

Rank	Innovation Need	Details
1	New, sustainable or compostable packaging materials	Renewable material for packaging, e.g. glass bottle replacement, PET replacement - Sustainable, sourced, raw materials Bio derived food compatible polymers New, sustainable or compostable packaging materials Alternative Materials to Polyethylene Coated Paperboard for Freezer Applications Innovative and environmentally friendly new mono material film materials for packaging ready-to-heat (RTH) foods Next generation of plastic packaging – what is the next PET, cheaper, more sustainable and with better barrier properties?
2	Coatings & Barrier materials for packaging	Simple, sustainable protective coatings, low energy curing of coatings enhanced coating adherence Corrosion Inhibitors Coatings to prevent migration through packaging, ideally selectively printable Moisture Barrier Technologies Barriers for oxygen and CO2 Sealing solution to reduce moisture immigration within a composite system Edible adhesives and coatings that are activated with a low energy source or temperature Multi layer injection, blow and thermoforming. Label barrier packs.
3	Reduce fat / Sat Fat / Fat & Oil replacement	Solutions in fat / SAFA reduction Alternative fats & oils - hexane / high-temperature Reduced fat for fried crumb Non-Oil Frying (alternative food grade fluid that has a flash point > 450 to 500°F) Fat replacement Ingredients that enable fat reduction through exercise Lowering fats in products
4	Packaging interacting with consumer	eg sensation / perception altering coatings for metal packaging Dispensing, handling and storing Consumer information Packaging technologies that can allow new interaction with the consumer in addition to an element of personalisation Personalisation of offers via packaging
5	Novel opening, closing, sharing and portioning technologies for enhanced consumer packaging interaction	Easier opening or Closing of metal packaging Novel closure Injection and thermoformed portion packs Food on the go
6	Lightweighting / packaging materials reduction	Reduction in Packaging Material used in Cartons, Reduction in Packaging Material used in Shipping Containers Substantial Package Weight Reduction without Sacrificing Performance Generic interest Economical packaging barrier Lightweighting is an integral part of all design work
7	On-line printing	Industrial digital printing capability: wood/card/plastic/paper/textiles etc Printing On-line Multi-Color Film and Carton Printing online printing Personalisation In store or at manufacturer
8	Process monitoring, Sorting, Scanning and Vision Systems for High Speed	Rapid analysis method to determine ice crystal size in frozen foods / Seeking Innovative Methods for Size Sorting Small Tri-Axial Ellipsoids Noninvasive potato defect and content characterization Sortation of mixed Product for despatch / Distribution robust economical inline distillation process monitoring
9	Reduce sugar in beverages and food	Solutions in sugar reduction Lowering sugar content retaining sweetness level, low calori sweeteners Reduction / alternatives Lowering sugar in products solutions in sugar reduction
10	Solutions in calorie reduction / Non-caloric	Reduction / alternatives Total calorie reduction without affecting taste solutions in calorie reduction
11	New sustainable sources of Protein	Sustainable protein sources Chicken protein for health drink Sports Nutrition Business commercially viable alternatives to dairy protein
12	Natural / Less processed / Clean Label Ingredients (esp colours & preservatives)	Natural anti-oxidants Less process/refined food ingredients (perceived as more natural and less processed), especially: Fats & Oils (see the recent Foodbabe post on "Processed to Death"); Grains; and Label-Friendly Yeast and Mold inhibitors Clean label presevatives Natural Ingredients to Replace Synthetic Ingredients
13	Oxygen Scavenging / minimisation	High Speed Packaging with Low Residual Oxygen Materials with oxygen scavenging properties incorporated into pack Produce quality improvement throughout life Fresh produce applications
14	Supply chain Traceability solutions	Tracking of metal packaging through suply chain Traceability solutions tracking & ID, Big Data Generic interest Extending the supply chain
15	Materials, formulation or processing to deliver desired food properties	Technology to enable the production of a high quality evenly weighted product with a soft core; Method of incorporating particulate inclusions within an aerated product "Soft" deposit of breaded product (so crumb not lost) Advantaged and Differentiated Grain Milling & advantaged pellets, Reduction in Tortilla Sticking through Raw Materials. Formulation or Processing
16	Food grade packaging materials	Food grade colours for use in inkjet printers, especially white and green Food grade packaging materials Next generation of plastic packaging with better barrier properties? Large supplier to the food industry improved essential oil/ finished flavour packaging
17	Self cooling / heating container	Self-cooling can and self-heating can Self cooling Eating on the go Material or Mechanism to Maintain Low Product Temperature Outside of Fridge self heating
18	Big Data, Mobile, Apps, Gaming & Social Media	Innovative applications of mobile technology to drive impulse purchase Innovative applications of mobile technology to drive impulse purchase Extending the supply chain
19	Digital Technologies for Marketing & Ecommerce	Digital Technologies to Enable Mobile Marketing & Ecommerce of Consumer Food Products
20	Ingredients which enable exercise & recovery	Alternative to caffeine for energy, without negative impacts – ideally a sustained release throughout the day Dietary supplement Ingredients which allow you to exercise harder, for longer / aid recovery Soft drink applications

21	Ingredients/products with established health claims & Solutions for incorporating healthy ingredients	Solutions for Incorporation of Whole Grain into Wheat-Based Baked Goods Consumer health strategies Ingredients/products with established health claims relevant to adult health and exercise market & for cognitive capabilities Platform Technologies for food ingredients for health
22	New mouthfeel sensation / novel texture	Chemical / enzymatic treatments for Advantaged Food Products (e.g. a product that when chewed releases heat, enzymes to modify starch so finished product has a harder texture, etc.) innovative technologies that can allow us to increase the pleasure of drinking for beverage applications
23	Novel Sweeteners	Sweetness enhancing technologies/ingredients (non-artificial) New low calori sweeteners novel beverage sweeteners
24	Food Preservation & Extended Shelf-Life	Technologies for Food Preservation Reduction of Enzymatic Darkening in Chilled Dough Multi layer jars, bottles and thermoforming for extending shelf life Increase life or improve quality at end of life
25	Product optimisation for microwave cooking	Food Grade Edible Materials that Reflect Microwaves Fresh microwavable crumb (that delivers oven baked experience) Process and Consumer Microwave benefits ?
