TRULSTECH

HIGH TECH PRODUCT DEVELOPMENTS
1990-2026

>>HEAT-UP WATER BY MAGNETIC EDDY CURRENTS, SUPPORTING FRONT SOLDIERS ON THE BATTLE FIELD<<

Front soldiers on the battle field, each soldier consume about 40 litre per 24h/7days a week, require hot water to keep clean on the battle field.

Another project concerned to very quickly heating-up a vehicle water cooling system in a few minutes, saving fuels and personal health driving a varm vehicle.

Another project concerned heating-up heavy trucks gearbox and transmission, especially in cold climate, saving fuels and less exhaust fumes from heavy trucks.

Both the systems were presented to Volvo vehicles and trucks.
The answer was; “if you manufacture the device units, Volvo will purchase it from Trulstech”.
Unfortunately, Trulstech wouldn’t dare risking such a capital investment without any financial guarantees that Volvo really would buy the products.

>>MAGNETIC DEVICE TO MAKE FUEL INJECTION IN ENGINES MORE EFFICIENT - REDUCING FUEL CONSUMPTION<<

By a special neodymium magnetic device mounted to the fuel injection it decompose the fuel to less sized drops. All fuel combustion takes place on the surface of the drops. The less drop size, the more surface for the chemical reaction, the more efficient combustion.
The device unit was undergoing a long time test cycle mounted in taxi vehicles in Stockholm with a reduced fuel consumption.

>>TECHNICAL DESIGN OF AN INLET NOZZLE TO FIT AND MAKE A DISC PUMP MORE EFFECTIVE<<

A disc pump from American Turbine became more effective for pumping concrete slurry with the special designed inlet nozzle. But also, by mounting

a neodymium magnetic device unit together with the pump, the concrete slurry became much more strength per weight and volume.
Tests were successfully made at Stråbruken AB in Sweden.

>>Electromagnetic Mixer, Technically Designed for Dipolar Materials in a flow.<<

By applying electromagnetic technology to mix dipolar material in flow, was proved to reduce the time required to mix dipolar materials in a flow.
The technical device unit was applied for a patent (PCT).

>> External Flow Measurement of Blood Plasma<<

By applying a special designed electromagnet device unit external mounted on a human arm or leg, makes it possible to measure the flow of the blood plasma in the human.

Unfortunately, the medical company in target didn't meet the project financial support requirement.

>>DECCA SYSTEM AIMED FOR POSITIONING IN THE AITIK OPEN DAYLIGHT MINE<<

Boliden Process Control requested a reliable sustainable positioning system in the Swedish open daylight mine named AITIK.
The Swedish Navy, before GPS and satellite navigation, the Navy used DECCA SYSTEMS to get their positions in the Swedish archipelago.
There were numbers of DECCA equipments stored in Navy's warehouse.
Instead of designing a new positioning system, DECCA equipments were recommended to be used in the AITIK mine.
BPC reduced the capital investment to get a high-tech positioning system to a very budget cost meeting BPC requirement on reliable function and sustainability.

TRULSTECH

>> LASER BEAM CRYSTAL DETECTION TO INDICATE MAX LOAD INSIDE THE MILL-DRUM FROM OUTSIDE<<

BPC had a problem with rubber antenna sensors to indicate max load inside the mill-drum. The boulder often destroyed the rubber antenna with an impact on the production. Even though the mill-drum was equipped with wire strain gauge mounted on the mill-drum rig, it became difficult to avoid production stops.
Instead a ring of crystals became mounted on the mill-drum shaft, on with a laser beam was illuminating the crystals.
When the load of boulder entered the mill-drum the heavy load caused an elliptical movement which was detected by the laser beam offset pointing, then it was time to close the mill-drum as max load had filled the mill-drum.
The software developed was not complex but easy to use and to decide the max load acceptable in the mill-drum.

>>HEAT-SENSITIVE FILM FOR DETECTING OF THERMAL ENERGY ABSORBED<<

Food packaging industries requested an ability to easily get info about the food condition inside a package, and not just rely on the best before date, given on the package.

By applying a heat sensitive film, on the package top surface, with the ability to change color, ref to the package external heat absorbed in combination with a time factor.

Such heat sensitive film had earlier been used in other product applications to change color depending on the thermal energy absorbed.

