THE PEREZ-GUERRERO TRUST FUND FOR SOUTH-SOUTH COOPERATION

FINAL REPORT

Application and Promotion of Plastic Functional Materials in Developing Countries

Project Code: INT/17/K05

Name of submitting entity: Fujian Provincial Science & Technology Exchange Center with Foreign Countries (FSTEC)

Contact details of submitting entity:

Contact person: Zhang Yun, Director
Address: No.7 Hudong Road, Fuzhou, Fujian, China 350003
Telephone: +86-591-87859586
Fax: +86-591-87859586
Email: fjstec@126.com

2019-07

Ⅰ. Project Overview

1.Title of project: Application and Promotion of Plastic Functional Materials in Developing Countries

2.Abstract： Functional plastic material is widely used in all areas of national economy. With the rapid development of plastic industry technology, plastics production has more than 300 million tons at present in the world, and its use has penetrated into the national economy departments and the areas of people's life, with steel, wood, cement to be four pillar materials. With constantly in-depth development of the product, Functional plastic materials for its excellent of products performance its application range and the uses constantly are expanded, functional plastic materials in economic value also unceasingly are enhanced. At present, many southeast Asian countries and some developing countries and regions of South America has set off an upsurge of functional plastic material, such as Malaysia, Myanmar, Indonesia, Mexico, etc., but these countries and regions due to lack of plastic functional material research and development technology, unable to large-scale application in each country, functional plastic material is mostly rely on imported from foreign countries, lead to high cost, so can not be more widely applied. This project aims to learn and share with the developing countries on the application and development experience as well as technology of functional plastic material, provide advanced technology and train excellent talents for developing countries, set up the healthy development of

the plastic material industry and promotion of plastic materials. Let developing countries not only developed the functional plastic material industry and improve the economic benefit, but also make people's life better because of widely used of plastic materials industry products.

3.Situation Analysis： Global plastic production has more than 300 million tons in 2015. In the 2015 global plastic production, China accounted for the largest, at about 24.8%, the second is Europe, 20%. Packaging, building and construction is Europe's largest plastic market, followed by the auto industry as well as electrical and electronics products. China continue to stay ahead in the global plastic production, with the rapid development of plastic industry and technology, China has become the world's largest plastics market and base. At present all over the world have started to attach importance to increasing plastics technology development efforts, demand is growing for plastic materials. Japan, Europe and the United States and other developed countries because of their advanced industrial, medical, and agricultural technology, the development and processing of plastic materials has good foundation on the technology. which not only produced good economic benefits, their product has strong competitiveness of the advanced technology. at the same time, many developing countries because of influenced by economic conditions, plastic functional materials industry behind the situation it is difficult to quickly improve. In view of the industrial value of plastic materials, if in these developing countries to promote the adoption and processing of plastic materials technology can

not only generate huge economic benefits, can also play a role in strengthening national exchanges.

At present, although developing countries demand a lot of functional plastic material, plastic functional materials research and development is still relatively junior stage, at the same time, in the field of plastic functional materials processing applications, only use the domestic production of products, without go abroad, it is not conform to the law of sustainable development of the modern economy. But if buy advanced plastic functional materials and processing technology from developed countries, the price is too much, beyond the capacity of many developing countries. This will require a complete breakthrough in developing countries, efforts to improve plastic functional materials research as well as development and processing technology, processing the relationship between natural resource protection and plastic industry development, to seek a path of sustainable development.

As the world's largest developing country, China has been trying to seek cooperation with the Group of 77, to provide assistance to help developing countries. plastic functional materials is most widely used in China today. In recent years, along with the extensive and in-depth research on plastic functional materials, people has a complete and exact understanding of the plastic theory, the study and application of processing technology has been great development ， already fully capable to improve plastic materials research and development application of processing technology of developing countries.

Ⅱ. Implementation

1. Strategy: Based on economic and ecological benefits from plastics functional materials, the research and development of plastic functional materials processing applications and industries is very necessary as an important complement to national basic industries. But the majority of developing countries are still processing the way the production of plastic products, and low output, while lack of functional materials plastics processing technology, but also led to a lot of waste plastic functional material resources. Thus, seeking an efficient and sustainable eco-functional plastic materials industry development model, and the majority of the needs of developing countries in the promotion is very necessary. The project is committed to summarize a series of plastic functional materials research and application processing technology to effectively improve the use of plastic functional materials, and in many developing countries to promote the application. The ultimate goal is to make plastic functional materials industry in developing countries to become a truly modern industrial base, in line with the direction of development of low-carbon economy, sustainable development has become a low-power industry, developing into an industrial yield advantages of workers' income industry.

2. Implementation Phase： The project can be divided into five phases, of which the first four stages within the application scope of the project and need financial support Perez-Guerrero Trust Fund, the final step is intended

to promote a comprehensive plastic functional materials in developing countries to improve development industrial economic which benefits in the country and improve the living standards of people in developing countries.

Phase I: Organizing the expert group research, study functional plastic materials industry throughout China, mainly divided into two parts: 1) plastic functional materials research and application status in the film, cable and other fields; 2) Plastic Materials industry distribution and application of research. Based on findings of the analysis, summed up the promotion of plastic functional materials research , processing methods applied;

Phase II: On the basis of the first phase, the organization plastic functional materials industry development seminar, sharing plastic functional materials research and development associated with developing country members, processing experience and advanced technology; organize functional materials used in plastic resin and so different technology exchange activities for the next phase of the promotion of the plastic functional materials in developing countries to lay the foundation.

