



Media Service

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International FoodTec Award 2021: Focus on Award Winners

Award for pioneering innovation projects by companies in the food and supplier industry - www.foodtecaward.com

(DLG). This year, the DLG (Deutsche Landwirtschafts-Gesellschaft - German Agricultural Society) presented the International FoodTec Award 2021 to 20 award winners. This year, the renowned prize was awarded to innovation projects from the international food and supplier industry. Five innovations received the International FoodTec Award in gold and fifteen innovations were awarded silver. The award winners include companies from Australia, Italy, Switzerland, Spain and Germany. The International FoodTec Award is presented every three years in the run-up to Anuga FoodTec.

The DLG awarded the Innovation Prize in cooperation with the following trade and media partners: EFFoST (European Federation of Food Science and Technology), Anuga FoodTec, the trade journals "Fleischwirtschaft" and "Fleischwirtschaft international" published by Deutscher Fachverlag, the trade journals "European Dairy Magazine" and "Deutsche Milchwirtschaft" published by Th. Mann publishing house, the trade journals "European Dairy Magazine" and "Deutsche Milchwirtschaft", the trade journal "FOOD Lab - Qualitätsmanagement, Analytik und Nachhaltigkeit" published by Bückler-Fachverlag, the trade journal "DLG-Lebensmittel" published by DLG-Verlag and the magazine "Lebensmitteltechnik" published by LT Food Medien-Verlag.

Gold medals were awarded to products with a new concept in which the function has significantly changed and the use of which gives rise to a new process or materially improves an existing process. Silver medals were awarded to existing products which have been developed to such an extent that a substantial improvement in their function and the process is achieved.

Winners of the International FoodTec Award 2021 in Gold:

- **Seydelmann Ohmic Systems - SEYOS GmbH (Aalen, Deutschland):**
Ohmic heating of meat and sausage products
- **Kuchenmeister GmbH (Soest, Deutschland):**
Multi-variable baking process - oven with combined heat transfer
- **ALPMA Alpenland Maschinenbau GmbH (Rott am Inn, Deutschland):**
Butter packaging with freshness seal
- **HIPERBARIC SAU (Burgos, Spanien):**
„Hiperbaric HPP In-Bulk Technology“
- **Allgaier Process Technology GmbH (Uhingen, Deutschland):**
Allgaier CDry® food type contact disc dryer

Winners of the International FoodTec Award 2021 in Silver:

- **Albert Handtmann Maschinenfabrik GmbH & Co. KG (Bierbach a.d. Riß, Deutschland):**
FS 525 all-in-one forming and cutting system
- **CSB-System SE (Geilenkirchen, Deutschland):**
CSB Jamboflash: artificial intelligence for raw ham quality control
- **K+G WETTER GmbH (Biedenkopf-Breidenstein, Deutschland):**
Vakuum Industrie VCM 360 und/and VCM 550 HYGENIC SECURE
- **MADO GmbH (Dornhan, Deutschland):**
Finger Protection System (FPS)
- **Maschinenfabrik Seydelmann KG (Stuttgart, Deutschland):**
RFID cutting set
- **Peerox GmbH (Dresden, Deutschland):**
Self-learning assistance system for machine operators
- **VEMAG Maschinebau GmbH (Verden/Aller, Deutschland):**
VEMAG LL335 universal solution for the automatic grouping and packaging of fresh sausages in trays
- **GEA Westfalia Separator Group GmbH (Oelde, Deutschland):**
IDEAL Whey Separation
- **Krones AG (Neutraubling, Deutschland):**
Aseptic dosing for minimum quantities

- **OPTIMA consumer GmbH (Schwäbisch Hall, Deutschland):**
EGS: development of an innovative system for evacuating, gassing and seaming infant formula containers
- **Plasmion GmbH (Augsburg, Deutschland):**
SICRIT® – innovative ionisation technology for real-time analyses
- **StarVac Systems GmbH (Kandern, Deutschland/Australien):**
Jupiter 445 High Speed Vacuum Packaging machine
- **Tropical Food Machinery SRL (Busseto, Italien)**
Cerere 6000, The New TFM Automatic Banana Peeler
- **Habasit International AG, Reinach, Schweiz (Switzerland)**
The innovative Habasit Super HyCLEAN Modular Belt
- **STORR GmbH, Stadtlohn, Deutschland (Germany)**
Food Distriwall

