Search for a Spanish Partner for a Bilateral R&D Project

Organization	
Date of Request:	17/09/ 2025
Company name:	Faculty of Postgraduate Studies for Nanotechnology- Cairo University
Contact person and title/ designation:	Professor Soha Ali Abdel Gawad Vice Dean of Faculty of Postgraduate Studies for Nanotechnology
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SECTION 1: Entity launching the partner search *(Please give brief / to the point explanations. For more explanation on any point below, you may add a short paragraph as an annexure, with this document.)*	
Sector	Nanotechnology
Entity mission or core functions	Our mission to promote nanotechnology education, research, and innovation in nanotechnology, with a strong focus on developing sustainable solutions for environmental challenges.
Date of establishment	2021
Ownership (if public and traded, add stock exchange and ticker symbol)	Faculty of Postgraduate Studies for Nanotechnology – Cairo University
Total number of employees	80
Number of employees in R&D	60
Key products sold or services provided	Postgraduate academic programs in nanotechnology. Research and consultancy in nanomaterials and their applications. Training programs for students and researchers.

	Laboratory services in environmental nanotechnology, and waste treatment.
Entity core technical competences	Synthesis and functionalization of nanomaterials. Application of nanomaterials in waste treatment. Nanotechnology for renewable energy and environmental remediation.
Key R&D programs and activities	Nanoparticle-based removal of heavy metals and organic pollutants from wastewater. Development of low-cost and eco-friendly nanomaterials for industrial waste treatment. Exploration of nanostructured membranes for water purification. Renewable energy applications through nanomaterials. Nanotechnology applications in drug delivery and agriculture.
Examples of accomplishments	Projects on the removal of heavy metals and dyes from industrial effluent using nanomaterials.
Company strategic orientation	Expand international collaborations in nanotechnology and waste treatment, positioning our faculty as a regional leader in applying nanotechnology to address environmental and industrial challenges.

SECTION 2: Spanish Company Profile *(Please provide a brief summary of the prospective partner company or organization. This summary may address some or all of the points below)*	
Profile of ideal technology partner	
Core technological competencies and expertise	• CO2 naturally, turning farms into huge carbon sinks capable of combating climate change. Through our technology, from this captured CO2, we generate carbon credits of economic value for farmers and facilitate their sale to companies • Agricultural Waste Management • equipment that recovers Nitrogen, Phosphorus and Potassium from manure

	reducing soil and underground water contamination • Artificial intelligence (AI): Development of proprietary algorithms for crop management through the remote detection.
Other essential qualifications (e.g.: ownership, track records etc.)	
If you have a list of companies with whom you are in contact or interested in contacting, please provide contact details	
If you are interested in collaboration: please specify details and other important information you want to share with a potential company	We are seeking a company of Agrowaste treatment specially biochar and bioplastics preparations Providing expertise for improvement of synthesized bioplastics and biochar - Providing lab facilities and packing technology transfer.
Interested areas of collaboration	Bioplastics Biochar Agrowaste treatment Artificial neural networks ANN in agrowaste Circular economy
Specific R&D contribution you are seeking/offering	Development of biodegradable bioplastics and biochar depend on agrowastes biopolymers with low carbon foot print for circular economy'

Summary

Title: Development of biodegradable bioplastics and biochar depend on agrowastes biopolymers with low carbon foot print for circular economy'

Abstract:

The depletion of accessible natural resources, combined with increased environmental concerns, has fueled a need to find new ways to make environmentally acceptable products. Many studies have been conducted to address environmental challenges associated with the disposal of agricultural waste. Every year, vast amounts of agricultural waste are generated, which is a serious economic and environmental concern. Extraction of biopolymers from agrowaste is vital in our research to replacement of chemicals and products with carbon footprint. Artificial intelligence (ANN) artificial neural networks will be apply in this work to predict and optimize processes. These wastes can be used as secondary raw materials to make value-added goods that adhere to the circular economy's guiding principles. The use of natural agricultural waste has become crucial for the development of sustainable biopolymer-based composites for lightweight applications. These products will Compatible with SDG goals .

Signature Soha Abdel Gawad
Name: Soha Ali Abdel Gawad
Date: 20-9-2025