Latvia University of Life Sciences and Technologies

Intellectual property assets of the Latvia University of Life Sciences and Technologies (LBTU) available for licensing or commercial acquisition (2024):

National patents (Latvia)

No.	Title and executive summary	Inventors	Patent No.
1.	**ACOUSTICAL FINISHING BOARD AND METHOD FOR ITS MANUFACTURING** LBTU offers an innovative **acoustic finishing board** designed to enhance sound absorption and fire resistance in interior suspended ceilings. Featuring a gypsum plasterboard substrate with a foamed gypsum porous layer, this board delivers excellent sound absorption (Class C) across 200–4000 Hz and superior fire resistance (Class A2-s1,d0). The removable frame design ensures easy installation and adjustable thickness (10–100 mm) to suit specific acoustic needs. Ideal for commercial and residential buildings seeking improved acoustics and safety.	Juris Skujāns, Raitis Brencis, Andris Šteinerts, Edmunds Korzunovs, Kristaps Puļķis	LV 15085
2.	**FOOD PRODUCTS MANUFACTURING METHOD** LBTU offers a patented **method for producing semi-finished products from minced fish meat**, specifically small marine fish like sprat and anchovy. The process involves mixing minced fish with plant-based ingredients, fermenting, and freezing to create a high-quality, stable product.	Andrey Andreyevich Gorbatovsky	LV 15319

	Key features include: • Balanced ingredient composition with 24-27% plant-based materials, enzymes, and food additives • Use of a bone tissue softener and added food fibers for improved texture and consistency Suitable for fish processing industries seeking innovative, nutritious product solutions.		
3.	**SINGLE-ENGINE DUAL-AXIS DRIVING DEVICE WITH SUN FOLLOWING SOLAR PANELS** LBTU offers an innovative **single motor, dual-axis solar tracking device** designed to optimize solar panel orientation. The system features a sturdy frame, motor-reducer, and a shaft assembly with a clutch mechanism for engaging and disengaging panel rotation. Equipped with a manual drive for quick clutch control and an integrated solar radiation direction indicator for fast, precise zenith angle adjustment, this device improves solar tracking accuracy and efficiency.	Ilze Pelēce, Andrejs Sņegovs, Liene Kanceviča, Semjons Ivanovs, Henriks Putāns, Imants Ziemelis	LV 15465
4.	**END SWITCH LIMITING TURNING ANGLE OF SOLAR PANEL** LBTU offers a patented **solar panel rotation limit switch** that precisely controls motor power and direction at azimuth range limits. It adjusts automatically with panel tilt for optimal sun tracking and ensures reliable operation at both east and west stops. Ideal for enhancing solar tracker durability and efficiency.	Henriks Putāns, Imants Ziemelis, Ilze Pelēce, Andrejs Sņegovs, Liene Kanceviča, Semjons Ivanovs	LV 15468
5.	**MECHANISM OF PARALLEL TRANSFER** LBTU offers a patented **parallel transfer mechanism** featuring two interconnected parallelograms designed for precise, controlled movement. The system includes a guided slider with adjustable stops and a spring-loaded latch, enabling reliable cyclic operation via an attached actuator. This robust mechanism is ideal for applications requiring accurate parallel motion in automation, robotics, and material handling.	Ēriks Kronbergs, Edgars Repša, Mareks Šmits	LV 15506

6.	**THE METHOD OF PRODUCTION OF JUICE OBTAINED FROM HORSERADISH LEAVES AND ROOT** LBTU offers a patented **method for extracting juice from horseradish (Armoracia rusticana) leaves and roots**. The process involves freezing, thawing, crushing, and mechanically extracting the juice, followed by sublimation to preserve its high biological value. The resulting product serves as a natural antioxidant and preservative, ideal for use in the food industry.	Lolita Tomsone, Zanda Krūma, Ruta Galaburda	LV 15543
7.	**METHOD OF PREPARING FOOD-STUFF FROM BALTIC SPRAT (SPRATUS BALTICUS)** LBTU offers a patented **method to produce a product resembling traditionally matured anchovies, using Baltic sprats**. The process involves a unique layering and salting technique that replicates the flavor and texture of classic anchovy products. Ideal for fish processing companies seeking innovative, high-quality seafood offerings.	Mārtiņš Šabovičs, Sandra Muižniece-Brasava, Igors Šepeļevs, Mihails Šilovs	LV 15589
8.	METHOD OF PRODUCING LONG SHELF-LIFE FOOD PRODUCT FROM HIGH DEGREE OF READINESS FISH FILLET LBTU offers a patented **method for producing ready-to-eat, pasteurized fish fillet products with an extended shelf life of up to 6 months** at 4°C to 6°C storage. The process includes controlled thawing, drying, filleting, portioning into heat-resistant packaging, coating with a specially formulated sauce (pH 4.8–5.2), hermetic sealing with partial air removal, and pasteurization under pressure at 85±20°C for 35 minutes. This method ensures convenient, safe, and long-lasting fish products ideal for the food industry and retail markets.	Ilze Grāmatiņa, Sanita Sazanova, Janīna Ķīvīte, Mārtiņš Šabovics, Asnate Ķirse-Ozoliņa, Sandra Muižniece-Brasava, Normunds Reips	LV 15598

