Technology Briefs

855
Biological neutralization of alkaline waste water of textile waste water
Dr (Mrs.) Rita Kumar
Scientist
Institute of Genomics and Integrative Biology (CSIR)
Delhi

Technology Description

The innovation is a bacterial isolate and the process for preparing the bacterial isolate used to reduce neutralize the pH in alkaline water. In other words the invention consists of bacteria that are used exclusively to reduce the alkalinity in water and the process to obtain said bacteria.

910
Energy cakes
Dr. Anil Kumar Singh
Director/Scientist
Energy Research Applications
Gurgaon (Haryana)

Technology Description

The technology is a method for converting industrial waste or biomass into a clean energy fuel called an Energy Cake. The Energy Cake can be burned by homes or small businesses to produce energy for cooking or manufacturing. The Energy Cake is produced using a small device that can take char waste that is produced in the creation of Sponge Iron and compress it into bricks which can then be burned. Char waste is the non-magnetic kiln discharge that is produced as waste in the creation of Sponge Iron. It contains usable carbon that can be burned as a heat source.

1012
Video communications for masses
Mr. Hardik Sanghvi
Founder & CEO
VMukti Solutions Pvt. Ltd.
Ahmedabad

Technology Description

The technology is referred to as VMukti Video Communication Suite. It is a web based video communications cloud software platform that enables streaming of live or recorded video that can be multicast to thousands of viewers simultaneously with 2-way interactivity and most importantly, with very low bandwidth requirements. The technology enables the convergence of voice, video and content over IP through a distributed peer-to-peer (P2P) platform. A user can record the live session & upload the video using auto upload functionality. It is available as software or software and hardware as a service. The interface is similar to common video sharing sites (e.g. YouTube, Vimeo, etc). In terms of pure features it might be compare more closely with ustream.tv or justin.tv, both live streaming sites. However, VMukti offers significantly lower bandwidth capability and better interactivity, almost like a web conferencing suite. It can be used for the educational purpose as it contains such features like whiteboard & online test. It can also be used as a

social networking product, with public/private chat features and pre-recorded video uploading.

1078
Clever texting
Mr. Abhijit Bhattacharjee
Founder and CEO
Luna Ergonomics
NOIDA

Technology Description

The initial application of this software technology, called "Clever Texting", presents a software based method for entering text messages into cell phones equipped with a numeric keypad.

The initial implementation is designed to work on Java based phones on the Nokia platform that operate on GSM networks.3.

The main differences between Clever Texting and other predictive text entry methods are:

- Clever Texting predicts the next character a user wants to enter based on the probabilities associated with how the language they are writing in works. Existing solutions predict the word the user is trying to type based on a dictionary in memory.
- Clever Texting presents the characters with the highest probability of being what the user wants next and maps them from the screen to the keypad in the most convenient location.
- Existing solutions rely on characters being assigned to specific keys on the
- device.
- Clever Texting can transliterate text from one Indian language to another
- Existing solutions do not offer transliteration capabilities
- What is different about Clever Texting is that it decouples the characters from the keypad.
- With Clever Texting, the user does not have to remember which characters are assigned to a specific key. Instead, Clever Texting assigns characters to keys based on the probability that a specific character is the next one the user needs.

1122
Natural formulation for chronic wound healing
Dr. Manu Chaudhary
Venus Medicine Research Center
Baddi

Technology Description

This technology is a synergistic concentrate of aqueous and oil extracts of poly herbal ingredients for the treatment of chronic wounds of varying sources. This proprietary blend of medical grade ingredients has been used in over 500,000 cases with near 100% effectiveness in treating non healing wounds from a variety of sources including; diabetic ulcers, amputee candidates (gangrene related), bedsores of varying levels and massive burn issues. The product actively is in use in India and seeking an effective path to market in the US.

