

**Search for a Spanish Partner for a
Bilateral R&D Project (this document will be shared with potential Spanish
companies)**

Organization	
Date of Request:	28/9/2026
Company name:	Deraya University
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SECTION 1: Your Company Profile

(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.)

Business Sector	Academic Pharmaceutical sector
Company mission or core functions	Academic and pharmaceutical research
Date of establishment	2010
Ownership (if public and traded, add stock exchange and ticker symbol)	Private sector
Total number of employees	400
Number of employees in R&D	Academic institutions
Key products sold or services provided	Undergraduate and postgraduate education; pharmaceutical and healthcare education

	and research; scientific research services; innovation and entrepreneurship support; professional training; community and sustainable-development initiatives; research collaboration with industry and external partners.
Company core technical competences	Pharmaceutical sciences and pharmacognosy; natural products research; phytochemical analysis; bioactive compounds and pharmaceutical formulation; nanotechnology and drug-delivery systems; biological and preclinical evaluation; analytical characterization; healthcare innovation; sustainability and circular-economy research.
Key R&D programs and activities	Research in natural products and pharmaceutical sciences; development and biological evaluation of bioactive formulations; nanotechnology and advanced drug-delivery systems; agricultural-waste valorization; healthcare innovation; sustainability research; entrepreneurship and technology-transfer activities; collaborative national and international R&D projects.
Examples of accomplishments	Development of research outputs and international scientific publications in pharmaceutical and natural-product research; implementation of research, innovation and sustainability initiatives; establishment of research and entrepreneurship activities; participation in national and international collaborative projects; development of community-oriented healthcare and sustainable-development initiatives.
Company strategic orientation	Strengthening research excellence, innovation and entrepreneurship; expanding national and international research partnerships; translating research into innovative healthcare products and technologies; supporting sustainability and circular-economy solutions; enhancing technology transfer and industry collaboration; and increasing the university's contribution to regional and international development.

SECTION 2: Partner of Interest

(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 industrial company with established expertise in biomedical materials, advanced wound-care technologies, hydrogel development, biomaterials, medical-device development, or related healthcare technologies. The ideal partner should have industrial R&D, prototype-development and scale-up capabilities and an interest in developing innovative wound-care products for diabetic foot ulcers and other chronic wounds.
Core technological competencies and expertise	Biomedical polymer and hydrogel engineering; formulation and crosslinking of advanced hydrogel systems; bio-adhesive wound dressings; incorporation of bioactive/nano-formulated ingredients into polymeric matrices; mechanical and physicochemical characterization; swelling, moisture management and water-vapor transmission optimization; sterilization technologies; pilot-scale manufacturing; medical-device quality systems; regulatory and CE-marking readiness; and EU market access and commercialization.
Other essential qualifications (e.g.: ownership, track records etc.)	Spanish industrial company with demonstrated R&D and product-development capacity and relevant experience in biomedical materials, wound-care products, medical devices, biomaterials or related technologies. Previous experience in industrial scale-up, technology transfer, regulatory development and commercialization is highly desirable. The partner should be capable of participating in an international R&D consortium and contributing to joint IPR development and exploitation.
If you have a list of companies with whom you are in contact or interested in contacting, please provide contact details	Deraya University is currently seeking qualified Spanish industrial partners and is interested in contacting companies active in advanced wound care, biomedical hydrogels, biomaterials,

