

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

Organization	
Date of Request:	22 September 2026
Company name:	EGYMAG Biotechnology (Egyptian industrial partner) / Zagazig University, Faculty of Science (academic/research partner)
Contact person and title/ designation:	Dr. Heba Hani Ramadan Ahmed, Lecturer (Assistant Professor) of Entomology, Department of Zoology, Faculty of Science, Zagazig University; in coordination with Dr. Ahmed Radi, Chairman of EGYMAG Biotechnology
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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	Biotechnology, Agriculture and Sustainable Food and Feed Production, Circular Bioeconomy, and related Energy and Environmental Applications.
Entity mission or core functions	The Egyptian consortium combines <u>Zagazig University, Faculty of Science</u> , as the academic and research partner, and EGYMAG Biotechnology as the Egyptian industrial partner. Zagazig University conducts higher education, scientific research, innovation, and community service, with relevant expertise in biological, chemical, and environmental sciences. <u>EGYMAG Biotechnology</u> developed an insect-based platform (BSFL) to upcycle organic waste into insect protein, fat, insect-based fertilizers, chitosan, and oils. Each Tone of organic waste processed with BSFL emits 35 kg co ₂ eqv VS landfilling 400 kg co ₂ eqv.
Date of establishment	Zagazig University was established in 1974, EGYMAG Biotechnology was established in 2018.
Ownership (if public and traded, add stock exchange and ticker symbol)	Industrial partner: EGYMAG Biotechnology, a privately owned limited liability company (LLC). Academic/research partner: Zagazig University, a public Egyptian university.
Total number of employees	Industrial partner: :30

Number of employees in R&D	EGYMAG Biotechnology:5
Key products sold or services provided	Zagazig University, Faculty of Science • Higher education and postgraduate training. • Scientific research, laboratory analysis, and consultancy. • Technology development, knowledge transfer, and community-oriented innovation. EGYMAG Biotechnology • Sustainable agro-products: BSF larval protein meal for aquaculture and poultry feed, and nutrient-rich frass fertilizer. • Bioenergy feedstocks: BSF lipids and crude oil for biodiesel development and potential future biofuel applications. • Biobased materials: Insect-derived chitin and chitosan, with ongoing investigation of BSF-derived lipids as potential carbon feedstocks for bacterial production of PHA-based bioplastics.
Entity core technical competences	The Egyptian consortium combines expertise in insect biotechnology, biological sciences, and applied bioprocessing. Its core competences include: • Optimization of Black Soldier Fly (BSF) mass rearing and organic-substrate formulation. • Chemical characterization and waste-substrate bioconversion. • Characterization of BSF biomass, protein, lipids, and residues. • Extraction of insect lipids for potential renewable-energy applications. • Extraction and characterization of insect chitin and chitosan. • Biological and chemical evaluation of agricultural applications. • Laboratory evaluation of microbial conversion pathways using insect-derived co-products as potential feedstocks for biobased materials.
Key R&D programs and activities	• BSF bioconversion and sustainable production: Research on BSF biology, mass rearing, and the conversion of agricultural and selected organic residues into insect protein meal, frass fertilizer, and lipid fractions. The proposed collaboration will optimize environmentally friendly bioconversion protocols and assess their pilot-scale feasibility. • Valorisation of BSF co-products: Recovery and evaluation of BSF oil for biodiesel and other bioenergy applications, together with the investigation of microbial and lipid-based routes for biobased-material production. The project will also optimize eco-friendly chitosan extraction and evaluate chitosan-based applications in food, feed, and agriculture through laboratory testing.
Examples of accomplishments	• Principal Investigator of an ongoing STDF-funded research project on Black Soldier Fly (BSF) biotechnology and organic-waste valorisation, currently in its initial implementation phase. • Doctoral and postdoctoral research experience in insect biology and applications relevant to BSF biotechnology. • Initiation, in collaboration with EGYMAG Biotechnology, of an academic-industrial R&D framework for developing BSF-derived by-product applications in plant and animal nutrition

	and biodiesel-related research. Extraction and characterization of insect chitin and chitosan, including FTIR-based structural analysis and biological-activity evaluation.
Company strategic orientation	The Egyptian consortium aims to translate research into sustainable, industry-relevant technologies by developing and scaling a zero-waste Black Soldier Fly (BSF) biorefinery in Egypt. Its strategic priorities are to valorise organic waste, produce locally sourced insect protein for sustainable food and feed applications, develop agricultural inputs, insect-derived lipids, and biopolymers, strengthen circular-economy solutions, and establish international R&D partnerships for technology transfer and future market expansion in Europe and the Middle East.