1153
Man portable autonomous unmanned aerial vehicles
Mr. Ashish Bhat
Director
ideaForge Technology Pvt. Ltd.
Mumbai

Technology Description

The technology is a Man-Portable Autonomous Unmanned Aerial Vehicle designed to perform aerial surveillance & reconnaissance with minimal pilot supervision or training. This system has been developed to gain additional information of site of risky operations without endangering human lives and to make informed decision of tackling an emergency situation. This product can have significant contribution in addressing anti terrorist operations, hostage situations, border infiltration monitoring, search and rescue operations, aerial photography and more.

1175
Process for manufacture of sweetening catalyst Thoxcat ES
Dr. M.O.Garg
Director
Indian Institute of Petroleum (IIP)
Dehradun

Technology Description

Dr. M.O. Garg, Director, IIP along with his team of scientists has developed has generated a method for the production of a metallic catalyst, Thoxcat ES, which can be used by all refineries for the sweetening of LPG and lighter petroleum fractions.

1218
Shock wave treatment for bamboo
Prof. Jagadeesh
Professor
Indian Institute of Science
Bangalore -560012

Technology Description

The Shockwave treatment technology developed provides significant improvements in both the preservation and drying for industrial and commercial lumber. Using concentrated shockwaves in a chamber, Prof. Jagadeesh has significantly reduced the amount of time required to impregnate preservatives while maintaining the uniformity and consistency of application.

In addition to the lumber industry, the technology also offers benefits to oilseed extraction processes providing food-grade and therapeutic plant oils to a variety of commercial sectors. The shockwave technology is able to extract oil through concentrated pulses, similar to the drying process applied to lumber.

1223
Oral sustained release nano-drug for treatment of tuberculosis
Dr. Jitendra N Verma
Managing Director

Lifecare Innovations Pvt Ltd
Gurgaon

Technology Description

The technology is an oral sustained release nano-drug for the treatment of tuberculosis. The nano-drug is a long-duration slow release technology that allows therapeutic levels of the active drug to remain in the bloodstream for 7-15 days. The oral formulation is made with a biodegradable organic polymer (PLG) that allows the drug to be absorbed into organs through the lymphatic system and then released into the bloodstream slowly over time. Unlike conventional drugs that are metabolized over 24 hours, the polymer erodes slowly over time and allows the nano-particles of existing TB drugs to be released into the bloodstream more slowly than in conventional delivery methods.

1225
"MozziQuit" Multi-purpose Mosquito Trap
Mr. Ignatius Orwin Noronha
Managing Director
Leowin Solutions Pvt. Ltd.
Mangalore 575003

Technology Description

The subject technology is a device that attracts, traps, and kills mosquitoes. There are 4 key elements:

1) UV light source, color scheme, and heat source to attract mosquitoes
2) Vacuum to trap attracted mosquitoes
3) Heating element that kills mosquitoes
4) Container to collect dead mosquitoes

1242
Handheld digital retinal imaging system
Dr. Anand Sivaraman
Director
Remidio Innovative Solutions Pvt Ltd.
Bangalore

Technology Description

The technology is a handheld digital retinal imaging device that can be operated by unskilled medical workers. The device is a handheld, battery powered device that weighs less than one-half a pound (e.g., less than 450 grams), and uses optics that do not require contact with the eye. Non-medically trained person in a rural setting can use the technology. Images of the retina can be captured, stored, and then transmitted to a physician in another location. The device can be used to screen pre-term babies for Retinopathy of Prematurity (ROP) with the use of an infant interface, as well as to screen adults for diabetic retinopathy and ocular cancer.The device is easier to use and causes less trauma than competing products, such as Clarity's RetCam or an indirect ophthalmoscope. The infant interface ensures error-free imaging of a baby's retina by a community health worker. Because the device is a no-contact solution the eye has less trauma than devices currently available.