Phase III: According to the research and the exchange of the first two phases, a series of environmental protection, efficient and sustainable industrial development model plastic functional materials, including plastics in different areas of functional materials research and development, technology applications, functional materials plastic diversification, high processing methods, reuse plastic functional materials technology products, such as performance, these models will be first in China to promote

amplification.

Phase IV: Going to developing countries to participate in the project fieldwork development status plastic functional materials industry, processing of geographical and climatic conditions. According to the development model for application prior to the formation of local promotion, training and systematic plastic functional materials development and processing of local application of technology related personnel. Through field research and development, processing applications, market analysis, to further improve the function of plastic material suitable model of development in the country.

Phase V: On the basis of the four stages on the developing countries to promote the application of plastic processing functional materials, promote the use of alternating plastic functional materials, to carry out more long-term in-depth cooperation with developing countries to improve developing countries industrial economic efficiency, so that more people in developing countries to benefit from technological advances in the plastics industry.

3. Beneficiaries:

Direct beneficiary: All direct participants of enterprises or department involved in the project (Such as staff of research, seminars and training).

Indirect beneficiary: Plastics practitioners through the project access of national, as well as benefiting from plastic materials products of people involved in the project.

III. Project activities

Activity 1: Participating the Germany K Show in Dusseldorf of Germany

Date: 19-26 Oct. 2016

Place: Germany

Participants: People and enterprises involved in plastics and rubber industry

Event: On 19-26 Oct.2016, the Germany K Show which is held every three years took place in Dusseldorf of Germany. The project team organized the project partners to participate the Show. The K Show has been gradually known as the largest international show in the field of plastics and rubber (based on exhibitor, exhibition area, level and number of visitors). Due to its wide international influence, the exhibition has been regarded by the world plastics and rubber industry as a business opportunity and opportunity for information gathering and technical exchange that should not be missed. The K Show is not only a future indicator of the direction of industrial development, but also a place where experts can create new ideas through dialogue and exchange. Visiting K Show is the best way to gain insight into the needs of the international market and anticipate the future of the industry, and help to gain access to trade opportunities in emerging markets around the world.

Effect: After learning advanced plastic production equipment and enterprise management experience, the project team representatives agreed that only if to produce innovative products and improve production

processes, can the rubber and plastics industry develop for a long-term. Only if to develop for wider application, faster and more flexible application, including strengthening the performance of machinery, improving the quality of products, enhancing the use of materials, combining new processing methods and new methods of replacing traditional raw materials, can the industry sustain and continue to be competitive.

Pictures:

Activity 2: Carrying out technical service in Malaysia

Date: Nov. 2016

Place: Malaysia

Participants: Some enterprises and employees in plastics industry in Malaysia

Event: In November 2016, the project team dispatched the Director of the Fuzhou Fusu Institute of Science and Technology, Peng Chao, and related engineers to Malaysia for a one-month technical service, mainly helping the cooperation partner of the PGTF project - Dragonpak Industries（M） Sdn Bhd to carry out pilot-scale production test of functional masterbatch for plastic film. At the same time, in order to better promote the project in Malaysia, trainings were organized for the local production technicians and laboratory inspectors who actively participated in the project cooperation and on-site guidance for enterprise production was provided.

Effect: This activity not only helped Dragonpak Industries (M)Sdn Bhd succeed in the pilot scale production of functional masterbatches for plastic films, but also built a degradation masterbatch production line. The project was successfully put into operation and successfully promoted to the market. It has achieved good economic benefits for Dragonpak Industries (M) Sdn Bhd and other cooperative enterprises, and has been highly recognized by Malaysia side.

Pictures：

Activity 3: Technology Matching Conference of Upstream and Downstream of Petrochemical Industry

Time: 10 March, 2017

Place: Fuzhou, China

Participants: More than 60 people from upstream and downstream firms of petrochemical industry and financial service facilities in the countries and regions including China, Korea, Malaysia, Indonesia, Taiwan etc.

Event: In 10 March, 2017, organized by the participating company, Fuzhou Fusu Science and Technology Research Institute, the “Hand in Hand” & “Service for Small and Micro Businesses in Fujian”, the Technology Matching Conference of Upstream and Downstream of Petrochemical Industry was successfully held at the Trade Mansion in Wusi Road in Fuzhou. More than 60 representatives from Fujian Oil Refining and Petrochemical Company, Sinopec Sales (Fujian) Company, Strait Petrochemicals Trading Center, plastic companies of petrochemical downstream in Fujian Province, upstream and downstream firms of petrochemical industry in the countries and regions including China, Korea, Malaysia, Indonesia, Taiwan and financial service facilities including China Construction Bank, Postal Savings Bank of China participated the activity.

Effect: In the matching period of the activity, face to face matching and communication was carried out for over 30 participating companies and institutes, the matching communication was divided for raw material sector and financial service sector. In the raw material sector, the participants from

the plastic companies consulted problems on internet dynamic market information, material property and indicator of the price of plastic raw material from the petrochemical companies; in the financial sector, the participants of the companies consulted the conditions and requirements, loans and interest of loan financing, and communicated on the detailed problems of loan for the companies. The site was full of warm atmosphere and achieved good result.