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	A Spanish-registered industrial SME or technology-oriented company working in one or more of the following downstream processing and commercial application areas: - Sustainable food and feed: processing of proteins and alternative food or feed ingredients. - Bioenergy: processing of oils or lipids into biodiesel or other biofuels. - Chitin and chitosan: purification, modification, and development of chitosan-based products or biofibres. - Biopolymers and bioplastics: development of PHA/PHB or other biobased polymers. - Melanin-based materials: development of melanin-based coatings, films, packaging, or other protective materials. - Agricultural and other biobased applications: formulation, testing, scale-up, or commercialization of products derived from biological materials. The partner would be interested in evaluating and valorising BSF-derived materials supplied by the Egyptian consortium or, where applicable, by the Spanish partner.
Core technological competencies and expertise	Core technological competencies and expertise Relevant expertise in one or more of the following areas: - Protein and feed processing: processing and quality assessment of protein-rich materials for sustainable food and feed applications. - Lipid and biofuel processing: extraction, refining, and conversion of oils or lipids into biodiesel or other biofuels. - Chitin and chitosan technologies: purification, modification, and development of chitosan-based products and biofibres using wet spinning, electrospinning, or other fibre-forming technologies. - Biopolymer and PHA/PHB production: microbial or enzymatic processing of oils, lipids, or other organic feedstocks as carbon sources for PHA/PHB production, including polymer recovery and characterization. - Melanin-based materials: development of melanin-based coatings, films, packaging, or other protective biocomposites.

	• Agricultural and biobased applications: formulation of biofertilizers, biopesticides, seed coatings, active packaging, and other biobased products. • Scale-up and validation: pilot-scale process development, product testing, regulatory assessment, techno-economic evaluation, and market access. Experience with alternative or unconventional biological raw materials would be an advantage
Other essential qualifications (e.g.: ownership, track records etc.)	A Spanish-registered industrial or technology-oriented company that: • Is interested in participating in an ESIP joint R&D project and meets the applicable CDTI requirements. • May contribute relevant expertise, processing or testing facilities, pilot-scale capabilities, qualified personnel, technical data, or co-financing, where applicable. • Is open to international collaboration, technology development, industrial validation, and future commercialization of the project results.
If you have a list of companies with whom you are in contact or interested in contacting, please provide <u>contact details</u>	No confirmed Spanish industrial contact at this stage. We are seeking introductions through the STDF Egypt–Spain / CDTI partner-search mechanism. We are particularly interested in contacting Spanish companies working in one or more of the following areas: sustainable food and feed ingredients; lipid processing and biofuels; chitin, chitosan, and chitosan-based biofibres; microbial production of biopolymers such as PHA/PHB; melanin-based coatings, films, packaging, or biocomposites; agricultural formulations; and other biobased materials.
If you are interested in collaboration: please specify details and other important information you want to share with a potential company	We are interested in a joint R&D project focused on the downstream processing and commercial valorisation of characterized BSF-derived materials, including: • Protein-rich biomass for sustainable food and feed ingredients. • Lipids for biodiesel and other biofuel applications. • Chitin and chitosan for biobased products and biofibres. • Melanin for coatings, films, packaging, or other protective materials. • BSF-derived materials for microbial production of biopolymers such as PHA/PHB. The Egyptian consortium can supply relevant characterized materials and support their biological, chemical, and agricultural evaluation. The Spanish partner may contribute expertise in purification, formulation, product testing, pilot-scale validation, regulatory assessment, and commercialization. The partners will agree on intellectual-property, data-management, publication, regulatory, and exploitation arrangements during proposal preparation.
Interested areas of collaboration	• Agriculture and Sustainable Food Production • Renewable Energy • Environment sector
Specific R&D contribution you are seeking/offering	Specific R&D contribution you are seeking/offering • Characterized BSF-derived materials, including protein-rich

	biomass, lipids, chitin/chitosan, melanin extracts, and related co-products. • Expertise in BSF biology, mass rearing, organic-waste bioconversion, and biological, chemical, and agricultural evaluation. • Zagazig University: experimental design, material characterization, laboratory testing, and bioassays. • EGYMAG Biotechnology: process development, pilot testing, product evaluation, and market-oriented validation, subject to the approved project plan and available facilities. Sought from the Spanish partner: • Downstream processing and application development for protein and feed ingredients, lipids, chitin/chitosan, melanin, and other biobased materials. • Lipid upgrading and biofuel testing; purification or modification of chitin, chitosan, and melanin; and biopolymer formulation. • Expertise in microbial fermentation using oils or lipids as feedstocks for the production of biopolymers such as PHA/PHB. • Pilot-scale validation, product assessment, regulatory planning, techno-economic evaluation, and commercialization support. The Egyptian consortium will investigate the suitability of BSF-derived lipids as potential feedstocks for microbial biopolymer production. Together, the partners will develop and validate applications in sustainable food and feed, renewable energy, agriculture, and biobased materials.
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Academic partner

Signature: *Heba Hani Ramadan*
Name: Heba Hani Ramadan
Date: 22-9-2026

Industrial partner

Ahmed Rady



Dean of faculty
AHMED ASIKORA