Jury of experts

The winners were selected by a an international jury of distinguished experts from different fields: Prof. Dr. Ir. C.D. (Kees) de Gooijer (Food & Nutrition Delta, Wageningen / Niederlande), Prof. Dr. Antonio Delgado (Friedrich-Alexander-Universität, Erlangen-Nürnberg), Prof. Dr. Michael Doßmann (Hochschule Weihenstephan-Triesdorf, Weidenbach), Prof. Dr. Michael Gänzle (University of Alberta, Edmonton / Kanada), Prof. Dr. Tilo Hühn (ZHAW Zürcher Hochschule für Angewandte Wissenschaften, Wädenswil / Schweiz), Prof. Dr. Henry Jäger (Universität für Bodenkultur, Wien / Österreich), Prof. Dr. Alexander Kolesnov (Peoples´ Friendship University of Russia, Russland), Prof. Dr. Horst-Christian Langowski (Fraunhofer Institut für Verpackungstechnik und Verpackung, Freising-Weihenstephan), Prof. Dr. Helmy T. Omran († Suez Canal University, Ismailia / Ägypten), Prof. Dr. Achim Stiebing, i. R. (Hochschule Ostwestfalen-Lippe, Lemgo) und Prof. Dr. Jochen Weiss (Universität Hohenheim, Stuttgart).

Short profiles of the award-winning innovations are available on the following pages and online at: www.foodtecaward.com

Short profiles of the winners of the International FoodTec Award 2021

Gold prize-winners

Ohmic heating of meat and sausage products, Seydelmann Ohmic Systems - SeyOS GmbH, Aalen, Germany

The ohmic heating of meat and sausage products is a heat treatment process. When an electrical current is passed through the food, the food is heated due to its ohmic resistance. In this process, the sausage meat or piece of meat serves as a conductor between the electrodes. Heating takes place uniformly over the entire length and over the entire cross-section within a very short period of time. Besides an energy saving of over 80% and a significant time reduction, this results in a continuous production process that takes up a fraction of the space required by a conventional cooking facility. Microbiological risks are minimised due to the steep heating curve and flavours are preserved better thanks to the short heating time. The resulting cooking loss is also less, jelly formation is reduced and no overcooked or dry edge strips occur.

Multi-variable baking process - oven with combined heat transfer, Kuchenmeister GmbH, Soest, Germany

This newly developed process enables the optimum heat transfer required for the respectively desired quality of the baked goods to be selected in each phase of the baking process. The methods primarily chosen are convection or radiation. The intensity of the radiation and convection is adjusted continuously in the lower and upper heat area in each oven segment. The process is used mainly in continuous ovens. The segments have a length of 2,500 mm; with a baking area of 100 m², this means that the heat transfer can be adjusted between 12 and 20 times to ensure an optimum baking process flow. The specific, independent input of the thermal energy using the optimum heat transfer method in each case leads to efficient energy consumption while delivering high-quality baked goods at the same time. All baked goods and long-life baked goods can be produced in the oven with combined heat transfer.

Butter packaging with freshness seal, ALPMA Alpenland Maschinenbau GmbH, Rottam Inn, Germany

The ALPMA freshness packaging is folding packaging whose packaging film is continuously sealed on the closure side. Very special, innovative film cutting can be used to fold the film so that sealing zones occur outside of the product area. As a result of this, fresh butter aroma is verifiably kept in the packaging for longer and the shelf life is extended. This process also leads to tamper-proof and hygienic packaging which ensures that the consumer is the

first to open it. Practical opening tabs enable easy opening without fingers becoming greasy. In addition, less packaging material is required for optimum product protection in comparison with a plastic tub.

Hiperbaric HPP in-bulk technology, HIPERBARIC SAU, Burgos, Spain

Hiperbaric has developed a HPP in-bulk concept (high-pressure processing) for beverage industry production lines. So far, HPP has been operated as an in-pack process in which packaged products are packed into baskets and inserted into a container with a fill level of 45-55%. The new technology achieves a fill level of over 90% and maximum productivity for HPP beverages with lower processing costs and lower energy consumption. With the new technology, product filling takes place downstream of HPP. This simplifies the production process, because only four steps are required in contrast to the six steps necessary in the in-pack process: while the packaged product has to be loaded and unloaded from the baskets in HPP in-pack units, all of these steps are fully automatic in Hiperbaric in-bulk systems, as the fluid passes directly into the filling pipeline to the filling line without intermediate steps. This makes traceability simpler and reduces labour costs. The HPP in-bulk concept also represents a significant improvement in flexible production as any type of packaging can be used irrespective of material, design or size.