Pictures：

Activity 4: The 31st International Exhibition on Plastics and Rubber Industries (CHINAPLAS 2017 International Rubber and Plastics Exhibition)

Time: 16-19 May, 2017

Place: Guangzhou, China

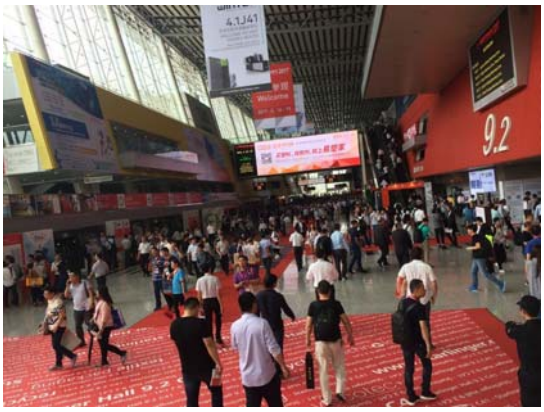
Participants: Over 3400 well-known raw materials and equipments of chemical industry suppliers from 38 countries and regions across the world

Event: On 16-19 May, 2017, organized by the project team, senior executives and technical staff from more than 30 plastics and rubber companies in Malaysia, Indonesia and other countries and regions went to Guangzhou to attend the 31st International Exhibition on Plastics and Rubber Industries. The exhibition is the largest specialty plastics exhibition in Asia. Themed “Green Plastics Shape Innovation, Intelligence Create Future”, the exhibition focused on “Intelligent Innovation, High and New Materials, Environmental-friendly Technology”, displaying the breakthrough new technologies and various high and new materials in the plastics industry and high cost effectiveness plastic processing technologies and management solutions.

Effect: During the exhibition, the companies organized by the project team contacted and learned about advanced plastic materials and plastic instruments at home and abroad, and conducted direct communication and exchanges with relevant exhibitors in the fields of plastic cutting-edge technology and equipment, new plastic materials and additives etc. It has

effectively promoted the follow-up work of this project.

Pictures：



Activity 5: The meeting with downstream companies of petrochemical industry in Fuzhou

Time: 22 May, 2017

Place: Fuzhou, China

Participants: Related people from Sinopec Beijing Marketing Research Institute and FUSU Company

Event:

On 22 May, 2017, invited by the project team, a group of six people from Sinopec Beijing Marketing Research Institute, led by the Director Mr. Ke Xiaoming, went to the Fusu Company for inspection and guidance, and a meeting was held aiming at the topics on use condition of the resin and plastics, market status of the downstream of the plastic industry and the development trend of the plastics industry during the "13^{th} Five-Year Plan" period etc.

Effect:

Through inspection tour and discussion, the cooperation intention has been reached between Fusu Company and Sinopec, Sinopec expressed that under the same condition the raw materials would offer to Fusu and other cooperated companies in priority. At the same time, Sinopec expressed that they would like to further promote cooperation between Sinopec and downstream plastics market, in order to promote exchange and cooperation with the companies in the petrochemical industrial chain to realize win-win development.

Pictures：




Activity 6: The S&T Diplomats Seminar on Global Tech Transfer & Matchmaking Conference on Cross-strait Tech Transfer

Time: 8 Sept. 2017

Place: Xiamen, China

Participants:

The S&T diplomats dispatched by the Ministry of Science and Technology who are stationed in Denmark, South Korea, the Netherlands, Russia, Israel etc., representatives from over 10 industries and institutions such as Formosa Plastics Corporation and EPISTAR Corporation, and representatives from enterprises and research institutions in the field of domestic advanced manufacturing and new materials amount to over 140 people.

Event:

On September 8, 2017, jointly hosted by the International Cooperation Department of the Ministry of Science and Technology and the Fujian Provincial Department of Science and Technology and organized by the Fujian Provincial Science and Technology Exchange Center, the S&T Diplomats Seminar on Global Tech Transfer & Matchmaking Conference on Cross-strait Tech Transfer was held in Xiamen.

Focusing on the demand of cross-border technology transfer in the two major fields of advanced manufacturing and new materials, 5 S&T diplomats stationed in Denmark, South Korea, the Netherlands, Russia and Israel were invited to introduce the S&T development in their stationed

countries, the characteristics and mechanisms of international S&T cooperation and policies and practices encouraging technology transfer and promote projects in the two areas of advanced manufacturing and new materials in their stationed countries. Besides, representatives from over 10 industries and institutions such as Formosa Plastics Corporation and EPISTAR Corporation, and representatives from enterprises and research institutions in Taiwan were invited to introduce technology transfer in Taiwan and highlight the technological achievements in advanced manufacturing and new materials.

FSTEC invited the partner of PGTF Project, Fuzhou Fusu Science and technology Research Institute to participate in this conference and strongly promote the cooperation between the company and Formosa Plastics Corporation.

Effect:

103 project achievements were promoted by the S&T diplomats, including 33 projects in the field of advanced manufacturing, 70 projects in the field of new materials; 30 projects were recommended by institutions in Taiwan, including 16 projects in the field of advanced manufacturing and 14 projects in the field of new materials. 7 projects were reached the intention of cooperation at the conference with the amount of intention cooperation to RMB 21 million. Among them, Fuzhou Fusu Science and Technology Research Institute Corporation and Formosa Plastics Corporation held talks on "Development of high-efficiency energy-saving screw cleaning

materials", mainly discussing the development of cleaning materials, its application of injection molding machines, extruders and other industries, to enable it with the advantages of high efficiency and energy-conservation. The two sides hoped that their advantages could be complemented with each other to promote technological innovation, jointly development and they planned to sign the contract with an estimated amount of RMB 1 million. At the same time, Fusu Company and Formosa Plastics Corporation reached a cooperation agreement initially on “Jointly Building a Window of Cross-Strait Tech Transfer of Formosa Plastics Corporation” to strengthen the upstream and downstream industrial technology matchmaking and technical exchanges for the enterprises of both sides, so as to promote industrial integration and industrial development.

