

INTERNATIONAL PROJECT		Project under Management <input type="checkbox"/>
Summary Form:	Agreement Reached <input type="checkbox"/>	
Input date:	Country of origin: India Country of Interest: Spain	

✓ <u>Information of the company requesting the partner search service</u>							
Name of the company				Sahifab private limited			
Contact Person (full name, position)				Dr. Namrata Sahi			
Address				B 93 Prashant Vihar Delhi			
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Last exercise Revenues M\$		Number of employees		Year of Constitution		Social Capital M\$	
Last exercise Revenues M\$	16145	Number of employees	08	Year of Constitution	2022	Share Capital M\$	1200

Firm profile: main activity, sector, market position, main product or service, previous R&D experience, etc.

Sahifab

Sahifab is a registered Pvt ltd women startup company set up under company act 2013 (CIN: U18109DL2022PTC399531) on 2nd June 22. The primary objectives is to convert agricultural stem waste materials like industrial hemp and nettle stem, etc. into commercial viable textiles fibres and fabrics. Sahifab pvt ltd. is involved in sustainable wet processing of natural fibres especially Industrial hemp. Sahifab company is first startup company in India for developed Industrial hemp yarn by wet & dry spinning technology.

Initially, stems are decorticated from indigenous developed decorticator machine. In the innovative process, the agricultural stems are decorticated by indigenously developed decorticator machine. The 1/3rd fibre & 2/3rd hurds are obtained by this decortication process. It is then processed with different types of the bacterial-based enzyme to dissolve pectin and other substance to make fine yarn. The Company is committed to research and development on sustainable natural fibres for processing and innovative textile based product diversifications. The end products are cottonised fibre, digitally printed non-woven fabrics. Home textiles and apparel.

The quality of process fibre improved from traditional retting system. The improved process has opened gateway of many textile, composite and other Industrial applications.

These processed fibers are used in paper, carpeting, home furnishing, construction materials, insulation materials, and auto parts and composites.

Based on this critical evaluation of the state-of-the-art, it can be stated that Industrial hemp has found in high-performance composites in the short-to-medium term by process optimization.

Sahifab has following state of art infrastructure

Decorticator machine Fibre cutting machine, HTHP degumming machine, Padding mangle modified carding machine etc.

The experienced team members are Dr. Namrata Sahi Director, PhD+5 years Mr Sandip Sen+22 years CEO Ms. Anita Sharma Product Development 5+ years and Ms. Aparna Sahi MBA+ 5 years Company turnover (2022-23) 13.72 lakhs Employee Strength: 8 members

✓ Information of the Technology Collaboration Project

Project idea, description of project objectives and type of collaboration wanted

Industrial Hemp bioplastics are considered more environment friendly and the potential to reduce the negative impact of plastic waste on ecosystems as compared to petroleum-based traditional plastics.

In this research project, Industrial hemp is blended with Polylactic acid and other biodegradable materials for making hemp bioplastics by injection & compression moulding techniques. these materials offer a wide range of properties and characteristics suitable for various applications in the Industry.

• **Advantages of hemp bioplastics**

Hemp bioplastics offer several advantages over conventional plastics and even other types of bioplastics. Some of the key advantages are:

- Reduced Carbon Footprint:
- Biodegradability and Composability:
- Renewable Resource:
- Conservation of Fossil Fuels:
- Minimized Ecological Impact:

• **Applications of hemp bioplastics**

- Packaging and Single Use Products:
- Automotive Industry:
- Textiles and Apparel:
- Construction and Building Materials:
- Electronics and Consumer Goods:

• **Technological innovations**

Enhanced Material Properties: Ongoing research is focused on improving the material properties of hemp Bioplastics to match or exceed those of traditional plastics. Sahifab(brief note enclosed) is working on enhancing tensile strength, flexibility, heat resistance, and durability through various techniques such as blending with Polylactic acid and other natural biopolymers in different aspect ratios, incorporating reinforcements, and optimizing processing methods.

Composite techniques involving the combination of Industrial hemp fibers with natural resins or bio-based additives further expand the range of applications and improve overall performance.

Chemical and mechanical processes are being explored to extract cellulose from industrial hemp fibers and convert it into usable bioplastics. These processes involve breaking down the cellulose into its constituent elements, such as glucose, and then polymerizing it to form Bioplastics. Research work is being explored on refining these methods to optimize efficiency and scalability.

- **Research and development in Industrial hemp bioplastics**

Continued research and development efforts are crucial to advance the field of Industrial Hemp Bioplastics. This includes improving material properties, exploring new applications, and optimizing manufacturing processes. Collaboration between Spain, Industrial hemp farmers and manufacturers can facilitate knowledge sharing and drive innovation in the field. Joint efforts can accelerate research, promote innovation, address challenges, and create a supportive ecosystem for the growth of the Industrial hemp Bio-plastics industry. Partnerships with industries and businesses across different sectors can drive the adoption of hemp bioplastics in a wide range of applications.

Expectations of Spain company

- 1) Different varieties of Industrial hemp stems

Deliverables from India

- 1) Extracted fibre from given stem
- 2) Developed bioplastics packaging materials
- 3) Developed hemp leather
- 4) Different grade of Textiles materials

Estimated budget of the project (For internal formation use only)

US \$ 120,000

Estimated Foreseen Budget M€		New Partner contribution M€	Different varties of agricultural waste material after extracting CBD US \$ 10000
Public Funds %		Funding %	

✓ Profile of the partner wanted: activities to do by the new partner

Summary of the activities to be developed by the partner. Please be as specific as possible.

Criteria required from the partner (expertise or know how in a specific area, technical equipment needed, etc.)

industrial Hemp stem after extracting CBD and other requirements