Allgaier CDry® food type contact disc dryer, Allgaier Process Technology GmbH, Uhingen, Germany

The central component of this efficient contact dryer is a bundle consisting of hollow discs that are mounted vertically on a carrier shaft and heated from the inside with saturated steam. The liquid is dried on the disc surfaces during rotation. Stable and, above all, self-adjusting knives scrape the dried product from the discs. This enables a large drying surface in a very small space while ensuring maximum drying process robustness. The Allgaier CDry contact disc dryer is already being used successfully in the chemicals industry and other non-food sectors. Giving consideration to the EHEDG's latest Hygienic Design Guidelines, the machine has been further developed for the food industry while retaining its proven functional principles.

Silver prize-winners

FS 525 all-in-one forming and cutting system, Albert Handtmann Maschinenfabrik GmbH & Co. KG, Biberach a. d. Riß, Germany

The production of visually appealing products consisting of diverse input materials and geometries is now part of the portfolio of modern food producers. Products with rounded corners or spheres, for example, are shaped using moving plates that are positioned above one another. Cylindrical products with sharp edges are cut using a knife. Accordingly, various machines are needed to be able to offer a wide variety of products.

The all-in-one forming and cutting system from Handtmann solves this problem by enabling the application of both forming and cutting technologies within one machine. This innovative concept increases flexibility, reduces purchasing costs and boosts efficiency. The prerequisite for this is a machine design with an innovative drive concept. Depending on the product, either perforated plates are attached for forming or a rotating knife for cutting.

CSB Jamboflash: artificial intelligence for raw ham quality control, CSB-System SE, Geilenkirchen, Germany

CSB Jamboflash is an image processing technology that independently classifies and evaluates raw ham meat with the aid of artificial intelligence. Based on the determined quality level, the system fully automatically determines the ideal method for further processing the raw ham to form different processed foods, such as high-quality ham or sausage products, for example, in the downstream production processes. Classification is carried out based on the objective assessment of the degree of raw ham destructuring. The constantly uniform and precise measurement level reduces error rates and costs and standardises the product quality. CSB Jamboflash was developed in the context of international project work undertaken by CSB-System SE and the French IFIP institute.

Industrial vacuum cutters VCM 360 and VCM 550 HYGENIC SECURE, K+G WETTER GmbH, Biedenkopf-Breidenstein, Germany

So far, seals in cutters are pressed and bonded into corresponding grooves. Contamination gradually occurs in the non-visible area behind the seal. Regularly removing these seals for safe cleaning and subsequent visual inspection is not feasible in practice.

The new knife cover seal can be installed and removed without tools thanks to a simple clip system in the cutters' knife cover. This means that the seal itself and the contact area can be cleaned in a hygienically safe manner, quickly and easily. Thanks to its flexible clip function, the new seal solution is also able to absorb the frictional resistance that occurs, thus significantly reducing possible plastic abrasion.

Finger Protection System (FPS), MADDO GmbH, Dornhan, Germany

The Finger Protection System increases the safety of operating personnel working on band saws in the butcher trade and the meat industry and therefore prevents serious injuries. The system consists of three sub-sections: the image processing system, the evaluation electronics and the mechanical brake unit to bring the saw band to a stop in a matter of milliseconds. The image processing system recognises the gloves that the operator is required to wear. As soon as these are detected in a defined area in front of the saw band by the image processing system, the saw is immediately stopped. In addition, replacement of the saw band is not necessary following a stop. The saw band's function is maintained despite the abrupt stop.

RFID cutter set query, Maschinenfabrik Seydelmann KG, Stuttgart, Germany

Incorrectly inserted cutter sets cause enormous costs – firstly due to raw material loss and secondly due to possible damage to the grinder. RFID codes in the cutter set parts enable the detection of perforated discs and grinder knives while they are being inserted into the machine. [The machine's control system indicates the necessary cutter set for the product to be manufactured.](#) Before inserting them, the operator scans each cutter set part in succession at a reader integrated into the machine. The control system indicates whether it is the correct cutter set part for the selected recipe and whether it is in the right position. Once all of the cutter set parts for the desired recipe have been detected, the machine can start. At the same time, it is not possible to produce certain products using the recipe selected on the control system as long as an unsuitable cutter set is installed.