Pictures：




Activity 7: The 32nd International Exhibition on Plastics and Rubber Industries (CHINAPLAS 2018 International Rubber and Plastics Exhibition)

Time: 24-27 April, 2018

Place: Shanghai, China

Participants: Over 4000 well-known suppliers of chemical raw materials and equipments from 40 countries and regions across the world

Event:

On 24-27 April, 2018, the project team organized a total of 53 executives and technicians from more than 30 enterprises in Fujian province, Malaysia, Indonesia and other countries to Shanghai to participate in the largest plastics professional exhibition in Asia. The exhibition covered an area of more than 320,000 square meters, and more than 4,000 well-known chemical raw materials and equipment suppliers from 40 countries and regions around the world participated. Themed “Innovative Plastic Future”, the exhibition focused on the three directions of “Intelligent Manufacturing, High-tech Materials and Environmental Protection Technology”, to assist the upstream and downstream enterprises in the rubber and plastics industry to thrive in the fierce competition by blowing the horn of innovation, setting the tide of the times, occupying the high ground of technology and taking the lead in the times.

Effect:

During the exhibition, leading by the project team, the company contacted

and learned the advanced plastic materials and plastic instruments and equipment at home and abroad, and communicated directly with the relevant exhibitors in the fields of plastic cutting-edge technology and equipment, new plastic materials and additives. For example, Fuzhou Lufan Medical New Materials Corporation has learned and communicated medical new materials and extrusion equipment; Fujian Xianglong Plastics, Fujian Hengjie Plastics and Fujian Yatong New Materials have made in-depth communication on new types of pipe-making equipment. Malaysian Dragonpak Industries (M) Sdn Bhd, Indonesia PT. Arya Wiraraja Plastikindo, Fuzhou Zhengxing Plastics and other companies communicated and exchanged injection molding equipment and molds and auxiliaries; Indonesia PT.ABPS Technology Batam, Indonesia PT. Stellarway Indonesia Cipondoh, Indonesia and other companies have learned about engineering plastics granulation and recycling technologies and equipment. They all expressed that participating in this exhibition not only opened up their horizons but also provided a reference for transformation and upgrading of their enterprises.

Pictures：

Activity 8: Maritime Silk Road S&T Innovation Cooperation & S&T Diplomats Seminar on Global Tech Transfer

Time: 8 Sept. 2018

Place: Xiamen, China

Participants:

The S&T diplomats dispatched by the Ministry of Science and Technology who are stationed in Singapore, Indonesia, Vietnam, Thailand and other countries along the Maritime Silk Road, representatives from the Ministry of Science and Technology, science and technology departments of various provinces (regions), relevant scientific research institutions and enterprises, totaling more than 150 people.

Event:

On 8 September 2018, jointly hosted by the International Cooperation Department of the Ministry of Science and Technology and the Fujian Provincial Department of Science and Technology and organized by the Fujian Provincial Science and Technology Exchange Center, the Maritime Silk Road S&T Innovation Cooperation & S&T Diplomats Seminar on Global Tech Transfer was held in Xiamen. The S&T diplomats stationed in Singapore, Indonesia, Vietnam, Thailand and other countries along the Maritime Silk Road were invited to introduce the existing S&T development situation, development direction of S&T industry and major technology demands in their stationed countries. Besides, representatives from the Science and Technology Evaluation Center of the Ministry of Science and Technology and China-South Asia International Technology Transfer Center and Weituo International Investment Consulting Corporation and other international technology transfer institutions were

invited to introduce the importance of science and technology assessment in assisting global technology transfer, the major achievements and experience in transnational technology transfer between China and countries in South Asia and the cooperation models and practices in science and technology capacity.

FSTEC invited PGTF partners Fusu Company and Dragonpak Industries (M) Sdn Bhd to participate in the event.

Effect:

At the event, three projects have reached a cooperation intention, facilitating the edible fungus technology, plastics processing technology and graphene technology toward countries along the Maritime Silk Road, such as Indonesia, Malaysia and India. Among them, Fuzhou Fusu Science and Technology Research Institute Co., Ltd. and Malaysian Dragonpak Industries (M) Sdn Bhd Company reached a cooperative development intention on “Development and Application of Plastics Technology”.