The food packaging industries got the project result in mission to integrate it into food packages.

>>DETECTION FILM FOR RECORDING OF EXPOSED UV-LIGHT<<

A UV-sensitive film strip aimed to absorb UV-radiation, and due to that changing color in relation to absorbed UV-radiation was used to become a less expensive disposable skin protection, targeting kids and people on sunny beaches to reduce the risk for absorbing too much UV-radiation.

TRULSTECH

>> EXTERNAL FUNDUS DIAGNOSIS BY A SPECIAL CAMERA MOUNTED ON A HELMET<<

The device video camera unit, developed to be used after a car crash with injured people, in mission to decide which one of the serious injured people to have the ability to survive, by external diagnosis of fundus.

In a car crash people often are clamped, that might cause a serious health problem, at the same time they are unclamped, the chock appears and might kill the serious injured one.

By external diagnosis of fundus it's possible to give painkiller injection to avoid the chock to happen when unclamped.
Siemens had a suitable video camera for the purpose. By connecting the video camera to a software equipped with a transmitter of radio signals of type GSM call with a direct call to emergency hospital live can be saved.

Tests were taken place that proved the functionality, but the military didn't release requested capital funds to set-up a production of the necessary equipments.

>>FIBRE OPTIC CABLE EQUIPPED FOR CONTINUOUS DETECTION AND ANALYSES OF WATER PURITY RESPECTIVELY SOIL. INFORMATION TRANSMITTED VIA RADIO, GSM CALL FUNCTION<<

A fibre optic cable equipped for continuous detection and analyses of water purity hidden among reed straw in sea water, transmitting information to a dedicated reception via GSM call.

The device unit proved to meet the demand on required analyses of water purity data in the archipelago of Stockholm.
But, the Swedish authorities didn't support the project financially to produce a number of the device units aimed for a long time practical tests in ocean water.

TRULSTECH

>>SOFTWARE OPERATED ROBOTIC POWERED PARABOLIC ANTENNA GIMBAL VAST SYSTEM<<

A 4 axis, each one equipped with electric servo motor drivers, with a special developed joints to reduce the internal generated mechanical frequencies opened-up for movements to follow a flying object from horizon (0°) over zenith (90°) to the opposite horizon (180°) without loosing the object in target. Together with the 4 axis it made it possible to adjust the transmitter polarity to keep the object in target all the time.

>>DEVELOPMENT OF A PHASE ARRAY ANTENNA OF TYPE MONOPULSE AS A PART OF A MOBILE GIMBAL ANTENNA SYSTEM OF TYPE VSAT<<

To be able to track a communication satellite 36,000 km over the equator from a marine vessel at sea with pitch, roll and yaw +/- 30 degree.
It put demands on a very short response time from sensors like inclinometers and accelerometers to get time to compensate for the off-set movements. Except of a CANBUSS system to meet the demands on short response time to adjust the off-position caused by the ship movements at sea, a kind of a phase array antenna equipped with a monopulse feed horn with antenna offset positions to detect off-signals from the transmitter signal beam. Developing such antenna with requested low noise figure was done and applied for a patent (PCT). It was manufactured to meet the demands on very short response time to adjust the bearing to the communication satellite from the developed gimbal VSAT system on board the marine vessel.

>>ELECTRONIC RADAR MONOPULSE DEVICE TRANSPONDER / TRANSMITTER / LOW NOISE FIGURE / DEVELOPED FOR C / Ku /Ka - FREQUENCIES<<

A new technical monopulse feed-horn design of a phase array antenna made it possible to transmit signals aimed for tracking a flying object and keep it in target.

TRULSTECH

>>4-AXIS VSAT GIMBAL LOW RESONANCE SYSTEM - DEVELOPED FOR BROAD BAND SATELLITE COMMUNICATION FROM VESSELS AT SEA, RESPECTIVELY VEHICLES UNDER MOVEMENT ON LAND<<

To track a flying object from horizon (0°) over zenith (90°) to horizon (180°) a 4-axis mechanical movement requires. It also is important to reduce internal mechanical resonance frequencies to a minimum to reduce wrong data from the sensors (inclinometers & accelerometers) mounted on the mechanical rig, to operate the 4-axis VSAT gimbal system in precision enough to keep the flying object in target. To succeed reducing the internal mechanical resonance frequencies, the best is to focus on the joints and to compose a mix of different materials with different known resonance properties. Furthermore, a CANBUS data system is recommended to get the ability to communicate with the sensors to adjust the antenna within 5 arc-seconds, otherwise the flying object will be lost from the target position.

