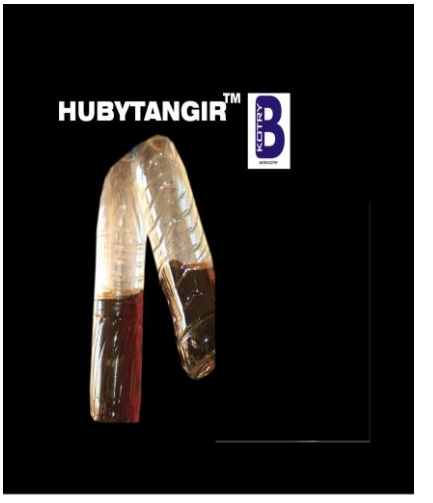
DATES & PALM WASTES CONVERTED TO *IoT* & WEARABLE Tech HALAL, Safe Body Strapping GAMECHANGERS



PATENTED PROCESS →



INTRODUCTION

TARGET MARKET

The next frontier of Internet Of Things is Wearables and so big and promising that the global players must be able to assure the buying customers of the safety of the strapping material to be put on human bodies using the attractiveness and convenience of the lightweight gadgets'. The Muslim world's conquered skills in Animal Husbandry and Religious affinity to kind animal treatment must be converted to global player in the emerging IoT and Wearables massive markets for Halal imputs from Muslim to the whole world.

We need to expose our bodies to the green and safest strap materials for human bodies and it's LEATHER.

Leather industry's new frontier in wearable technology products ; smart watch & electronics, medical/health/fitness and wellness, arm, wrist band, etc are set to explode the current leather market from the current US$ 79 Billion with additional US$ 70 Billion by 2025.

(See this 2015Report http://goo.gl/5lSyTl)

Wearable tech relies solely on Leather and the Leather must be greened up.

OUR BIG SOLUTION TO GLOBAL NEGATIVE ENVIRONMENTAL IMPACT OF LEATHER USING DATES & PALM WASTES

We've developed, prototyped and patented novel 60-minute fast acting biobased cellulose derived products which overcomes this menace with novel fast, odor-free and secondary waste value addition approach and product.

The current week-long incubation , slow acting, fouling and waste laden materials in Leather Dehairing processing like Sodium Sulphide and heavy metal agents based are harmful materials and they are posing great environmental challenges . sludge waste used as substitute for Phosphate builder in Detergents & Fertilizer.
Phosphates poison the environment via Eutrophication.
See Pix for Success story:

NOVEL PATENTED GREEN, SAFE & CHEAP LEATHER PROCESS SUCCESS REPORT

OUR GREEN PROCESS SHORTLISTED By SofinnovaParis For TOP 5 Best Global Renewable Chemistry 2015

SOFINNOVA PARTNERS

€4.8 B Evaluation For H2020 EU Program 2016

www.alientt.com

ALIEN LEADING TECHNOLOGY TRANSFER

Collaboration By African Start-up

KOTRY B BEREKOTRY

GREEN ODOR-FREE LEATHER PRODUCT READY FOR MARKET

OUR GREEN PROTOTYPE Phytochemically Screened By Federal Institute Of Leather Science- Nigeria NILES



http://nilest.academia.edu

OUR GREEN PRODUCT SUCCESSFULLY ENGINNEERED IN TO FINISHED Commercial Leather



Leather HERTAGE , Kano Nigeria

APPLICATION In Wearable Tech , Automotive & Aviation Industries Globally





Novel Tech as A Global Award Winner @ MakerFaire Rome 2015







Fastest & Safest Leather Odor –free Processor Made -In-Nigeria

Award Winning In ROME

Valuation in UK @ € 4.8 Billion

Final Commercially Deployed inn Kano -Nigeria



ISLAMIC SUPPORT BUSINESS CASE FOR THIS TECHNOLOGY

Islam Encourages Business

The Holy Prophet (SAW) has said:

"There are 70 parts of Ibadat. The best part of it is that of earning in a Halaal way, the best action is to work and earn livelihood by Halaal means. If a person earns by Halaal means then he will get the Thawab equal to the Prophets (A) on the day of Qiyamat."

