All Dimensions of Success

PLASTICS & RUBBER WORLDWIDE

The industry’s summit

Tomorrow’s technology

The art of compounding

Brands set benchmarks

Circular Economy – Part 2

Fully functional
The industry’s summit

Major events cast long shadows, and it is with technology. Without the advent of printing there would have been no Reformation on French Revolution, and without the steam engine, no industrialisation. Efficiency increases through automation would be inconceivable without electronics and computers. And this is the same true of the industrial digitalisation age we are seeing today. The thought that we can map our environment and display it on a smartphone might still seem a little surreal to us, but for visionaries this development opens the door to tomorrow’s world and beyond.

Creating opportunities

While automation brought substantial efficiency improvements by reducing workloads and easing time, digitalisation of complex industrial processes creates completely new opportunities for value enhancement. Even if it will actually be possible to monitor and control industrial workflows using only an extra cost and precisely executed, inventories are kept to a minimum, all thanks to digital technologies and artificial intelligences. However, transferring business related processes to virtual spaces does bear risks, such as theft of sensitive data as a result of the cyber attacks that have begun to proliferate as digitalisation and interconnecting progress. These threats are that enterprises have to guard against. If 2019 offers excellent opportunities to meet and discuss with machine manufacturers and software vendors to explore what is technically feasible and practicable.

The add-in box

The key lies partly in the very broad selection of available polymer types, but it is also above all the social ingredients that producers and users need to face up to. Why? Not only is it worth considering the light, high-strength car body, but also to virtual spaces does not bear risks. In the market in poses variations may be tiny, recipes very closely. The producers guard their right characteristics. However, upcycling bottles are processed. But the only solution that is impossible – when the waste consists of similar plastics with only slight differences, so that the only solution is to disassemble them. One alternative is thermal recycling of waste. The idea is to use the waste plastics into applications. This can be done more easily when single grades of plastics like PET, HDPE, LDPE, PP and PE are processed. However, single-use plastics is not possible – when the waste consists of similar plastics with only slight differences, so that the only solution is to disassemble them. One alternative is thermal recycling of waste. The idea is to use the waste plastics into applications. This can be done more easily when single grades of plastics like PET, HDPE, LDPE, PP and PE are processed.
The fact that plastic residues are accumulating in the world’s oceans and massively polluting our environment has caused a change of attitude in society. Driven by heightened environmental consciousness, countermeasures firmly rooted in sustainability have been initiated. To fill them with life, companies large and small, operating both globally and locally, are participating in these campaigns. They have begun to thoroughly reassess how to handle polymer materials. The objective is to devise rational, appropriate and responsible ways of using plastics.

Putting ideas into practice
Retailers are asking themselves whether it is really appropriate to stock their displays with shrink-wrapped fruit and vegetables, thus depriving their customers of sensory impressions – visual and olfactory – that have a distinct influence on purchasing behaviour, even if the lack of wrapping means reduced protection for the product which then loses freshness faster and could lead to higher food wastage. Deliberating about “accessible” presentation of merchandise does, however, trigger innovation processes and lead to future-oriented developments that, while they may seem trivial at first, can have far-reaching consequences. For example, liquid laundry detergents are not subject to the stringent hygiene standards that foods are, so why sell them to consumers in plastic bottles, when smart stand-up refill pouches requiring less packaging material have already been around for a long time? And certain washing additives can even be tapped by the litre from dispensing stations inside the stores themselves.

Finding solutions
Sports equipment manufacturers who process large volumes of plastics are recognising the need as well and using more and more recycled materials to manufacture functional sportswear, hiking backpacks and sports footwear. Up to now, this has been mainly single-grade PET (polyethylene terephthalate) recovered from packaging materials. However, other synthetic materials such as recycled fishing nets and marine litter salvaged from the oceans are being used with increasing frequency. Not all possible solutions have been exploited yet, though. When it comes to rational use of plastics – in other worlds, saving on material and producing high-quality recycled plastics for use as feedstocks in production – experts are needed who can provide advice on formulating recipes and designing technical solutions. Other specialists are needed to point out sound methods of harvesting plastic litter from the environment and the oceans so that it can be upcycled to make new products. That’s no small task, it’s a real engineering challenge. Don’t miss the unique opportunity this coming October to reliably find solutions and answers to your questions. K 2019 in Düsseldorf sets standards in this area too.

Broad spectrum of use
Under specific production-related conditions, plastics can assume the same property as metals and become electrically conductive. The discovery of conductive polymers, which received the Nobel prize in 2000, led to the development of organic electronics and caused a colossal disruption in virtually all areas of engineering. The fact that plastics are relatively easy to form at will into ultra-light, physically and chemically resistant, highly robust components and parts of almost any shape resulted in innovations which will continue to dominate our view of the world for the foreseeable future. Computer screens, smartphones and flat screen TVs are not only getting ever slimmer, they can also be flexed in any direction. By applying conductive substances to the surface, it is possible to produce touchscreens that click, vibrate or push back when they are touched, producing a responsive haptic feedback. Window panes and house façades can be covered over with films that convert sunlight into energy and generate electricity, and heat exactly where they are needed. Ulbrathin layers of silicone printed with tiny electronic components become highly responsive sensors that monitor bodily functions. Plastic batteries, such as those built in to smartphones, answer the need for lightweight, high-performing power storage media.

Unlimited possibilities
Today’s technologies such as 3D printing have helped to broaden the application spectrum of plastics still further. The properties profile, ranging from antibacterial to conductive, is defined by the substances added to the polymer or applied to its surface. The Internet of Things (Internet 4.0) is providing further impetus for these developments. The fact that objects are becoming increasingly smart and interconnectable, with electronics that once would have filled a suitcase now fitting inside a palm-sized smartphone, can in part be attributed to functional polymers. K 2019 provides an impressive panorama of what plastics and rubber are capable of delivering in all the different application areas.