

## **Guangdong-Hong Kong Technology Cooperation Funding Scheme 2007**

### **Textiles and Clothing (Innovative Textile Materials – Interactive Intelligent Textile Material)**

#### **Topic/Theme**

Interactive Intelligent Textile Material (IITM). To develop enabling technology for IITM that can be applied in the textiles and clothing industry.

#### **Background**

2. In the last decade, research and development in IITM have led to the birth of a wide range of novel smart products in aerospace, transportation, telecommunication, home, building, and infrastructure. Although the technology as a whole is relatively new, some areas have reached the stage where industrial application is both feasible and viable for textiles and clothing.

3. IITM are those that can sense, react and adapt to electrical or optical signals for textiles and clothing products. Because of the flexibility and potentials for very low weight and small sizes, their application cover a wide range of areas, including industrial monitoring/control of health and safety, security, personnel protection, medical products, lifestyle products, communications and pervasive computing etc.

4. Because of the important applications, there are major efforts worldwide to devote to this promising field. In US, the military and companies jointly funded MIT's NanoInstitute for Soldier Systems. EU has funded several large projects like My Heart, Wealth and My Protection. In Japan, The Ministry of Education funded CoE program in Shinshu University. Seoul National University in Korea has just started its Centre of large sized research program in this area.

5. To this end, applied researches in IITM will facilitate the development of modern functional textiles and clothing products and related devices. In this respect, it is considered that such a collaboration effort between Guangdong Province and Hong Kong should be able to build up the necessary expertise for the Great Pearl River Delta (Region). In particular, the swift adaptation of the new technology would give textiles and clothing industry in the Region the early mover advantage to spawn new business and facilitate the technological upgrading of the industry.

#### **Scope**

6. The proposed IITM is to facilitate integration into different niches in textile applications. Opportunities exist for fashion and industrial apparel, residential and commercial interior, military, medical and industrial textile markets.

7. The technologies of IITM should developed prototypes and reasonably demonstrated in Hong Kong or any major cities in the Guangdong Province to prove its viability.

8. In order to spearhead and support research and development of IITM, the ITF is seeking proposals on the following:

**(a) Conductive textile material**

The area of IITM has emerged from the wearable computing arena. To develop more appealing wearable electronics, electrically, conductive materials are being used to transform traditional textile and apparel products into lightweight, wireless wearable computing devices. Materials such as inks, polymers, metal particles, composites, etc. are being used to supply conductivity and create wireless textile circuitry. The conversion of the said materials into electrically, conductive yarn and fabric, including their production in traditional spinning and fabric formation process, would also be considered. They can be utilized to develop wash and wear wearable electronic apparel that look and feel like normal apparel. To support the development of IITM, it should:

- (i) Design and develop electrically, conductive materials; and
- (ii) Design and develop electrically, conductive yarns/fabrics derived from electrically, conductive materials.

**(b) E-textile devices**

Additional components including input and output devices are necessary to create an IITM. Sensors are small electronic devices that can receive and respond to stimuli enabling electronic textile functions to be related to the users. Sensors can be utilized for strain, pressure, position, temperature, gas and liquid. They can either be attached to or integrated into a textile substrate. In this connection, other devices such as miniature cables, connectors and switches should be developed in support to sensors. To support e-textile device development, it should:

- (i) Design and develop e-textile devices such as sensors, cables, connectors, switches, etc.;
- (ii) Design and develop the target wearable electronic system by integrating the e-textile devices with electronic components either via wired or wireless communication; and
- (iii) Standardize assessment technologies for performance of e-textile devices as well as issues relating to health, safety, comfort, etc.

**Objectives**

9. This invitation aims to solicit applied research and development proposals for the textiles and clothing industry to sustain and enhance its competitive edge in global marketplace, in the development of the fore front “Innovative Textile Materials” to demonstrate Hong Kong’s research and development capability.

**Target Beneficiaries and Benefits**

10. The beneficiaries of the project results are textiles and clothing companies and also the industrialists showing interest in IITM. It is envisaged that the results could enhance the competitiveness of manufacturers through the development of new product, technologies,

process and design, in enhancing IITM's viability, performance, durability and quality.

### **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 tertiary institutions and support organizations in both Guangdong and Hong Kong, so that their existing R & D facilities, resources and knowledge may be leveraged for maximum benefit.

### **Project Duration**

12. The project shall start in the first quarter of 2008 for a maximum of 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). Applicant has 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 22 October 2007, 5:00pm (Hong Kong Time).

### **Contact Person**

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