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

Organization	Alexandria University
Date of Request:	October 2026
Company name:	Chemistry Department, Faculty of Science, Alexandria University, Egypt
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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	Higher Education and Scientific Research Faculty of Science, Alexandria University
Company mission or core functions	To advance education and scientific research, develop scientific knowledge and expertise, and contribute to community service through research, innovation, and collaboration.
Date of establishment	1942
Ownership (if public and traded, add stock exchange and ticker symbol)	Public university faculty operating within Alexandria University, a public educational and research institution.
Total number of employees	1,254 employees, including faculty members, teaching assistants, administrative staff, and workers.
Number of employees in R&D	806 Employees
Key products sold or services provided	Undergraduate and postgraduate education; scientific research; laboratory and analytical services; and community and industry engagement.
Company core technical competences	Chemistry and related scientific disciplines; laboratory research and analysis; materials characterization; environmental and water-related research; and the development of sustainable chemical technologies.

Key R&D programs and activities	Research on sustainable water-treatment technologies, including natural-polymer-based scale inhibitors; collaborative research with industry and other research institutions; development and evaluation of prototypes; and dissemination of research findings through publications and intellectual property.
Examples of accomplishments	An Egyptian research team has developed a promising, environmentally friendly scale-inhibition technology based on biodegradable natural polymers for potential application in desalination plants and industrial cooling-water systems. The technology has reached TRL 7, as reported by the research team. The group has also obtained four patents and published more than 100 research papers.
Company strategic orientation	- Developing sustainable, nature-based water-treatment technologies. - Strengthening industry partnerships and pursuing joint research projects. - Advancing high-impact chemistry research through publications in leading scientific journals and competitive research grants. - Providing undergraduate and postgraduate education in Chemistry.

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 the Ideal Technology Partner	We are looking for an established Spanish company working in water treatment, desalination, membrane-based separation technologies, or industrial water management. The ideal partner will have hands-on experience with reverse osmosis (RO) desalination plants, industrial cooling - water systems, or related water-treatment applications. It should also show a clear interest in developing and adopting environmentally sustainable scale control solutions. Preference will be given to companies that have access to operational water treatment facilities, or pilot-testing infrastructure. Ideally, they will also have the technical and commercial capabilities needed to validate, scale up, and commercialize innovative industrial technologies.

Core technological competencies and expertise	The prospective partner should have expertise in water desalination technologies, particularly reverse osmosis (RO); and in mineral scale formation and control. Relevant knowledge also includes water chemistry and membrane performance; industrial cooling water treatment; antiscalant evaluation, and water-treatment process optimization. Experience with laboratory, pilot-scale, and industrial-scale testing is highly desirable. Additional expertise in product formulation, environmental performance assessment, and technology scale-up from pilot testing to industrial application would be a significant advantage.
Other Essential Qualifications (e.g.: ownership, track records etc.)	The partner should have a proven track record in: Water treatment technologies, desalination applications or industrial research and development. Access to suitable laboratory facilities, pilot plants, or operational reverse osmosis (RO) and industrial cooling-water systems is highly desirable. The following would be additional advantages: - Experience in European or international research and development projects (e.g., Horizon Europe or PRIMA), - Collaboration with research institutions, - A clear pathway toward industrial implementation and commercialization
If you have a list of companies with whom you are in contact or interested in contacting, please provide contact details	Not available at this stage. We would welcome suggestions of suitable Spanish companies.
If you are interested in collaboration: please specify details and other important information you want to share with a potential company	The Egyptian research team has developed a promising environmentally-friendly scale-inhibition technology based on a blend of biodegradable natural polymers. It is intended for-desalination plants and industrial cooling-water systems. The technology targets mineral scale formation, including carbonate and sulfate scales, and offers a potentially more sustainable alternative to conventional synthetic scale inhibitors especially in food and pharmaceutical industries. The proposed collaboration would combine the Egyptian team's expertise in formulation development and scale-inhibition research with the Spanish partner's industrial experience, testing infrastructure, and market knowledge.

	Potential joint activities may include formulation optimization, comparative performance testing, and pilot - and industrial scale validation. They also include environmental assessment, and preparation for technology transfer and commercialization. Particular attention may be given to applications where environmental compatibility and s strict product - safety requirements are critical such as process water in the food and pharmaceutical industries. Any such use would depend on application-specific validation and the relevant regulatory approvals.
Interested Areas of Collaboration	- Joint R&D of environmentally sustainable friendly scale inhibitors for desalination and industrial cooling -water systems. - Optimizing formulations for different water compositions and operating conditions. - Performance validation at laboratory, pilot, and industrial scale. - Evaluating scale - control efficiency, membrane compatibility, and operational performance. - Assessing biodegradability, environmental compatibility, carbon footprint, and relevant safety requirements. - Technology transfer, process scale-up, and preparation for commercial deployment. - Jointly developing validation protocols and technical documentation to support industrial adoption.
Specific R&D Contribution You are Seeking/Offering	The Egyptian research team is seeking a Spanish industrial partner validation to help validate the technology through: • **Industrial testing:** access to suitable water-treatment facilities and representative operating conditions. • **Operational data:** Sharing relevant process data, subject to confidentiality agreements and applicable data-access restrictions. • **Independent performance assessment:** Evaluating the technology under operating conditions representative of Spanish and European industrial applications. • **Comparative benchmarking:** Testing the formulation against selected commercially available scale inhibitors.

	• **Compatibility and environmental assessment:** Evaluating membrane compatibility, operational implications, and environmental performance using appropriate testing protocols. • **Optimization and scale-up:** support for formulation refinement, process development, and the move from pilot-scale testing to industrial application. • **Commercialization and regulatory guidance:** Advising on relevant market requirements, regulatory regulatory considerations, potential customers, and routes to market. The Egyptian team will contribute its expertise in natural-polymer formulation, scale-inhibition research, and technology development. Responsibilities, work packages, milestones, deliverables, intellectual-property arrangements, and any associated costs will be agreed between the partners
Title of the Project & Abstract	Title: Environmentally Sustainable, Low-Carbon-Footprint Scale Inhibitors for Industrial Application Abstract: The project aims to validate and advance an innovative scale-inhibition technology based on a biodegradable natural-polymer blend developed by an Egyptian research team. The technology is designed to reduce carbonate and sulfate scale formation in desalination plants and industrial water systems, including cooling-water circuits. It also seeks to lower the environmental and carbon footprint associated with conventional synthetic scale inhibitors. The collaboration will combine the Egyptian team's expertise in formulation development and scale-inhibition research with a Spanish industrial partner's capabilities in operational testing, performance evaluation, and market development. Joint activities will include: - formulation optimization - benchmarking against selected commercial products - laboratory and pilot-scale testing

	- where feasible, validation under industrial operating conditions The project will also study membrane compatibility, and environmental performance, including a comparative carbon-footprint assessment. It will also identify what is needed for scale-up and industrial adoption. The expected outcomes are a stronger evidence base for the technology's performance and suitability, and a clear pathway to technology transfer and commercialization in Spain, Europe, and other potential markets.

Signature:



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