Self-learning assistance system for machine operators, Peerox GmbH, Dresden, Germany

The efficiency of production machines is largely dependent on the machine operator's experience and knowledge. Without this knowledge, it is often impossible to rectify the causes of malfunctions adequately. During daily production, documentation and particularly finding the appropriate information pose a major challenge. This problem is solved by the self-learning assistance system MADDIX. The software analyses the current malfunction situation using machine learning methods and searches for comparable events that have occurred in the past. The related solution strategies are then presented on a tablet in the form of texts, images and videos. The structure of this knowledge documentation and presentation has been developed in cooperation with engineering psychologists and in numerous tests involving volunteers. The search is not carried out by the user but by an adaptive, automatic search algorithm. This results in an exchange platform for digitalising knowledge in the company. Machine manufacturers can also offer and integrate their own digital products, services, e-learning modules and much more besides.

VEMAG LL335 universal solution for the automatic grouping and packaging of fresh sausages in trays, VEMAG Maschinenbau GmbH, Verden/Aller, Germany

The VEMAG LL335 is used to sort sausages according to various casing types, calibres and lengths, to group them into the desired number and to place or insert them into a packaging medium in a guided process. In the first step, the products are checked. All improperly separated or damaged products are recognised by the LL335 and discharged by a blow-out system. In the second step, the products are transferred to the chamber belt. The chamber belt is used to align the sausages laterally in preparation for grouping. After lateral alignment, the sausages pass through the turning unit, which aligns the products to one another based on their curvature. The sausages are then fed to the triangular conveyor, which forms them into a compact group according to the specified number without backing them up and while in motion. The products are subsequently fed to the depositing mechanism, what is called the 'impeller'. The sausages are transferred to the packaging in a controlled 90° rotary movement. This controlled depositing enables even very narrow trays to be filled and, ultimately, packaging material to be saved.

IDEAL Whey Separation, GEA Westfalia Separator Group GmbH, Oelde, Germany

IDEAL Whey Separation is a system for the resource-optimised operation of whey separators. This is accomplished by using various measurement variables to control whey separator discharge and through the continuous and electronically supported regulation of the optimum discharge volume.

The focus here is on reducing product losses, which typically occur when discharge is carried out too frequently for cleaning purposes, and on reducing water and electricity consumption. In detail, this is achieved through the use of a sensor for registering the skimming quality in combination with the following parameters: smart discharge for cleaning, optimisation of the drum rotational speed depending on the automatically registered operating status, addition of digital components and functions to the mechanical discharge system for automatic adjustment of the discharge quantity and real-time visualisation of productivity-relevant operating parameters.

Aseptic dosing for minimum quantities, Kronos AG, Neutraubling, Germany

The aseptic dosing station enables minimum quantities to be dosed into a product stream from pouches. The dosing capacity is 2-20 litres per hour and offers e.g. application options for cultures, hop oils, aromas and enzymes. The media to be dosed are typically supplied in special, individual pouches for the corresponding emptying system; these are connected to the dosing system by means of injection facilities such as needles and tubes. The solution from Kronos AG requires no special injection systems and therefore enables the secure use

of 'commercially available' pouches. The pouch surface and the dosing facility are sterilised fully automatically. The pouch is placed onto the work platform and fixed in position using a vacuum. The pouch is pierced by means of an installed mandrel, and can now be emptied. Dosing into the product stream is carried out using a peristaltic pump. The mixture ratios are monitored and controlled accordingly. Up to three dosing platforms are available in one machine for continuous operation.

EGS: development of an innovative system for evacuating, gassing and seaming infant formula containers, OPTIMA consumer GmbH, Schwäbisch Hall, Germany

Optima has developed a solution concept for the fully automatic evacuation, gassing and sealing of infant formula containers in the high care sector. The innovative machine concept which makes the processes safer and more efficient is called OPTIMA EGS.

Besides the reduced amount of space required, users benefit from the clear traceability of all containers. EGS enables important production data to be assigned clearly and verifiably to each container throughout the processing processes (track & trace). The requirement of reduced residual oxygen values has been met with an evacuation process developed specifically for powdered baby food. The powder is fluidised in the process by means of various pressure stages without the use of valves and the oxygen bound in the powder is released. Depending on product, a residual oxygen content of 0.5% is achieved with a yield of up to 250 doses per minute. A patented function cover protects the containers from contamination and the machine from soiling throughout the entire evacuation and gassing process.

