

International Congress on Bio-based Plastics and Composites

3rd Biowerkstoff-Kongress 2010

April 20th – 21st 2010, HANNOVER MESSE, Convention Center, Saal 2



The Winners

Propper GmbH & Co. KG
Progran

GreenGran B.V.
GreenGran

Henkel AG
Arctic

Innovation Award – Bio-based Material of the Year 2010

For the third year running an Innovation Prize has been awarded to the young, innovative bio-based industry. The aim is to recognize and reward innovative ideas in the industry regarding product development and design, as well as the development of new technologies and processes. The competition seeks to encourage the development of new bio-based materials, along with suitable applications and markets for bio-based products. The focus of the prize is on new developments within these areas, which have had a market launch in 2010.

The winner was elected on April 20th by the participants of the congress.

Sponsor



Premium partner



The Innovation Award winners (from the left to the right): Martin Snijder (GreenGran), Michael Carus (nova-Institut), Daniel Ridge (Propper), Peter von Hoffmann (Coperion), Oliver Schmid (Propper), Peter Rushe (Henkel), Carolin Wiegand (Henkel). Source: nova-Institut 2010



Propper GmbH & Co. KG | Proganic

Propper GmbH & Co. KG (Germany)

Bio-based material: Proganic® (based on PHA)

Application: Watering Can

PROGANIC® is a new material made from 100 % natural renewable raw materials and minerals. It looks, feels and works just like plastic, and is just as water repellent and resistant, similarly to UV-rays, but it is organic and can be easily reintroduced into the Earth's natural cycle by composting.

The material is based on three main ingredients: Polyhydroxyalkanoate (PHA), Carnuba Wax and a natural mineral filler.

Polyhydroxyalkanoate (PHA) is a biopolymer that is made by bacteria. It can break down naturally, therefore it is biodegradable. PHA has the same qualities as plastic, but it uses renewable raw material such as sugar from crops, instead of finite natural resources such as crude oil, natural gas and charcoal.

Carnauba Wax is the hardest known natural wax derived from the Carnuba Palm leaves. It is harmless to health and is fragrance – free.

A natural mineral is used as filler (bulking agent) which has water-repellent and sealing properties.

Apart from that, only natural color pigments are used for all PROGANIC® products.

The material is produced to have the same hardwearing and versatile uses as plastic and can be processed without problems. It is fully biodegradable and conforms to all worldwide food standards. It has been tested by the American Food and Drug Administration (FDA) and conforms to EU norm 71. It can be used for durable products such as flower pots, watering cans, trays, bottles, bags and containers of all sorts as well as for single use products like disposable cutlery and packaging films (to 80 µ). It is dishwasher proof and heat resistant up to 48 °C. The first product line of watering cans and flower pots is introduced to home improvement stores in spring/summer 2010.



GreenGran B.V. | GreenGran

GreenGran B.V. (The Netherlands/China)

Bio-based material: GreenGran, Natural Fibre Reinforced

Application: BioCharger

Using sustainable and renewable natural plant fibres (such as flax, jute, hemp and kenaf) and through industrial production techniques that mix them into plastics, GreenGran's granules are made from a combination of these natural fibres with polypropylene, thus reducing the use of petroleum products. Five times stiffer and 2.5 times stronger than polypropylene, they will not cause wear and tear to the screw and the mould as glass fibres do, and unlike glass fibres, they do not pose safety and health risks and generally show a better energy and CO₂-balance. Their recoverable component comes from these natural plants and can make up over half of their weight, up to 80 percent. All these features make them suitable for the production of durable products. GreenGran granules offer many advantages like good insulation, dimensional stability at high temperatures, a high thermal deformation temperature, and impermeability. They are flame retardant and they possess a stiffness and strength similar to traditional glass fibre filled polypropylene. They can withstand long machine resistance time, have a low water absorption rate, high resistance to UV radiation and demonstrate normal flow behaviour, making them the best substitute for glass-reinforced plastic.

The granules are currently produced for a range of applications in automobiles, construction materials, packaging, toys and electronic products and launched onto the market in 2010.

Custom made orders are also available to cater for clients' products. The type and amount of natural fibres can be adjusted to manufacture products with different features and appearances. These include UL94 FR V0, V1 & V2 grades (flammability standards).



Henkel AG | Arctic

Henkel AG & Co. KGaA (Germany)

Bio-based material: Arctic (based on PLA)

Application: ECOMfort Correction Roller

ECOMfort is the latest Correction Roller from the Pritt Stationery range, to be launched on the market in 2010.

The newly developed and innovative natural 'Arctic' material sets new standards as it replaces a highly technical performance plastic with a sustainable renewable material. The development phase lasted over 12 months in which the base PLA material was optimised to increase specific technical values in line with standard plastics. In parallel, the processing and manufacturability of the material was improved. Standard conventional injection machines were modified to optimise working parameters. Both Compounding and Injection methods were tweaked in order to advance and perfect the processability. Machines were modified and changed gradually to increase performance and output. Finally a material was born – 'Arctic'. The new Pritt ECOMfort is the first Correction Roller in the world made from approx. 89 % natural plastic (device shells, excluding usable material such as correction tape & inner parts). This results in approximately 60 % less CO₂ emissions, compared to a roller made from standard plastic, in terms of the whole life-cycle from production (incl. transportation) until waste disposal (same method e.g. recycling).