The Shariah of Islam encourages Trade. There are 10 parts of earning, out of which 9 parts are in business.

GLOBAL TOP DATES PRODUCERS & GROWERS ARE ALL MUSLIM MAJORITY POPULATED COUNTRIES

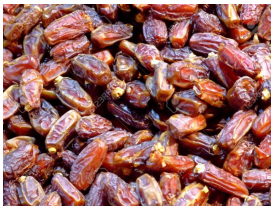
TABLE 14
Main countries producing dates : ALL MUSLIM COUNTRIES

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	% of world	% change 1991-2001
TONS						(thousand tones)							
World	3717	.3664.	4387.	4568.	4849.	501.5	4953.	5425.	5354.	5307.	5353		43
Egypt	603	604	631	646	678	738	741	840	906	1 007	1 102	20.6	67
Iran, Islamic Rep. of	634	578	716	774	780	855	877	918	908	900	900	16.8	42
Saudi Arabia	528	552	563	568	589	617	649	648	712	712	712	13.3	35
Pakistan	293	275	577	579	533	534	537	722	580	550	550	10.3	88
Iraq	566	448	613	676	881	797	625	630	438	400	400	7.5	-29
Algeria	209	261	262	317	285	361	303	387	428	366	370	6.9	75
United Arab Emirates	173	230	236	236	237	245	288	290	305	318	318	5.9	84
Oman	135	150	163	170	173	180	185	236	282	260	260	4.9	93
Sudan	140	142	130	138	160	168	174	175	176	176	177	3.3	26
Morocco	107	82	111	62	98	80	110	85	73	74	32	0.6	-31

Source: FAOSTAT

TECHNICAL

Fastest 60-minute & odor-free Unhairing leather , Wood Preserver (Anti-Termites) Product & Potent Antifungal Agent - HUBYTANGIR

Made from LIQUEFIED Dates  ***In Nigeria @ Berekotry Ltd***



The Latest Beam house-Leather Processing Product that cuts Incubation from 7-days to 60 minutes.

Hubytangir developed In Nigeria and already certified by the FEDERAL INSTITUTE OF LEATHER RESEARCH Zaria-Nigeria.

Our EU Partner : www.alientt.com (UK)

Market Valuation : €4.8 Billion

Products and Services: ***Berekotry Ltd*** *led by* ***Taslim Owonikoko*** *awarded a Patent No RP/NG/20014/299 in Nigeria. The patented technology* proposes a dual function aqueous product based all plant derived cellulose hydrolysate solution (fruits, fiber, sugar, farm wastes, tubers, grasses etc) called *Hubytangir* that will carry out both the unhairing and removal of extraneous flesh in the leather tanning and has multiple antifungal efficacy against fungal agents applicable in **Microbial** & **Pharmaceutical** applications viz: ***aspergillus flavus aspergillus niger and Rhizopus Sp*** based on Phytochemical screening test results conducted at the Nigeria Institute Of Leather Science & Technology led by ***Ejila A.A PhD***.



APPLICATION

The product is applied during beamhouse operations (the pre-tanning phase in the leather processing procedure) by diluting the solution with water in a ratio of 1:2 (chemical:water). The leather is then soaked in the diluted solution for roughly 60 minutes. Following this the hair and flesh can easily be removed by manually scraping it from the leather or by utilizing a mechanical drum present in most modern tanneries to carry out the activity. The extraneous hair and epidermis tissue can be completely removed following just one cycle soaking in the solution. Approximately 600ml (200ml *Hubytangir*, 400ml water) of the diluted solution is required for $5m^2$ of leather.