Pictures：

Activity 9: R&D on New Bamboo-plastic Composite Products in Cooperation with Korean SHIN SUNG AEROGEL.CO., LTD

Time: 19-21 Oct. 2018

Place: Changzhou and Taicang in China

Participants: FUSU (Fusu Science and Technology Research Institute) and Korean SHIN SUNG AEROGEL.CO., LTD

Event:

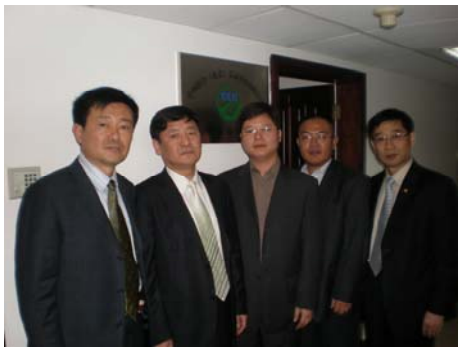
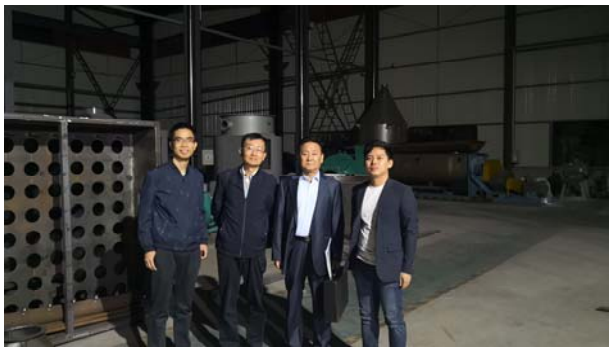
The project participant FUSU have successively signed the project agreements with Korean SHIN SUNG AEROGEL.CO., LTD, such as “R&D and Promotion of High Dielectric Strength Halogen-free Flame-retardant ABS Materials” “Co-Application for Technology R&D Patent” and “Cooperation Framework Agreement”etc. The two parties cooperated in research and development of New Bamboo-plastic Composite Products. During the period of 19-21 October, 2018, FUSU and Korean SHIN SUNG AEROGEL.CO., LTD went to Changzhou and Taicang to test the performance of bamboo powder micro-grinder and flash streaming drier, and carried out related experiments.

Effect:

Bamboo plastic is a type of green degradable materials. It is a green and environment-friendly way that bamboo-plastic composite materials could replace the wood to produce packaging boxes.This technology will accelerate the development of the packaging industry towards green and environmental protection process and provide a strong impetus for

promoting enterprise transformation and upgrading. Through cooperation between the two parties, bamboo-plastic materials have been successfully applied to the fields of plastic mulch and plastic packaging in Korea, and have been well received by the industry. Korean companies plan to expand production and extend the technology to Southeast Asian countries such as Malaysia and Indonesia.

Pictures：


Activity 10: 2018 CHINA NEW PLAS & the 3rd Plastics New Materials, New Technology, New Equipment and New Product Exhibition

Time: 28-30 Oct. 2018

Place: Nanjing, China

Participants:

There are more than 1,500 enterprises in 40 sub-industries in the plastics industry chain around the world, focusing on domestic and foreign plastic raw and auxiliary materials, plastic machinery, plastic molds, packaging machinery, plastic products processing enterprises, local industry business associations, industry experts, scholars, etc.

Event:

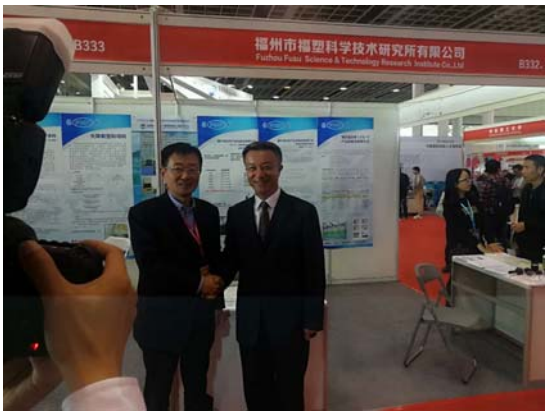
On 28-30 October, 2018, the project team organized FUSU ((Fusu Science and Technology Research Institute) and its partners to participate in the 2018 CHINA NEW PLAS & the 3rd Plastics New Materials, New Technology, New Equipment and New Product Exhibition. Hosted by China Plastics Processing Industry Association, it is a large-scale exhibition centered on plastic “Four New” and a platform for whole industry chain comprehensive information and S&T achievements exchange and service covering plastic raw and auxiliary materials, plastic equipment, plastic molds, plastic products and plastics R&D achievements. The exhibition aims to promote international cooperation through the initiative of “The Belt and Road” for the plastics industry, and open up a service platform with the core of S&T exchange to showcase excellent products and expand the trade market, and further promote the plastics industry to an ecological green industry through transformation, upgrading, innovation and development. FUSU applied for an independent booth at this exhibition and

presented more than 20 products and technologies. At the same time, in the afternoon of 28 October, FUSU invited partners to participate in the “The 1ST China Plastics Industry Technology Conference” organized by the Organizing Committee of the Exhibition, more than 1,000 people including domestic and foreign entrepreneurs, engineering and technical personnel, experts and scholars and representatives from local (commercial) associations attended the conference.

Effect:

Through presentation and promotion of the exhibition, over 10 institutions and business representatives visited the booth to exchange and a number of cooperation exchanges or purchase intentions have been initially reached. At the same time, this exhibition enhanced the popularity and effect of FUSU in the plastics industry as well.

Pictures:



Activity 11: The Symposium for Private Enterprise of Plastic Industry in Fuzhou

Time: 11 Nov. 2018

Place: Fuzhou, China

Participants: More than 50 people including representatives from Fuzhou plastics industry enterprises, Plastic Industry Association and leaders from Fuzhou Science and Technology Executive Departments.

