

**Abstract:****Category: Leather Processing****Title: An integrated dehairing and fibre opening process for leather making**

Disclosed herein is an integrated process of dehairing and fibre opening using significantly reduced amount of water and chemicals, optionally in the presence of enzymes. The process has enormous application in leather processing industry as an environment friendly option with a potential of reduction of generation of effluent to the extent of 50-75%. Further, the process also ensures significant time economy, thereby enhancing the productivity without sacrificing the final quality of leather.

Indian Patent Application No. 202211064426

**Title: Multi coated smart leather and a process for the preparation thereof**

Disclosed herein is a multifunctional smart leather exhibiting both electrical conductivity and magnetic field-response. It is prepared in a wide variety of colours without the use of synthetic or natural dyes or pigments by employing a layer-by-layer multicoating technique using magnetic and conductive substances. The leather has potential uses in the field of smart lifestyle products. It also finds application in the domains of electronics, sensors and allied sectors. The product is anticipated to have a multitude of applications in the leather products industry such as smart/interactive clothing, adhesive-free wall covering, sensors, conductive gloves/apparel, electromagnetic interference shielding, intelligent garments, magnetically controlled reed switches, and the like. Further, the process for the preparation of the said multi-coated smart leather finds application in leather processing industry to produce multifunctional specialty leather.

Indian Patent Application No. 202311021774

**Category: Leather Chemicals****Title: Acrylamide Polymer for Leather Processing and a process for the preparation thereof**

Disclosed herein is an acrylamide polymer characterized by its molecular weight in the range of 2000-5000 Da, the particle size of 80 to 200 nm, the zeta potential value of the polymer

being in the range of -15.78 meV to -25 meV. It is synthesized from a non-toxic biocompatible monomer. The polymer of the invention finds enormous potential application in leather processing industry as a synthetic tanning agent. It finds application in various stages of leather processing such as pretanning, rechroming, and post tanning, essentially as a filling agent as well as the chromium exhaustion aid. Further, the invention finds application in the leather industry as a replacement for formaldehyde and acrylic acid free phenolic and acrylic syntans. The invention also provides a process for the preparation of the said multifunctional polymer.

Indian Patent Application No. 202211031802

**Title: An encapsulated phase changing oil for cold insulation applications and a process for the preparation thereof**

Disclosed herein is an encapsulated phase changing oil, whereby an amino-aldehyde resin is employed for the encapsulation. The product exhibits phase changing characteristics that aids thermal insulation at a temperature around -50°C. The product finds application in leather processing industry for producing cold insulation leathers for applications in extreme cold climatic conditions

Indian Patent Application No. 202311020222

**Category: Vegan Leather-like-Material**

**Title: A plant based Leather like material for industrial applications and a process for the preparation thereof**

An eco-friendly and flexible vegan leather-like material with good strength is prepared using agricultural waste such as sugarcane straw, sorghum stem, sorghum straw, rice straw, wheat straw and Indian grass for use in textiles, leather, packaging and other life style product industries. The method comprises alkali hydrolysis augmented with gelling agent for destruction of cellulose, lignin and hemicellulose components of the agro waste. The alkaline hydrolysis process involves initial microwave irradiation based destruction followed by conventional thermo-mechanical heating followed by addition of eco-friendly polymer. The contents are poured in a mould and dried to yield flexible sheet. The sheets are surface coated employing typical leather finishing techniques. The disclosed process is based on zero discharge concept without discarding either liquid or solid waste into the environment. The final vegan leather-like sheet material is non-hazardous, eco-friendly and inexpensive that has applications in textiles, leather, packaging and other life style product industries.

Indian Patent Application No. 202211044777

**Title: Leather-like material and a process for the preparation thereof using wastes of agricultural and leather sectors**

Disclosed herein is a cellulose-based leather-like material prepared using solid wastes generated from agricultural activity and leather manufacturing process. This material finds potential application as a substitute for leather, and can be used for manufacturing leather products such as footwear, lifestyle leather products and garments. In other words, the invention finds wide application in leather and product industries. A simple process to prepare the material is also disclosed. It provides an economical option to effectively use agro and other tannery solid wastes as renewable sources to manufacture value added products, leading to a circular economy

Indian Patent Application No. 202211045097

**Title: Fruit based leather-like material and a process for the preparation thereof**

Disclosed herein is a fruit based leather-like material for application in fancy lifestyle and other consumer product industries. The material may contain upto 90% of fruit fiber. A process for the preparation of the material with different size/thickness ranges is also provided. It essentially involves pulping of the fibrous matter present in waste spoiled fruit, mixing the fruit pulp with polymer as well as other additives, followed by casting and drying. The process is based on zero discharge concept excluding the seed, into the environment. The final material, is flexible and exhibits good mechanical properties, adequate for small consumer products. The unique feature of the technology is that it leads to a value added non-hazardous, eco-friendly product that finds potential multiple industrial applications in textiles, leather, packaging and other life style product industries. The implementation of the process is possible with minimum investment. Indian Patent Application No. 202311010288