The product is composed of alkali salts of sulphate (SO42−), nitrate (NO3−), lignin and lignin-free cellulose derivatives. These conventional non-toxic popular ingredients replace the commonly used waste laden and toxic materials already explained, such as sodium sulphide and sodium hydrosulphide. The product is suited to use by all tanning factories. The 2-in-1 agent eliminates the need for collagen swelling and water pre-soaking which are standard phases to clean and moisturise the leather in the current tanning process. All other post-unhairing operations continue as per the standard industry procedure. 100% of the resultant waste from the process involving the *Hubytangir* product is then useable in creating

marketable detergents and fertilizers with surfactants such as sodium dodecylbenzenesulfonate and sodium laureth sulphate which are highly biodegradable. **The *Hubytangir* end product will be available as a 1 litre-bottled solution.**

Comparison with other available solutions: Current solutions include products using sodium sulphide and heavy metal agents are highly pollutant as they produce large amounts of sulphide waste which is toxic to health and difficult to dispose of. *Hubytangir* has a competitive advantage in that it is ecologically sound using no toxic materials and with waste that can be reused as a component of cleaning detergent. Additionally, *Hubytangir* is a more attractive alternative from an economic standpoint. The sodium sulphide solution sells on average for €4 per kg compared to the *Hubytangir* which sells on average at €11.25 per kg. However, given that it is diluted with 2 parts water to 1 part of the concentrated product, the price per kg of the dilute solution is €3.75 which is also equal to one litre of the solution. Enzymatic unhairing is an alternative and more recent method that has been explored as an ecological alternative solution[1]. Disadvantages of enzymatic unhairing when compared to the *Hubytangir* are that it is prone to causing bacterial putrefaction – resulting in odours – and is not as environmentally friendly (only 40% less sulphides when compared to sodium sulphide solutions). ***Hubytangir* is odour free and 100% biodegradable.** Enzymatic processes create difficulties such as being too vigorous resulting in thin and stiff hides leading to less valuable leather being produced. Furthermore it requires changes to be made to current tanning processes – unhaired hides will need to be tanned and dyed differently. Less than 10% of hides are unhaired using enzyme-assisted processes and sodium sulphide solutions remain the most favourable solution. *Hubytangir* is a more versatile alternative that can be adopted for use with no change required to be made to current practices.

Solution	Odourless	Unhairing duration	Reusable residues	Biodegradable
Hubytangir	Yes	30-60 minutes	Yes	Yes
Enzymatic agent	No	12-24 hours	No	No
Sodium sulphide solution	No	1/2 weeks	No	No

[1] http://www.sciencedirect.com/science/article/pii/S0959652610004087 See Reference

Concept and approach

Value Proposition:

For leather producers:

Value Proposition #1 - Cost savings: *Hubytangir* is cheaper than current market offerings. Sodium sulfide solutions sell roughly at €4 per kg while the *Hubytangir* solution sells for **€3.75**, both capable of unhairing the same quantity of animal hide. This is **€0.25 (or 6.25%) cheaper per kg of unhairing solution**. Further operational cost savings can be made since the *Hubytangir* contributes to faster processing.

Value Proposition #2 - Time Saving: The new leather unhairing agent by *Berekotry Ltd* removes hair from animal hides and skin in **less than one hour**. This is **at least 168 times faster** when compared to the standard one/two week-long procedure. As previously mentioned, *Hubytangir* innovates the current leather preparation practices by eliminating the pre-soaking and swelling steps.

Value Proposition #3 - Resource efficiency: Unhairing processes using th**e** *Hubytangir* product do not require collagenase and water which are commonly used resources in leather production for swelling and pre-soaking respectively. These activities no longer need to be carried out when using *Hubytangir*. Furthermore, *Hubytangir* requires that **only 0.33kg of the product be used to have the same impact as 1 kg of the sodium sulfide solutions**.

Value Proposition #4 - Increased profitability for leather producers: Waste and pollution reductions could be **worth over €930 million per year** in avoided greenhouse-gas emissions which will be integrated into carbon trading markets. Leather producers using *Hubytangir* could benefit from this future revenue.