Event:

On 11 November, 2018, “The Symposium for Private Enterprise of Plastic Industry in Fuzhou” led by FUSU (Fuzhou Fusu Science and Technology Research Institute) was successfully held in Fujian Sijia Group Industrial Park. The symposium was hosted by Mr. Peng Chao, the Director of FUSU, Mr. Zhang Wensheng, the Secretary of the Party Committee of Fuzhou Municipal Bureau of Science and Technology and Mr. Zheng Shouping, the former Deputy Director of the Fuzhou Municipal Bureau of Science and Technology attended the symposium and delivered a speech respectively.

Xu Xiangmian, the Vice President of Fuzhou Plastics Industry Guild and Chairman of Fuzhou Yexia Plastic Leather Co., Ltd., said that there still exist prejudices to the plastics industry and misunderstandings to the environmental protection property of plastic products. As the Plastics Industry Guild, it is necessary to shoulder the responsibilities to disseminate the plastics industry, change the social misunderstandings and

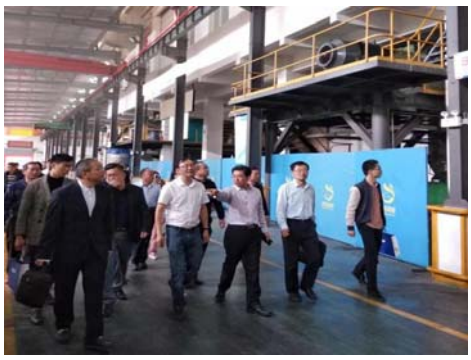
create opportunities for development of the industry.

Pan Minzhong, the Vice President of Fuzhou Private Science and Technology Industrialists Association and Chairman of Fujian Fran Optics Co., Ltd., said that with the development of modern science and technology, plastics can replace other materials and its application fields become wider, and the plastic materials are necessary for optical instruments such as high-definition panoramic cameras, AR/VR glasses etc. Wang Cunqi, the Vice President of Fuzhou Plastics Industry Guild and General Manager of Fujian Hengjie Plastic Industry New Materials Co., Ltd., called on that the plastic pipe companies should do their best to make products and relevant departments should take up their due responsibilities to restore the original market environment of plastic pipes. Li Ji'an, the President of Fuzhou Plastics Industry Guild and General Manager of Fujian Xianglong Plastics Co., Ltd., said that there is a social misunderstanding of the plastics industry because of problems exist in some manufacturers with non-standard production operations misleading the public that it is a common situation in the pipeline industry, which increases the misunderstanding of the plastics industry and limits the development of the pipeline industry. The guild or association should play its functional role to actively provide feedback to the government and seek improvement measures. After the symposium, the representatives went to some enterprises to inspect the production situation.

Effect:

At the symposium, the entrepreneurs exchanged ideas, actively interacted, listened to sharing and guidance, expressed freely combined with the current situation and have a more definite understanding on the future direction of the company.

Pictures：



Activity 12:

Signing the Technology Development (Trust) Contract on "High Modulus and Impact Resistance Plastic Pallets"

Time: 28 March, 2019

Place: Fuzhou, China

Participants:

FUSU (Fuzhou Fusu Plastic Science and Technology Research Institute Co., Ltd.) and Dragonpak Industries (M) Sdn. Bhd.

Event:

On 28 March, 2019, the Chairman of the PGTF Project Partner Dragonpak Industries (M) Sdn Bhd, Jim Ong came to FUSU to discuss the research progress of biodegradable plastics and its application in plastic bags and other products. The related technologies such as impact resistance, toughening, foaming and other functional modification of plastic products as well as the cooperation in the field of establishment of product standardization was discussed. The two parties signed a technology development (trust) contract on "High Modulus and Impact Resistance Plastic Pallets", and entrusted FUSU to develop high-modulus, impact-resistant and easy-to-use large plastic pallets for petrochemical companies and downstream industrial warehousing and logistics, including: material formulation screening, mold structure setting, processing process parameters establishment and equipment selection customization etc. At the same time, Chairman Jim Ong visited the laboratories and equipments of

FUSU.

Effect: The signing of the contract laid a solid foundation for further cooperation.

Pictures：




Activity 13: Training on Basic Knowledge of Common Plastics

Time: 27-31 May, 2019

Place: Fuzhou, China

Participants: 10 people including representatives from FUSU (Fuzhou Fusu Science and Technology Research Institute Co., Ltd.) and technicians from PT.ABPS Technology Batam

Event:

Entrusted by PT.ABPS Technology Batam of Indonesia, FUSU conducted a five-day training on basic knowledge of common plastic for 10 technicians of the company. In order to open up the Chinese market and improve the theoretical level and business quality of the sales personnel, the Director of FUSU, Mr. Peng Chao and other engineers were entrusted to carry out a five-day training on basic knowledge of common plastic for the three technicians of the company.

Effect:

The training has effectively improved the theoretical level and professional quality of technicians of PT.ABPS Technology Batam, laying a good foundation for the company to further develop the Indonesian plastics market.