Together with inclinometers and accelerometers mounted on each axis and a CANBUSS system the response time became minimal (less than 5 arc-seconds) to compensate for +/- 30° pitch, roll, yaw, at heavy sea.

The system was delivered 2003 to C2SAT International AB (Nasdaq).

>>DEVELOPMENT OF ELECTRIC SIGNAL DISTRIBUTION IN A TITANIUM CONDUCTOR<<

In mission to distribute radio signals in a mechanical Gimbal VSAT rig in mission to avoid lots of heavy signal cables in the mechanical rig, making it easier to reduce internal mechanical frequencies in the VSAT system, the material was tested to use titanium as the metal rig.
The idea came from the medical science that had proved the ability to send neuron signals through titanium replacing an arm including joints to send neuron signal to move a hand or other human parts connected to a spare-part of titanium.
It seemed to meet the highest expectations to transmit radio signals by titanium material. Unfortunately, titanium was several times more expensive compared with electric cables for radio signals.

TRULSTECH

>>**Development of absolute non-toxic chemical flame retardants aimed for synthetic materials - PUR resin; PUR foam (MDI/TDI); PVC resin; PVC film; Polyester; EPDM rubber**<<

An American business corporation contacted Trulstech to request about the ability to develop absolute non-toxic chemical flame retardant additives suitable for being extruded together with the chemicals of the synthetic plastic materials PUR; PVC; Polyester; EPDM rubber.

The existing litteratur informed more or less about the same kind of inorganic chemical compositions just very little difference regarding the chemical composition.

Instead Trulstech took another approach, starting form the human nutrition and metabolism to find out what chemicals were accepted regarding quantities respectively concentrations. But also, open-up for both endothermic and exothermic chemical reactions, necessary for an effective flame retardant.
Furthermore, the flame retardant chemical composition had to start decompose at the same temperatur as the material in target.

By studying nature to find out more about organic materials available to meet the basic demands on a flame retardant, focus became on food grade chemicals, like in berries, grapes, fruits and bread.

Most chemists claimed it was no possibility to apply organic materials as flame retardants, it wouldn't work.
Nevertheless, it was worth to test to be convinced if the chemists were right or if there might be a possibility to go for applying organic materials instead of inorganic ditto.

The initial test of an organic chemical flame retardant applied on PU-resin did go well showing requested flame retardant function.
Next step was to optimise the chemical composition and so it went on until Trulstech had developed a chemical composition powder that met the demands on being extruded together with PU as well as PVC, Polyester respectively EPDM rubber.

TRULSTECH

Ready to introduce the absolute non-toxic chemical organic flame retardant composition, the business market was not ready for it.
The main chemical manufacturer that market and sell the most hazardous flame retardants started a very strong lobbyism directed towards politicians, authorities, industrial managements of the material manufacturing industries.

The lobbyists claimed that the international scientists were wrong about existing hazardous flame retardants and claimed it was a conspiracy against the chemical producers of inorganic flame retardants.

As neither politicians nor authorities nor industrial managements are known to have any knowledge in chemistry, the lobbyists have had a progress in their campaign to keep on producing hazardous chemical flame retardants.

Due to the business situation, Trulstech followed its business strategy to set-up new independent business companies dedicated to any new IP product development done by Trulstech.

In March 27, 2009, the British company - Biomimetic Technology Ltd - was registered at Companies House in London.
Biomimetic became dedicated to be the hub of all absolute non-toxic chemical IP product developments of additives and standalone products developed by Trulstech.

To increase the business market for the IP product developments Trulstech focused on chemical standalone products aimed for the commercial consumer business market.

Please, kindly visit Internet and the following links,
(**biomimetic-sweden.com**) to get more specific information about the broad spectrum of different chemical products available today by manufacturing facilities in Sweden (**www.renlyclean.se**).

Welcome to continue reading the rest of documents on this website !