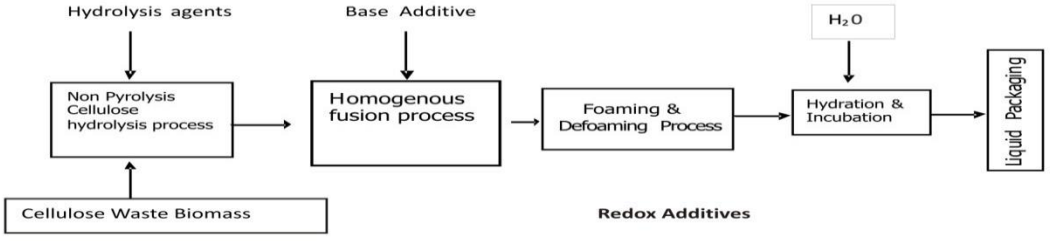
For society:

Value Proposition #5 - Environmentally friendly: The unhairing agent is non-toxic and environmentally friendly. Wood ash is a common input in the leather unhairing process and successful deployment of the *Hubytangir* technology will reduce unsustainable wood harvesting **by 11-17%.** *Hubytangir* also generates reusable residues which are biodegradable and can be used for creating environmentally friendly cleaning agents.

Current stage of development: So far *Berekotry Ltd* has developed an unhairing agent that has given results in a laboratory setting and in the relevant industrial environment, validating the effectiveness of the product for its intended purposes. *Hubytangir* currently has a **technology readiness** .

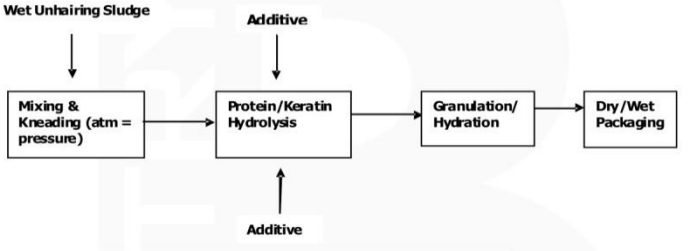
Milestone	Description	Results	Time
M1	Laboratory testing stage to discover a procedure for separating hair and extraneous tissue from animal hide using bio-based materials.	**TRL 1 & TRL 2:** Samples of hydrolysate solutions shown to have properties for the efficient unhairing of animal hides.	2006
M2	Proof of concept for a keratin hydrolysing unhairing solution for animal hides.	**TRL 3:** Feasibility demonstrated for the biodegradable solution.	2007
M3	Lab validation of the prototype: Collaborative phytochemical screening of a working prototype.	**TRL 4:** Product validated as a potent and odour free unhairing agent for animal hides.	2011
M4	*Hubytangir* prototype demonstrated as suitable for use by tanners.	**TRL 6** achieved.	2013
M5	Implementation of IP management strategy (ongoing).	Patent awarded for the production of an anti-fungal unhairing agent that operates in 30 minutes with low environmental impact.	2014

LEATHER UNHAIRING CHEMICAL PRODUCTION FROM CELLULOSE WASTE BIOMASS PROCESS FLOW DIAGRAM



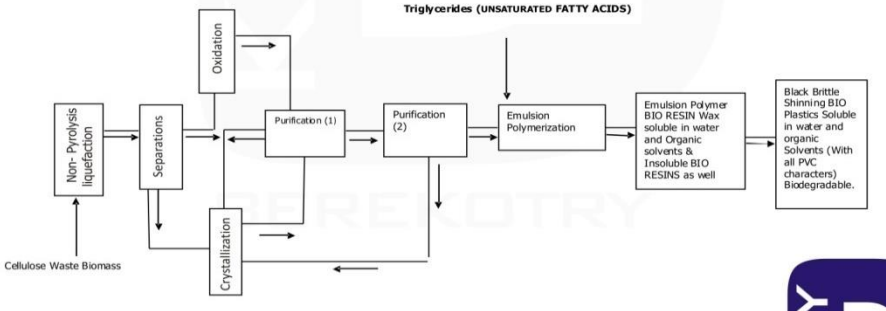
CONVERSION RATE = 100% (all process at ambient temperature)

PRODUCTION OF DETERGENT BUILDER FROM UNHAIRED WASTE SLUDGE LADDEN WITH UNHAIRING CHEMICAL FLOW DIAGRAM



CONVERSION RATE = 100% (all process at ambient temperature)

OUTE DIAGRAM - EMULSION BIOPOLYMER RESIN PRODUCTION FROM BIOMASS WASTE



All Processes Patented in Nigeria
Patent Owner - TASLIM OWONIKOKO
Berekotry Overseas UK Ltd Reg No 9737774
Berekotry Detergent Ltd RC - 607923