SICRIT® - innovative ionisation technology for real-time analyses

Plasmion GmbH, Augsburg, Germany

Plasmion has developed an innovative ionisation technology (SICRIT) for mass spectrometry (MS). The SICRIT technology decouples the supply of specimens from ionisation. This enables a simple design that radically simplifies sampling. The volatile flavouring substances are directly 'sucked in' through the ionisation source due to the vacuum prevailing in the mass spectrometer and are ionised during transfer. The new technology reduces the costs and effort involved in laboratory analyses, extends the spectrum of substances that can be analysed and improves the performance of existing devices. The new geometry, the simplicity (plug&play) and the robustness of the method enable any atmospheric pressure mass spectrometer to be transformed into what is called an 'electronic nose' and therefore obtain laboratory-grade chemical analyses on site even in an industrial environment. SICRIT thus permits one of the most high-performance analysis methods to be used in new application areas such as the real-time quality control of products and foods.

Jupiter 445 high-speed vacuum packaging machine, StarVac Systems GmbH, Kander, Australia/Germany

The core innovation of the Jupiter 445 vacuum packaging machine involves an entirely new, patented packaging concept (oscillating system). This concept consists of two adjacent vacuum chambers that move on a high-speed horizontal tracking system driven by a servo motor. The two chambers operate alternately and thereby double the possible packaging quantity. While one chamber is being loaded and unloaded, the other chamber is vacuumed and the product sealed. Once these process steps have been completed, the two chambers switch positions and the process is repeated. The sealed products are unloaded and the new product is loaded. Synchronised with the latest, intelligently integrated vacuum technology, this lowers energy consumption by up to 50% while additionally reducing operating costs.

Cerere 6000, the new TFM automatic banana peeler, Tropical Food Machinery SRL, Busseto/Parma, Italy

Tropical Food Machinery has patented the new, automatic banana peeler Cerere 600, which has a working capacity of 6 t/h fresh produce and a pulp extraction yield of 60%. Peeling the individual fruits guarantees the clear separation of the peel and fruit pulp. Processing is carried out in an inert atmosphere with anti-oxidation treatment, i.e. the Cerere 6000 peeler carries out automatic peeling in a nitrogen atmosphere chamber. This prevents product oxidation and delivers outstanding end product quality.

The use of labour is significantly reduced. Only 10-15 persons are required for the processes related to sorting and loading the 'banana hands' at the infeed system (process of removing the top edge of the banana). Cleaning can be carried out continuously with water to facilitate the ejection of peel residues from the peeler.

Habasit Super HyCLEAN modular belt, Habasit International AG, Reinach, Switzerland

Super HyCLEAN is a new concept for plastic modular belt systems. The products have been developed for applications in which maximum hygiene standards are required, with particular focus being placed on processing poultry and fish. The hygiene design significantly reduces the deposition of organic waste and enables simple and efficient cleaning processes at the same time. The Habasit Super HyCLEAN functions and the related advantages are as follows:

Thanks to the minimised use of hinges and rods, there are fewer pockets and corners where contamination is able to collect. The flat surface and minimal cavities in the rear section of the belt ensure that less organic waste is deposited. The risk of bacteria colony proliferation and the resulting cross-contamination of the product is reduced thanks to the dynamically open hinges and the wide modules. Rinsing with water from the side ensures simpler, faster and less expensive hygiene.

Food Distri Wall, STORR GmbH, Stadtlohn, Germany

With its Food Distri Wall partition wall system, STORR has developed a new concept for the distribution of fish, chilled and deep-frozen goods that minimises the opening time and is able to adjust the cargo area to be cooled as the cargo volume decreases. When the Distri Wall is used, the swing door automatically seals the cooled cargo area again after passing through. This significantly reduces energy consumption and supports the guaranteed observance of the cold chain. Thanks to the independently closing partition wall system, less moisture also enters the chiller or freezer segment, thus minimising ice formation. The system is easy to position due to the low weight of the partition wall, the user-friendly folding system and flexible Velcro strap fastening. The Distri Wall is a very good solution for distribution traffic but is also outstandingly suitable for permanent installation at all sluices and interfaces in refrigerated warehouses.

Further information under: www.foodtecaward.com