INTERNATIONAL TECHNOLOGY PROJECTS

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International Technology Projects

Project Name: Next Generation Freezing Technologies

Overview:

The quality of frozen food is affected by many factors. These include upstream conditions (e.g. selection of raw materials, seasonal conditions, processing, etc.), the actual freezing process (e.g. speed of freezing, use of cold air and/or liquid nitrogen, etc.), as well as downstream conditions (e.g. transportation, distribution, home freezer environments, etc.). The focus is on the entire spectrum of innovation in the frozen food industry.

For Further Details

Project Name: Alternative Animal Protein

Overview:

Consumer demand for alternative protein sources is increasing. This is driven by a variety of motivations including health benefits, environmental benefits, concerns for animal welfare, economic concerns, and future global resource concerns.

For Further Details

Project Name: Ingredients that prevent Drinks from Freezing

Overview:

It is known that the larger the molality of the beverage, the lower the freezing temperature of the solution. However, in reality, freezing points of around -4 degree C is the limitation. Glycerin may be an option, but the largest concentration used in beverages is around 10-20g/L, which would not provide much impact on freezing point.

For Further Details

Project Name: Water Repellant superhydrophobic coatings technology

Overview:

The technology and formulations would offer benefits across a broad range of application spaces, both industrial and consumer, including water repellent paints, textiles & apparel, concrete, stone & brick, marine coatings and 'consumer/aftermarket waterproofing.' Thus, coatings companies and large-scale users of protective coatings will want to consider securing this technology.

For Further Details

Project Name: Developing a new plastic that is non-fossil cyclic compound with the heterocyclic ring, aromatic ring or alicyclic ring in the backbone

Overview:

Plastics are very practical and used throughout daily life, but new functions are always required from the market. At the same time, there is a concern about the possibility of causing environmental problems. Now, there are a wide variety of biologically derived monomers.

Interest is in producing polymers with new functions (e.g. hard plastic) from these biomass monomers and, therefore, particularly interested in cyclic compounds which can be a base material for such polymers.

For Further Details

Project Name: Efficient recovery methods of components contained in the exhaust gas

Overview:

Gas discharged from the exhaust port contains tiny amounts of compounds other than nitrogen monoxide (CO), hydrocarbon (HC), nitrogen oxide (NOx), carbon dioxide (CO2), nitrogen (N2), or oxygen (O2). We are looking for a technology that

can efficiently collect such small amounts of compounds from the above-mentioned gas.

See below for the example of compounds.
– Alcohol
– Aldehyde
– Ester
– Franc
– Piran
– Phenol
– Pyrazine
etc.

At the end of the process, we assume that each compound can be isolated and recovered at a high concentration in ethanol.

For Further Details

Project Name: Portable Device Senses Overexposure to Harmful UV Rays, Considering Your Unique Skin Type

Overview:

Different skin types react to UV exposure differently. The sensor can also advise on sunscreen SPF levels required and application times. There are many UV sensors and skin sensors available on the market. However, this is the only invention that integrates the two sensors. The device uses both sensors to advise the user.

- The system tracks and alerts a user about UV radiation based on the measurement of skin type.
- This is the only device that integrates UV sensor, a sensor for the skin type, and controller.
- Skin type sensor measures characteristics such as erythematic and melanin.
- The UV detection device measures the ultraviolet ray quantity present in the environment.

- The controller bases its advice on data received from the skin measuring device and the ambient UV, as well as the amount of time the user will be exposed to the environment.

For Further Details

Project Name: Electric Tools and Manipulators for Extreme Environments

Overview:

Hydraulic tools and manipulators are currently being utilized for high pressure and extreme environment needs. As the field is moving towards all-electric components our client is interested in all-electric tools and manipulation technologies that could be used currently as well as those in development. While the highest interest is in the tools/manipulators themselves, there is also an interest in technologies that can be used to control them

For Further Details

Project Name: New Oxygen Barrier for Food Packaging As Effective As Aluminum – But Transparent and Microwavable

Overview:

A new transparent type of polymers that absorb oxygen could be developed. When mixed with another resin, this polymer creates a material that acts as a superior oxygen barrier at room temperature. It would as effective as aluminium packaging — less than 0.1 cc/m2/day permeability at atmospheric pressure. Unlike aluminium, the material is both transparent and can be microwaved. Mixed with nylon, this polymer would act as an oxygen absorber in food packaging and shall withstand higher temperatures.

Such a polymer can be rolled into films, moulded into trays, cups, or bottles, or used in oxygen barrier pressure-sensitive adhesives. In packaging retort situations, it scavenges oxygen trapped within the package so that when the packaging returns to room temperature, virtually no oxygen is left inside to spoil taste or food quality.

Under high temperature and high humidity, which can jeopardize the ability of such polymers to act as an oxygen barrier, this polymer maintains its high barrier function. The material will then be a micro-dispersed complex of oxygen-absorbing resin (isoprene) in a matrix polymer (EVOH, nylon). The small amounts of oxygen that otherwise might get through the EVOH shall get absorbed by the isoprene resin. Absorbency is one-way. A chemical reaction traps the oxygen molecules.

For Further Details

Project Name: Broad Spectrum Preservatives Effective Against Mold, Yeast and Bacteria for Use in Food & Beverages

Overview:

Consumers are driving innovation in the beverage market and are always looking for new and exciting products with more healthy choices and flavours. No existing preservation methods work across all pH's and therefore beverage companies are finding it increasingly difficult to maintain sterile products on bottling lines which have multiple changes from product to product. This is particularly true if the producer is working with both dairy and fruit products. While most traditional preservatives have an excellent broad-spectrum antimicrobial; producers are looking for alternatives or different combinations and formulations of existing technologies.

For Further Details


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