BEREKOTRY

THE PRIMARY AGRI-CELLULOSE LIQUEFACTION & DERIVATIVES PROCESS DIAGRAM - PATENTED

THE SUCCESSFUL INDUSTRIAL SCREENING & DEPLOYMENT HISTORY AS AT 20TH JUNE 2016

OUR GREEN PROCESS SHORTLISTED By SofinnovaParis For TOP 5 Best Global Renewable Chemistry 2015

SOFINNOVA PARTNERS

€4.8 B Evaluation For H2020 EU Program 2016

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Collaboration By African Start-up

KOTRY B
BEREKOTRY

GREEN ODOR-FREE LEATHER PRODUCT READY FOR MARKET

OUR GREEN PROTOTYPE Phytochemically Screened By Federal Institute Of Leather Science- Nigeria NILES



http://nilest.academia.edu

OUR GREEN PRODUCT SUCCESSFULLY ENGINNEERED IN TO FINISHED Commercial Leather



Leather HERTAGE , Kano Nigeria



SUCCESSFUL INDUSTRIAL APPLICATION of Liquefied Cellulose AS FAST – CLEAN –PRESERVED Unhairing Operation with Excellent Finished Leather @ LEATHER HERITAGE LTD –Kano, Nigeria (*Attn:* Engr. Bashir of Leather & Allied Product Association Of Nigeria –LAPAN *Email leatherheritage@yahoo.com*





Fastest & Safest Leather Odor –free Processor Made -in-Nigeria

Award Winning In ROME

Valuation in UK @ € 4.8 Billion

Final Commercially Deployed inn Kano -Nigeria

OUR SHOWCASE AT MAKER FAIRE ROME at THE EUROPEAN EDITION HELD IN Rome, Italy October, 2015 . Our showcase & Demo Earned us Global MAKER MERIT Award as shown in the pix

EFFICACY PROOF OF OUR PATENTED LIQUEFIED DATES & ALL AGRI-CELLULOSE AS POTENT ANTI-TERMITE & EXCELLENT WOOD PRESRVER



Vanguard, THURSDAY, MARCH 27, 2014 —29

Vanguard Learning

RESEARCH & DEVELOPMENT

Novel dual active antifungal & biocide extract

•dehairs leather efficiently

By EBELE ORAKPO

THE Federal Government's dream of making Nigeria world's hub for leather processing is being realised as a wholly indigenous start-up company, Berekotry Detergent Ltd. based in Iseyin, Oyo State, has discovered, through its cellulose fusion technology, a dual active antifungal and biocide extract with fast efficiency in leather dehairing, allegedly the fastest in the world now.

Speaking with *Vanguard Learning*, the Chief Executive Officer/Head of Research & Development of the company, Engr. Taslim Owonikoko, said the product is "a fast dehairing agent in leather processing with an incubation period of just 30 minutes, an ample improvement on the over seven days current practice in the leather processing industry globally."

De-hairing:

De-hairing as the name implies, is removal of hair from skins as one of the important operations in leather processing. Usually, this process involves the use of chemicals applied in huge amounts. Unfortunately, these chemicals often cause a lot of environmental pollution hence the need for an alternative.

*Taslim Owonikoko

*A piece of leather treated with de-haairing agent

*Aspergillus flavus-infected maize

*Aspergillus niger-infected onion

*Aspergillus flavus-infected tomatoes

Search for alternatives:

They found the alternative in enzymes which apart from doing the job within a shorter period, is more eco-friendly. "When the nod came from the Nigerian Patent Office on a novel process route for the synthesis of antifungal and antimicrobial agent from cellulose to valuable industrial products in 2008, it was like a starter's euphoria on the part of the Berekotry Ltd's Research & Development leadership. The patent granted in 2008 has been reinforced by the latest award of a second patent by the Nigerian Patent office in March, 2014," said an elated Owonikoko.