Pictures：

PT.ABPS Technology Batam

委托培训函

福州市福塑科学技术研究所有限公司
福州市塑胶行业技术创新中心：

我司为一家专业生产塑料造粒的厂家，工厂设在印度尼西亚巴淡市，年产 PE、ABS、PA、PS 等塑料造粒约 5 万吨，为开拓中国福建市场，提高我司中国市场销售人员的理论水平和业务素质，经我公司研究决定，拟委托中国福州市福塑科学技术研究所有限公司（福州市塑胶行业技术创新中心）举办一期“常用塑料基本知识”培训，时间：2019 年 5 月份，拟定 5 天，培训人数 3 人。

谢谢！

公司名称（盖章）：PT.ABPS Technology Batam

2019 年 5 月 8 日

Activity 14:

Carrying out the PGTF Project “The Application and Promotion of Plastic Functional Materials in Developing Countries” in Malaysia and Indonesia

Time: 15-22 June, 2019

Place: Malaysia, Indonesia

Participants: Project management personnel from FSTEC, and technical experts from FUSU (Fuzhou Fusu Science and Technology Research Institute Co., Ltd.)

Event:

On 15-22, June 2019, organized by FSTEC, a group of 6 people including the project management personnel from FSTEC and technical experts from FUSU went to Malaysia and Indonesia to carry out PGTF Project of “The Application and Promotion of Plastic Functional Materials in Developing Countries”. Through field inspection, cooperation talks, technology promotion, knowledge training and other activities, the development of local plastics industry in developing countries has been assessed, the functionalization and modification technology of plastic products has been shared and technical trainings for local employees targeting the local insufficient plastic R&D and processing technology has been provided to improve the economic benefits of the plastics industry. The implementation of the project has strengthened the S&T cooperation and exchange between China and Malaysia, China and Indonesia in the field of plastics industry, promoting the “Go globally” strategy of the enterprises in Fujian province under “The Belt and Road” initiative, through participating in international

project for cooperation and innovation to realize the transformation and promotion of S&T achievements, the friendly relationship between China and Malaysia, China and Indonesia has been promoted.

Effect:

According to the phased mission plan and the schedule of the PGTF project, during the visit, the project team went to several places in the two countries. During the stay in Malaysia, the project team visited the International Islamic University Malaysia, Malaysian Plastics Manufacturers Association, Johor Bahru New General Plastic Enterprise Sdn. Bhd., Dragonpak Industries (M) Sdn. Bhd.; during the stay in Indonesia, the project team visited PT. Arya Wiraraja Plastikindod, PT. ABPS Technology Batam, Batam Plastics Industrial Park, Krida Wacana Christian University (UKRIDA), PT. Stellarway Indonesia Cipondoh, etc.

(1) Visiting the International Islamic University Malaysia

The project team visited the International Islamic University Malaysia in Selangor and held an exchange meeting with representatives from the College of Engineering and professors of the University. The two sides introduced their respective research directions and possible areas of cooperation, such as electric conduction, research on thermal conductive plastics and market promotion of degradable plastics in Malaysia. The project team discussed with the International Islamic University Malaysia on projects of plastic functional modification and cooperation on cultivation of talents in the field of plastic modification. At the same time,

both parties expressed their hope to carry out multilateral cooperation through “The Belt and Road” channels, to effectively exploit their respective advantages, and plan to carry out industry-university-research cooperation in the fields of biomass utilization and thermal plastics and research and develop on new products, jointly establish laboratories and cultivate talents etc.




(2) Visiting the headquarters of the Malaysian Plastics Manufacturers Association

The project team visited the headquarters of the Malaysian Plastics Manufacturers Association in Kuala Lumpur. The two sides reported on the information of the plastics industry in the two places. They agreed that the key to sustainable development and economic development of future plastics industry is to be responsible for plastic use. The project team and the association talked on cooperation of technology transfer between Fujian

Province of China and Malaysia in the fields of plastic processing and functional modification.

(3) Visiting the Branch of the Malaysian Plastics Manufacturers Association and New General Plastic Enterprise Sdn. Bhd.

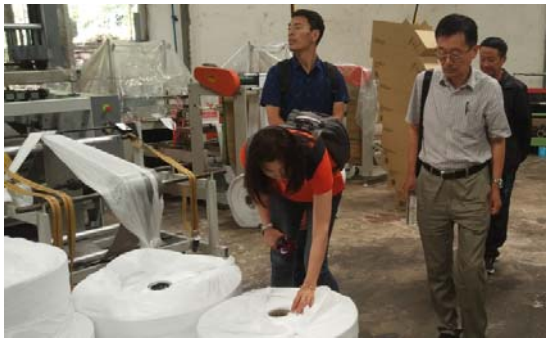
The project team went to Johor Bahru to visit the Branch of the Malaysian Plastics Manufacturers Association in Johor Bahru to discuss the technical cooperation of plastic products processing technology. Introduced by the staff of the association, the project team visited Johor Bahru New General Plastic Enterprise Sdn. Bhd. and discussed with the person in charge of the company on strengthening trade cooperation of plastic products such as packaging plastics and engineering plastics in the two places under “The Belt and Road” Initiative.

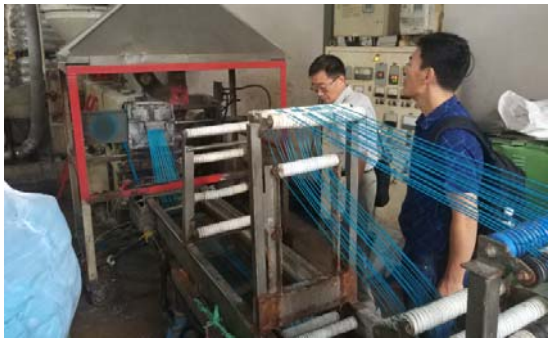
(4) Visiting the Dragonpak Industries (M) Sdn. Bhd.