International patents

No.	Title and executive summary	Inventors	Patent No.
1.	**METHOD AND DEVICE FOR REMOVING WATER FROM BIOETHANOL BY COMBINED ADSORPTION AND DISTILLATION** LBTU offers a patented technology for efficient bioethanol dehydration tailored for the alcohol and biofuel industries. The solution combines a novel method and a custom-designed device, enabling simultaneous rectification and water removal through adsorption in a single integrated system. Key advantages of this technology include: • **Efficient water removal** from fermented mash distillate using a moist granular adsorbent layer. • **Continuous operation**, with automated adsorbent regeneration and reuse. • **Use of over-azeotropic alcohol solution** to optimize adsorption efficiency and energy balance. • **High-purity ethanol output** (97.5-98.5% vol.) with lower energy consumption compared to traditional dehydration methods. This technology provides a scalable, cost-effective, and energy-efficient alternative for bioethanol producers seeking to improve product purity and reduce operational costs. Technical documentation and support for implementation are provided.	Gunārs Brēmers, Anita Blija, Arnolds Šķēle, Gints Birzietis, Aleksejs Danilēvičs	EP2316549
2.	**DEVICE FOR SEMI-DRY CONGRUENT DEHYDRATION OF BIOETHANOL** LBTU offers a patented, state-of-the-art device for efficient bioethanol dehydration, designed to deliver high-purity ethanol with lower energy use. The system features an integrated dehydration block, adsorbent regeneration, and continuous granule recycling for seamless operation. Key advantages include: • **Enhanced ethanol purity and yield** • **Energy-efficient process with automated adsorbent recovery** • **Compact design for easy integration into existing facilities** This ready-to-license technology is ideal for biofuel and alcohol producers seeking to boost efficiency and sustainability.	Gunārs Brēmers, Ādolfs Ruciņš, Artūrs Baltiņš, Gints Birzietis, Kristīne Zihmane-Rītiņa, Arnolds Šķēle, Juris Bergs	EP2524722

Registered designs

No.	Title	Authors	Registration No.
1.	**Ceiling lamp with built-in smoke detector**	Sanda Stūrmane	D 15 911
2.	**Folding portable bench**	Ilze Stokmane, Una Īle	D 15 934

Registered know-how

LBTU offers a comprehensive portfolio of 15 specialized DNA molecular marker panels to support and enhance sheep breeding programs throughout Latvia. These panels focus on key genetic traits in Latvian Darkheaded and other locally reared sheep breeds, enabling precise and informed selection for improved growth, feed efficiency, carcass quality, and reproductive performance.

Each panel is accompanied by detailed descriptions, providing breeders with in-depth knowledge on the genetic markers' functions, their impact on economically important traits, and best practices for application in breeding programs.

No.	Title	Authors	Registration No.
1.	**Panel of DNA markers for feed conversion ratio in Latvian Darkheaded breed lambs**	Ilva Trapiņa, Natālia Paramonova, Samanta Pļaviņa, Daina Kairiša	10274
2.	**Panel of DNA markers for relative growth rate in Latvian Darkheaded lambs**		10325
3.	**Panel of DNA markers for Kleiber ratio in Latvian Darkheaded lambs**		10280
4.	**Panel of DNA markers for residual feed intake in Latvian Darkheaded lambs**		10288
5.	**Panel of DNA markers for residual body weight gain in Latvian Darkheaded lambs**		10290
6.	**Panel of DNA markers for residual intake and gain ratio in Latvian Darkheaded lambs**		10327
7.	**Panel of DNA markers for feed conversion ratio in lambs of sheep breeds reared in Latvia**		10331
8.	**Panel of DNA markers for relative growth rate in lambs of sheep breeds reared in Latvia**		10353
9.	**Panel of DNA markers for the Kleiber ratio in lambs of sheep breeds reared in Latvia**		10355
10.	**Panel of DNA markers for residual feed intake in lambs of sheep breeds reared in Latvia**		10357
11.	**Panel of DNA markers for residual body weight gain in lambs of sheep breeds reared in Latvia**		10433
12.	**Panel of DNA markers for the residual intake and gain ratio in lambs of sheep breeds reared in Latvia**		10435

13.	**Panel of DNA markers for body muscle development in Latvian Darkheaded lambs**		10437
14.	**Panel of DNA markers for body fat layering degree in Latvian Darkheaded lambs**		10439
15.	**Panel of molecular DNA markers for maternal and paternal sheep breeds reared in Latvia**		10441