectives**

9. This invitation aims to solicit applied research and development proposals, for the sake of community advantages, that can revive the textiles and clothing industry and enhance its competitive edge in global marketplace.

**Target Beneficiaries and Benefits**

10. The beneficiaries of the project results are not only textiles and clothing companies but also the social community. It is envisaged that the results could improve the quality of life and community interest whilst enhancing the competitiveness of manufacturers through the development of new textile products, technologies, process and design.

### **Extra Merit**

11. Extra merit will be given to those applications, which could leverage on Guangdong's R&D capability in the implementation of the project proposals. We encourage collaboration among local research institutions and supporting organizations in both Guangdong and Hong Kong, leveraging their existing R&D facilities, resources and knowledge for the maximum benefits.

### **Project Duration**

12. The project shall start in the 2<sup>nd</sup> quarter of 2016 for a maximum duration of two years.

### **Electronic Submission of Applications (Application Form)**

13. Proposals should be submitted to the Hong Kong Research Institute of Textiles and Apparel (HKRITA) through the ITC Funding Administrative System (ITCFAS). Applicants have to first register as project coordinator of the R&D Centre. To prepare a proposal, a registered project coordinator should select "ITSP - R&D Centre (R&D Projects)" under grant type and then "Guangdong-Hong Kong TCFS: Platform Research Scheme" or "Guangdong-Hong Kong TCFS: Collaborating Research Scheme" as appropriate. The ITCFAS can be accessed via the ITF website at [www.itf.gov.hk](http://www.itf.gov.hk).

14. For regulations and submission requirements specific to the Centre, please visit its the website at [www.hkrita.com](http://www.hkrita.com) or approach the contact persons listed below.

### **Deadline for Application**

15. The deadline for application is on 30<sup>th</sup> September 2015, 5:00 pm (Hong Kong Time).

### **Contact Person**

16. Dr. Kai-chiu HO, tel: 2627 8188, fax: 2364 2727, e-mail: [kcho@hkrita.com](mailto:kcho@hkrita.com) .