	biomedical polymers, medical-device development, sterilization and related healthcare technologies. Specific companies and contact details will be identified during the partner-search process.
If you are interested in collaboration: please specify details and other important information you want to share with a potential company	The proposed collaboration will be developed under the STDF–CDTI Egyptian-Spanish Innovation Programme (ESIP) for a 24-month bilateral R&D project. The project aims to develop a bio-interactive nano-hydrogel patch for diabetic foot ulcer management by combining standardized bioactive fractions obtained from selected agro-industrial plant residues with an advanced hydrogel platform. The Spanish industrial partner will lead hydrogel engineering, prototype optimization, sterilization feasibility, scale-up and EU regulatory/market-readiness activities. Deraya University will lead biological and translational research, including in vitro evaluation, animal diabetic-wound investigations and preparation of the scientific evidence package supporting subsequent clinical investigation. Detailed botanical identities, chemical markers and proprietary extraction/formulation information will be disclosed only under an appropriate confidentiality/NDA framework.
Interested areas of collaboration	Advanced wound-care technologies; diabetic foot ulcer and chronic-wound management; biomedical hydrogels; biomedical polymers; bio-adhesive wound dressings; nano-formulation/hydrogel integration; controlled-release systems; biomaterials and tissue regeneration; sterilization; stability testing; pilot-scale manufacturing; medical-device regulatory strategy; CE-marking readiness; EU market access; technology transfer; intellectual-property development and commercialization.
Specific R&D contribution you are seeking/offering	The Spanish partner is expected to contribute to: (1) optimization of the

	hydrogel polymer matrix and crosslinking strategy; (2) integration of the selected nano-formulation into the hydrogel; (3) optimization of mechanical strength, elasticity, swelling, adhesion, moisture retention and water-vapor transmission; (4) development of scalable prototype manufacturing and finishing processes; (5) evaluation of gamma and/or electron-beam sterilization; (6) assessment of stability and product performance after sterilization; (7) development of quality specifications and technical documentation; (8) EU regulatory pathway and CE-marking readiness assessment, subject to final product classification; and (9) commercialization and European market-access strategy. Deraya University will contribute biological validation, including in vitro cytocompatibility, antimicrobial/anti-biofilm studies, diabetic-wound animal investigations, histopathological assessment, wound-healing-related biomarkers and translational preparation for subsequent clinical investigation.
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Project Title:

Valorization of Agro-Industrial Plant Residues into Bio-Interactive Nano-Hydrogel Patches for Accelerated Diabetic Foot Ulcer Healing

Challenge:

Diabetic Foot Ulcers (DFUs) are a major complication of diabetes, associated with persistent inflammation, oxidative stress, impaired tissue repair, reduced vascularization, and a high risk of bacterial and biofilm-associated infection. At the same time, agricultural and agro-industrial processing generates substantial quantities of plant residues that remain underutilized despite their potential as sources of high-value bioactive molecules.

A major challenge is the gap between laboratory-scale extraction of bioactive compounds and the development of a standardized, scalable, quality-controlled wound-care product.

Scope of the R&D Project:

The project aims to establish an integrated circular-economy platform that converts selected agro-industrial plant residues into standardized bioactive fractions and subsequently into a bio-interactive nano-hydrogel wound patch for diabetic wound management.

The R&D activities will integrate:

- Green and scalable extraction of bioactive fractions from selected agro-industrial plant residues.
- Phytochemical profiling and chemical standardization using analytical technologies such as HPLC-DAD, LC-HRMS, and NMR.
- Nano-encapsulation to improve the stability, dispersion, and controlled release of selected bioactive fractions.

- Incorporation of the nano-formulation into a bio-adhesive Chitosan/Alginate/PVA hydrogel platform.
 - In vitro evaluation of safety, antimicrobial, antioxidant/anti-inflammatory-related and wound-healing activities.
 - Preclinical evaluation using an appropriate diabetic wound model, including wound closure, tissue regeneration, collagen deposition, angiogenesis-related markers, and histopathological recovery.
 - Optimization and pilot-scale manufacturing of the developed hydrogel patch.
 - Evaluation of sterilization, quality-control, regulatory, and commercialization requirements for the Egyptian and European markets.
 - Development of a joint IPR, exploitation, and commercialization strategy.
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The project is designed as an Egyptian Spanish industry-driven R&D collaboration, with complementary roles for Deraya University as the scientific and biological lead, an Egyptian industrial partner responsible for green extraction, standardization and Egyptian manufacturing, and a Spanish industrial partner contributing advanced hydrogel engineering, sterilization, and EU market-readiness expertise.

The project is planned for **24 months**, with the objective of progressing from laboratory-stage proof of concept toward a validated prototype and pilot-manufacturing readiness.

Signature: Nourhan



Name: Nourhan Hisham Shady

Date: 28/9/2026