26	In-process cleaning, hygiene & Control of contamination	Control campylobacter in chicken products Advantaged and novel sterilization technologies Novel Microbiological load reduction / Non destructive bacteriocides Thermal process to achieve commercial sterility / novel ways to decontaminate packaging
27	Bacteria control / life extension in Packaging	Technologies for Food Preservation General packaging technologies Bacteria control in MAP Packaging for fresh poultry products - life extension Hurdle development for Listeria / CI Bot
28	Low-energy processes / Energy recovery	Low energy methods for producing fine powder mixtures Energy recovery solutions from low grade heat tailored thermal process to achieve commercial sterility
29	Differentiated Packaging design	Stacking of products to enable differentiated packaging Differentiated Packaging Design
30	Understanding emotions that effect consumer behaviour	Understanding emotions that effect consumer behaviour Generic interest in such technologies
31	Lowering salt in products	Methods and technologies to reduce salt content in products without impacting taste Reduction / alternatives Less Salt: salt alternatives, technologies that address sensory and taste perception; tools and devices to help educate consumers; methods that could be used in professional kitchens
32	Reduced food waste through full utilisation of natural products	Utilisations of bi-products from chicken Utilisation of loaf Crusts reduced/utilised plant waste
33	Altering taste	Keeping taste and managing cost Low Water Activity Date Paste flavour solutions
34	Novel speciality food ingredients & systems	New technologies in vegetable oils (e.g. clearec processes) Low Odour, Non-GMO Source of Lecithin novel beverage ingredients
35	Moisture management	Low Water Activity Date Paste Solution to Reduce Moisture Migration within a Composite System Reduce migration between ingredients
36	Pack tracking & anti-theft technology and systems	Anti-theft tags which work on metal Unique pack tracking technology and systems tracking & ID, Big Data
37	Anti-counterfeit technology	Embedded anti-counterfeit image technology, non visible to users. Needs "app" to identify. Anti-counterfeit technology Generic interest
38	Printing on food & 3D printing of food	printing on food at extrusion product Personalisation / Mass serialisation Printing barcodes direct
39	Tooling & Technology for Agile Manufacturing	Vacuum cooking Allergen management
40	Multi-fluid / componnet & High Viscosity Dispensing	Dispensing a Highly Viscous Liquid from Flexible Bags in a Controlled Manner Pack design facilities. Twin neck. Piston packs and airless systems
41	Reclosing / resealing technology for packs (including metal beverage cans & baked goods)	Reclosing / resealing technology for packs (including metal beverage cans & baked goods)
42	Breakthrough packaging components	Injection, blow and thermoforming Edibles
43	Packaging to facilitate food safe on-the-go hot eating	Eating on the go
44	Low water processes & washing	Produce / Factory reduce liquid waste generation or ways of reducing water consumption during the decontamination process. Unlocking use of "source" water
45	More effective shelf ready packaging	Display optimisation and shelf efficiency
46	Tactile properties of packaging	Tactile properties of packaging
47	Material / Food forming, joining & shaping	Technologies for metal forming, joining & shaping New Food Industry Manufacturing Processes (e.g. Injection Molding of Food)
48	Fibre fortifications	Reduction / alternatives Increasing nutritional value content in processed food
49	Consistent, safe cooking	Temperature Control of Food During Microwave Heating & "Perfect every time" BBQ chicken (via packaging, control or ingredients)
50	Preserving food, naturally - especially colour	Free-From: Natural Colors and Antioxidants Stable, natural food colours esp Red