Value added products (Cellulose and Amorphous Silica) from rice husk

APPLICATION

The synthesized silica powder can be used in healthcare, petrochemical, plastic, food processing and brewery industries. The cellulose powder can be used as Processed food texturizer, Instant Beverages gelling agent, Cosmetics fat substitute, Tablet manufacturing binder, etc.

COMPANY NAME

Pro-Biokem India Pvt Ltd

FOUNDERS' NAME

Mahhamad Gulebahar Sheikh
Baisun Nesha

TECHNOLOGY READINESS LEVEL (TRL)

TRL: 8 (The products are currently under commercialization stage)

INTELLECTUAL PROPERTY

A process for cellulose or silica extraction/isolation from raw rice husk, Application No: 201831027208

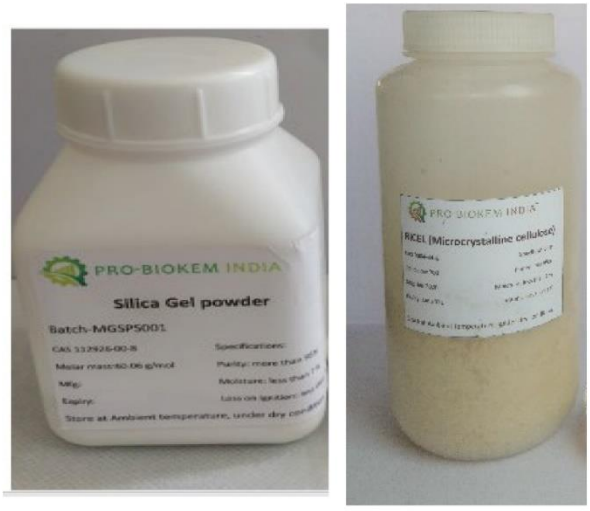
PROBLEM ADDRESSED

India is the second largest rice growing country in the world. A large quantity of rice husk is generated as a by-product in Rice mills during the milling process, which is used as solid fuel, which leading to wastage of naturally produced valuable Biochemical/ fine chemical products like cellulose and amorphous silica. Burning rice husk has a greater environmental footprint. Currently available cellulose powder is largely produced from wood pulp, using KRAFT Process, which is highly polluting and utilizes wood as a feed stock leading to deforestation. Currently available synthetic amorphous silica is manufactured from sand (crystalline silica). Sand in crystalline powder form is a well-known health hazard (Silicosis) for operating personnel and poses health hazard to the nearby localities

ABOUT THE TECHNOLOGY

Pro-biokem has developed a process to extract cellulose and silica from raw rice husk. The proposed process has already been developed in pilot scale, to isolate Cellulose and amorphous Silica in homogenous form with high purity and yield. The feed stock was processed to generate cellulose pulp. The cellulose pulp was further processed Bio/chemically to generate Microcrystalline cellulose. Silica was isolated from the pulp filtrate liquor. The proposed process will also be effective if rice stubble is used as a feed stock since the composition (qualitative and quantitative) of rice husk and rice stubble are very similar. The proposed process shall resolve majority of the above issues, while also generating local employment, minimizing energy use, reducing stubble burning and better management of agricultural and agro-Industrial waste.

PRODUCT IMAGE



USP

- Multi-product Isolation from single feedstock with wider applications
- Non-Wood/ Non-Cotton derived products
- Low pollution compared to currently used process technology
- Products derived from Agro residue/waste
- Offer better margin to supply chain
- Lower cost of feedstock and Production cost

END USERS/CUSTOMERS

Processed food industries, Pharmaceutical industries, Feed industries, Construction and paint industries, Breweries, etc.

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