1251
A new method for detecting diabetic neuropathy and predicting foot ulcer development

Dr. C.Jairaj Kumar
Deputy Director/ Chief Research Coordinator
K.S Hegde Medical Academy
Mangalore

Technology Description

This technology is a new method for detecting diabetic neuropathy and predicting foot ulcer development. The technology would best be described as a diagnostic tool for measuring the progression of neuropathy (any neuropathy not limited to diabetes) and predicting foot ulcer development. It could also be useful for patient management for diseases like leprosy and multiple sclerosis in that all involve potential nerve damage. The technology involves both hardware and software algorithms. The key component of the hardware are the sensors which the patient places his feet. The software allows the physician to pinpoint locations on the feet to assess. Its mechanism involves these sensors then being able to detect micro movements in the feet with very fine precision. It detecting and graphing the micro-movements, the physician is then able to assess progression of neuropathy at pre-clinical stages and can adjust and tailor medications (or assess efficacy of medications being administered) and treatment regimens to proactively prevent foot ulcers from forming.

Its applications include:

1. Diagnose neuropathy
2. Predict foot ulcer development and thereby prevent amputation (removal of fingers etc)
3. Quantifying the efficacy of medication

1252
Active current conditioner

Mr. Shwetank Jain
Director
P2 Power Solutions
IIT Kharagpur

Technology Description

The P2 Power Systems IGBT based current conditioner is a programmable device that is designed to provide pure high fidelity, distortion free power to large electrical equipment. It is installed in facilities where such equipment is used, and it can be customized to provide high currents to loads such as inductive welders and three-phase motors. Because these types of loads require precise electrical delivery, any anomalous characteristics such as harmonic distortion or low power factor can introduce detrimental artifact into the facility's electrical equipment and those of neighboring electrical customers. Low power factor created by unbalanced factory equipment, for example, is often penalized by utilities who charge such customers to compensate for high reactive power in their system. Current conditioners using Insulated Gate Bipolar Transistor (IGBT) devices have been in broad use since the early 1980s. Though invented in 1969, they did not operate over a wide current range until 1982. The primary purpose of IGBT enabled current conditioners is to allow relatively fast semiconductor based switching that controls the amount of current delivered to electrical equipment. This capability is important not only to protect equipment from

potential damage due to malfunction, but also to deliver electrical current in compliance with the specifications of the connected machinery.

1260

Titanium based wonder gels for seaparation and degradation of orgainc dyes from aqueous solution

Dr. Mohan K.Dongare
Scientist
Ms. Shubhangi Umbarkar
Scientist
National Chemical Laboratory
Pune

Technology Description

This technology is novel titanium based gel absorbent and photo-catalyst for the separation of organic dyes from aqueous solution and its further photo-catalytic degradation using solar light. The gel, which is composed of 99% water molecules as well as titanium molecules, acts as a solvent for dyes in effluent water. The dye becomes mineralized and the water becomes clear. As an absorbent it absorbs the dyes. It is a photo-catalyst in that it requires UV light to be activated. This novel gel absorbs the organic dyes from effluent water and when exposed to solar radiation the absorbed dye is degraded. This technology will be helpful for removal of organic dyes and colored materials from effluents originated from textile and other industries generating effluent colored by dyes. It is a colloidal gel (polymerized gel) and not specifically a nano technology. The titanium gel being viscous, it settles at the bottom of the solution which can be recovered by decantation/separation by filtration. The product is an inorganic chemical that can be packaged, stored and utilized. It can also be prepared on site. The gel is capable of being re-utilized and recycled for up to 9 times. It is designed to address customers dealing with COD regulations.

1278

Next gen. holographic weapon sight

Dr. P.T.Ajith Kumar
President and Leading Specialist
Light Logics Holography and Optics
Thiruvallom

Technology Description

The subject of this technology is a holographic sight for a weapon, such as a rifle, an automatic weapon, or a handgun. Typical holographic weapon sights in the marketplace use silver halide, which is used in film, as the lens material. Instead of using silver halide, the technology is using a photopolymer. Photopolymers have been used in holograms and specifically with holographic weapon sights.