The project team visited the Dragonpak Industries (M) Sdn. Bhd. guided by the staff of Malaysian Plastics Manufacturers Association to discuss the detection of biodegradable materials and degradable plastic food bags, cooperation on selection of equipment and raw and auxiliary materials and procurement and manufacturing of plastic pallets, and explored the feasibility of applying palm oil residue and other natural resources in Malaysia to the plastics industry. The project team talked on the quality management and service of the company with Jim Ong, the Chairman of Dragonpak, and held the training on application of plastic functional materials at Dragonpak to organize the local plastics practitioners to participate in the training. The Director of FUSU, Mr. Peng Chao and the management and technical personnel of Dragonpak conducted face-to-face technical exchanges and guidance to explore ways to improve the economic efficiency of the local plastics industry.

(5) Visiting the PT. Arya Wiraraja Plastikindod

The project team went to the PT. Arya Wiraraja Plastikindod. in Batam Island, Indonesia, to discuss cooperation on detection of plastic products and the development of new products, and inspected the production line on site.





(6) Visiting the PT.ABPS Technology Batam

The project team went to the PT.ABPS Technology Batam to discuss technology transfer and cooperation in the fields of environmental-friendly use and deep processing of plastics, and conducted on-site inspection of ABPS production lines and environmental treatment facilities to learn the main product types and existing technology bottlenecks of ABPS and

provide suggestions.

(7) Visiting the Batam Plastics Industrial Park

The project team visited the Batam Plastics Industrial Park to learn about the investment situation of Chinese plastics companies in Indonesia, and discussed with the park leaders about the technical cooperation on environmental-friendly use of plastics, trade, personnel exchange and training between Fujian and Indonesia, and organized some plastic employees in the park to carry out technical training.

(8) Visiting the Krida Wacana Christian University (UKRIDA**)**

The project team visited the UKRIDA in Indonesia to discuss cooperation on formulation of technical standards of plastic products, product detection and personnel training etc. The two sides proposed to carry out various forms of personnel training, such as student exchange program, teacher exchange and cooperation or teacher-student exchange on summer vacations etc. The two sides discussed to jointly strive for education under the “The Belt and Road” initiative and jointly cultivate professional talents in the field of plastic polymers, to share resources for common development, and to provide a platform for students with factory production practices of Chinese and Indonesian companies combining the demand for innovation and development of local Indonesia.

(9) Visiting the PT. Stellarway Indonesia Cipondoh

The project team visited PT. Stellarway Indonesia Cipondoh, and learned about the development status and existing problems of the company. The employees of Stellarway were weak in knowledge of plastics and ability for operation. For this reason, the Director of FUSU, Mr. Peng Chao and engineers gave lectures on plastic film materials to some process

technicians of Stellarway Company. Jakarta, the capital of Indonesia, there is a large plastics market in Southeast Asia. Stellarway Company mainly produces plastic film ziplock bags, and the product variety is single. The project team and Stellarway Company discussed the development of functional new materials and engineering plastics on load-bearing pallets and other products. The two sides hoped to jointly create innovative ideas, develop new products and carry out cooperation in multi-levels.

Ⅳ. Activities costs

Activities costs of this project were strictly based on the financial budget. FSTEC referred specialized accountants to manage the economic evaluation and review for this project. Project leaders were also responsible for monitoring of cost for each activities regarding to the project and required for submission of periodical report to the Director General of FSTEC for processing and stage of the project. Details are shown below:

No.	Items	PGTF Fund	Fusu Fund	Total
1	International travel	10,000 USD	22,500 USD	32,500 USD
2	International consultants	9,000 USD	19,000 USD	28,000 USD
3	Training workshop	3,500 USD	7,300 USD	10,800 USD
4	Seminar	1,500 USD	3,200 USD	4,700 USD
5	Domestic travels	1,100 USD	1,500 USD	2,600 USD
6	Equipment	6,900 USD	14,500 USD	21,400 USD
	Total	32,000 USD	68,000 USD	100,000 USD

Therein, the unpaid 10% remaining fund of PGTF amounting to 3200 US dollars has been paid by the project implementation agency in advance.

Ⅴ. Project management arrangements

1.Management arrangements.

Fujian Provincial Science & Technology Exchange Center with Foreign Countries (FSTEC) will be responsible for overall management of

the project. The project will be implemented by FSTEC. FSTEC will appoint a project coordinator who will report to it. All project staff will be appointed by FSTEC and will not hold UNDP contracts. The UNDP Country Office will, on request by SU-TCDC, release an advance equivalent to 90 % of budget resources after project approval. FSTEC will produce a report to be submitted to the UNDP Country Office and forwarded to SU-TCDC. SU-TCDC will recommend release of the remaining 10% of the budget by the Country Office. The role of the Country Office will be to facilitate signature of project document, disbursement of 90 % of resources, forwarding the report to SU-TCDC and disbursing the final 10 % of project funds.

2.Execution Arrangements.

The project will be executed under the National Execution modality (NEX) with Fujian Provincial Science & Technology Exchange Center with Foreign Countries as Executing Agent.

3.Monitoring and evaluation; lessons learned.

Progress monitoring will be done by China International Center for Economic and Technical Exchange,Ministry of Commerce. However, any staff from the UNDP or Perez-Guerrero Trust Fund may undertake monitoring activities in line with managerial roles above.The project may be audited by the Perez-Guerrero Trust Fund.The lessons learned will be written into a report after the project has been implemented.