R&D COLLABORATIVE PROPOSAL / COMPANY PARTNER SEARCH

The information you are about to provide in this form will be distributed among Spanish companies matching your company profile and that might be interested in the proposal of collaborative R&D project that you will be describing in this form. (Please use English language for filling in the document)

In the case that your company will establish a R&D project in collaboration with a Spanish company, you could present a Joint Project Proposal to the CHINEKA Program**.**

YOURENTITY PROFILE

Name: Technical Institute of Physics and Chemistry of the Chinese Academy of Sciences

Number of employees:510
Annual turnover:1 billion RMB
Balance Total:60 million RMB
Year of latest financial report:2019

Address:29 Zhongguancun East Road	**Telephone: 86-10-82543770**
City: Beijing	**Fax: 86-10-62554670**
Postal Code:100190	**Email: zhc@mail.ipc.ac.cn**
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COLLABORATIVE R&D PROJECT PROPOSAL

(Describe as precisely as possible the technology cooperation proposal. Describe what you have to offer and what you expect from your potential partner) Include: Sector Group; Abstract of Project; Innovations Offered; and Current State of Development

Title	(Do not exceed 120 characters) Research on integrated technology of high-quality freezing and sterilization of aquatic products based on assisted electromagnetic field		
Duration (YM- YM)	2021-2023		
Budget(1,000 Euro)	SPAIN	CHINA	TOTAL
		380	
Technology Field (Click a box)	☐ Smart Cities ☐ Production Technologies, ☐ Biomedicine and Technologies for Health, ☐ Environment technologies ☐ Clean Technologies ■ Modern Agriculture ☐ Advanced Materials. ☐ Others		
Summary	Food quality and safety are two important aspects in food engineering. The high added value of aquatic products determines the requirement of high freezing quality. Meanwhile, the discovery of COVID-19 nucleic acid in frozen aquatic products has posed a challenge to the microbial control of frozen aquatic products.The purpose of this project is to achieve high-quality freezing and sterilization of aquatic products,by developing electromagnetic field assisted technology. This project will improve freezing quality and control the reproduction and spread of microorganisms.		

SPANISH PARTNERS

(When you know a potential Spanish company, write its name and contact details in this section) Please, make a description of the desire type of Spanish Technology Partner.

Desired type of Spanish Technology Partner:

+ Freezer manufacturer
+ Frozen fish company

At this moment, the research group INNOTECHFOOD belonging to the Institute of Food Science, Technology and Nutrition (ICTAN) of the Spanish National Research Council (CSIC) is interested in collaborating in this project. This group has broad experience in characterizing innovative freezing processes and evaluating the effects of food quality. To obtain more detailed information about the main interests and capacities of the group, please, consult the website https://www.ictan.csic.es/en/research/research-teams/innovative-processes-and-food-quality-innotechfood/

YOURENTITY DESCRIPTION

(Entity Website, Research and development guidelines, strategic alliances, competitive position, etc)

(The minimum information to show the potential of your company)

The Technical Institute of Physics and Chemistry of the Chinese Academy of Sciences (TIPC-CAS) focuses on interdisciplinary fields in physics, chemistry and engineering technology. As a national institute, TIPC dedicates to high-tech innovation and technology transfer to serve for the national economy and development of society. On one hand, the institute has been strengthening its fundamental research in the cutting edge technologies to further develop its innovation capability. On the other hand, great efforts have been made to promote the combination of scientific research and industry.

The core research fields of TIPC include the optical functional materials and devices, the functional crystals and laser technology, the new technologies of cryogenic engineering, the photochemistry researches, the biomimetic smart interfacial materials, the bio-based materials, the medical technical equipment and the degradable plastic materials.

Up to date, TIPC has set up 1 national key laboratory, 1 national engineering research center, 4 CAS key laboratories and many other laboratories research centers and research groups. The institute has been authorized both the Master's programs and the Ph.D. programs, as well as the post-doctoral positions. TIPC has a total of 510 staffs, among whom there are 5 members of the Chinese Academy of Sciences (CAS), 2 Fellows of the Third World Academy of Sciences, 2 members of the Chinese Academy of Engineering, 1 foreign member of the US National Academy of Engineering, 86 research professors, and 149 associate research professors. There are also over 500 graduate students doing their coursework and research work at the institute.

As a scientific institute, TIPC always uphold the notion of opening-up and is active in the international cooperation and exchanges. Long-term partnership has been established with major S&T institutions worldwide from the USA, Germany, France, Russia, Japan, etc.

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YOURENTITY PRODUCTS

(Technologies, applications, services, etc)

(The minimum information to show the potential of your company)

Main aims

Food quality and safety are two important aspects in food engineering. The high added value of aquatic products determines the requirement of high freezing quality. Meanwhile, the discovery of COVID-19 nucleic acid in frozen aquatic products has posed a challenge to the microbial control of frozen aquatic products. The purpose of this project is to achieve high-quality freezing and sterilization of aquatic products, by developing electromagnetic field assistedtechnology. This project will improve freezing quality and control the reproduction and spread of microorganisms.

Research contents

1) Research on the technical parameters and rules of electromagnetic field assisted freezing for improving the quality of aquatic products：The quality of aquatic products will be studied under the electromagnetic field parameters of different intensity and frequency. The best parameters and the rules will be obtained and summarized.

2) Research on the technical parameters and rules of electromagnetic field assisted freezing for aquatic products sterilization：The sterilization effect under strong electromagnetic field (plasma, ozone, etc., produced by it) will be studied. The best parameters and the rules will be obtained and summarized.

3) High-quality freezing/sterilization integrated process development based on electromagnetic field assisted technology：The electromagnetic field assisted freezing process of typical aquatic products will be studied to simultaneously achieve high-quality freezing and sterilization.

4) High quality freezing/sterilization integrated equipment development based on electromagnetic field assisted technology.