Antimicrobial agent:

and patented route for the production of new antifungal agent from cellulose via non-pyrolysis liquefaction. The extract was phytochemically screened and found to be inhibitors for three fungi species (*Aspergillus flavus, Aspergillus niger* and *Rhizopus species*) plus one bacteria species *Bocillus cereus.*

Aspergillus niger, a common food contaminant, causes a disease called black mold on certain fruits and vegetables such as grapes, onions and peanuts while *Aspergillus flavus* is a pathogenic fungus best known for its colonisation of cereal grains and legumes.

He expressed his appreciation and readiness to partner more with the National Office for Technology Acquisition and Promotion (NOTAP), who collaborated with his company to acquire the crucial patent captioned: *Antifungal agent from ligno-cellulose and lignin-free cellulose-based agro biomass materials via alkali fusion and oxidation of acid liquefied biomass cellulose materials* after a three-year global search and due dilligence.

He said some researchers at the National Institute of Leather Research, Zaria, conducted phytochemical screening of the synthesised extract with excellent results, noting that this achievement came at a time when bio-based materials are being applied for sustainability.

"There is a market of US$6 billion worldwide for the de-hairing agent which Owonikoko believes will benefit Nigeria immensely.

Although a relatively small company, Berekotry is doing Nigeria proud especially as the raw materials are basically agro biomass, things ordinarily seen as waste, thus adding steam to the Minister of Agriculture, Dr. Akinwumi Adesina's constant call for Nigeria to enhance its agricultural value chain.

Said Owonikoko: "The local raw materials we are using are from agricultural waste; we are talking of those things we burn down on the farms after harvest – corn cobs, groundnut shells, rice husks etc. Fortunately, these things are well distributed all over Nigeria."

The company also has patents in HSE Oil & Gas, lubricants, biochemicals, semiconductors, biocides, biosurfactants, inks & coatings, composites, etc.

PUBLICATION OF RESEARCH SUCCESS STORY BY National Daily Newspaper (See online version

http://www.vanguardngr.com/2014/03/novel-dual-active-antifungal-biocide-extract/ **)**



Read more from link :

http://wp.me/p2Ihnk-4

CONTROL EXPERIMENT RESULT FOR PAST 20YEARS: SPECIMEN STILL AVAILABLE SINCE 1996 . STILL INTACT TILL 2016

THE COMPANY & IT'S PROMOTER

Berekotry Ltd *is a multiple award winning private African start-up with more than a decade of R&D exploits and success stories with Multiple Patent that cover the biobased related industrial products' development. The company is engaging in both the pyrolytic and Non pyrolytic conversion of agro cellulose materials to several industrial products that are applicable in Automotive, Semiconductor, coatings, Lubricants, biolpolymers, wood preservatives, Leather processing, Life Sciences e.tc*

Berekotry Limited and its passionate President and Chemical Engineer of more than 20years innovation experience Mr Taslim Owonikoko are soul mates and it is difficult to separate him from his company or his numerous landmark inventions and Agro-based industrial innovations.

He is an energetic, inspiring, and talented enterprising inventor, who sees and understands exactly what Nigerians and the global community, need to oil the wheel of innovation system. He has garnered numerous awards from within and outside Nigeria in the last couple of years.

Some of which are, Innocentive-MIT-CBS Gift Certificate Award , USA, National Gold Innovation Award, Nigeria , Global Top 100 Best Innovators by General Electric Ecomagination Challenge, USA and recently capped with the Best Award Winner on National Science & Innovation awarded by the Federal Ministry Of Science & Technology in Conjunction with United Nations Development Program in Nigeria 2013 & Global Innovation Award at The Maker Faire Rome –Italy 2015. He has been nominated on industrial/Innovation tours to South Korea, India ,Ethiopia,UAE, South Africa etc

The company's Ceo emerged as one of the top Global R&D innovators awarded by General Electric (USA) of the GE ecomagination Challenge for his novel work on bio reinforced critical material alternative in the production of power semiconductors. The company was a finalist at the 2010 United Nations Science With Africa Challenge, Addis Ababa Ethiopia.

The company emerged the best Federal Government & UNDP-Award sponsored Innovative company in Ngeria 2007 & 2014 back to back.

We are Placed Beside Google in **ROME** Set-up In Action Maker Faire EU Edition





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http://www.flickr.com/photos/bkotry

www.berekotry.com