Through its acquisition of the specialty additives business of Air Products and the silica business of J. M. Huber in 2016, Evonik further strengthened its position in attractive markets and thus took important steps to ensure the Group’s continued global growth in the future.

We put together our own team of experts for the implementation of our digitalization strategy and founded a separate company that operates like a startup. Our aim is to use new business models to open up a market that is worth billions. To achieve this goal, we need know-how and, above all, creativity—an area of competence that, more than any other, is synonymous with Evonik’s success. The proofs of our creativity include innovative products such as probiotics for farm animals, powders for 3D printers, and PLEXIGLAS® panels for significantly larger airplane windows.

“Creating the exceptional” is the motto of the following pages, where we’d like to present to you some of our ideas that combine disparate themes and connect well thought-out solutions. These solutions will have a significant impact on our work and on the global markets in the future. As a result, this backward look is also a look at a future that harbors a wealth of opportunities.
Our company can look back on a successful business year 2016—which, however, was also characterized by difficult conditions and major political events. The global economy grew by a mere 2.3 percent in 2016. This was below our economists’ average expectations at the beginning of the year.

This weak growth was mainly due to the rather sluggish development of the North American economy. Growth was further impacted by the economic slowdown in the emerging markets. The economy of Latin America remained in a recession that was characterized by great regional differences.
Although the expansive monetary policy of the European Central Bank caused private consumption, in particular, to improve somewhat, there are still unanswered questions about the risks in the banking system and the consequences of the UK’s decision to leave the EU.

In this volatile and challenging environment, Evonik has continued to pursue its successful course. The adjusted EBITDA was extremely good in 2015 and was expected to be between €2.0 billion and €2.2 billion in 2016. We did in fact achieve this goal, with EBITDA amounting to €2.165 billion, which was near the top of the forecast range.

However, our sales of €12.7 billion are considerably below the prior year’s high level. This result is mainly due to lower raw material costs, which caused the prices we can charge to decline as well. By contrast, in 2016 our volume sales increased once again by comparison with the previous year.

We expect the conditions for the global economy to improve slightly in fiscal 2017, leading to global growth of 2.6 percent. At the same time, difficult political and geopolitical conditions still remain. This applies especially to the European Union, in which several key elections will be held in 2017.

At Evonik, we continue to look to the future with confidence. Because our investments will continue to pay off this year, we expect our adjusted EBITDA to surpass that of 2016. In our outlook, we assume the result will lie between €2.2 billion and €2.4 billion.

Evonik will celebrate its tenth anniversary in September 2017. In 2007 Werner Müller unveiled our carefully covered corporate headquarters in Essen. The new name “Evonik Industries” was clearly visible on the building’s roof.

Since then, we have been systematically enhancing our company, with creativity and an eye on the future. We weathered the global financial and economic crisis safely, launched Evonik on the stock market successfully, divested our real-estate business and our energy unit, and consistently focused the company’s operations on chemicals.

At the same time, we made our enterprise more international step by step and commissioned state-of-the-art production facilities in locations including Singapore, China, North America, and Brazil. Through our acquisition of the specialty additives business of Air Products we took a big and important step in the strategic development of our portfolio. We are substantially expanding this profitable business for Evonik in America and Asia and thus becoming one of the world’s leading suppliers of specialty additives. These business activities and the new employees are being rapidly integrated into our fast-growing Resource Efficiency and Nutrition & Care segments. Our expectations regarding the future development of specialty additives are correspondingly high.

We are similarly optimistic about our worldwide silica business, which we can strengthen through another acquisition that we made. Our acquisition of the silica unit of the family-run company J. M. Huber in the USA is enabling us to expand our presence in North America and Asia in this business as well—especially in the consumer-related sector. We expect to close this transaction successfully in the course of this year after receiving approval from the antitrust authorities.

Our silica business is also getting a boost from the construction of a new facility in the southern USA. Production at the facility is scheduled to begin in 2018. We have also invested in the silica sector in Brazil, where we put our new silica plant into operation in Americana last summer.
In order to further safeguard our growth opportunities in the methionine business, last October we began construction of a new production complex for methionine in Singapore, because the demand for animal feed additives is steadily increasing, especially in Asia. At our European locations as well, we have continued to prepare ourselves for the future. Last fall we held the ground-breaking ceremony for our new polyamide 12 powder facility in Marl, which will expand our production capacity for polyamide 12 powder by 50 percent. In this segment, we see especially strong growth potential in 3D printing.

In Weiterstadt, we are building a new stretching and polishing facility for PLEXIGLAS®, sold under the ACRYLITE® trademark in the Americas, which is scheduled to go into operation in early 2018. This plant will enable us to make substantially bigger and more uniform sheets of PLEXIGLAS® for the aviation industry, for example.

At the same time, we are also expanding our membrane production operations in Schörfling, Austria. The membrane business is an outstanding example of our use of innovative products to enter new markets. That’s because innovation, closeness to our customers, and creativity are crucial drivers of Evonik’s profitable growth. We want to invest a total of €4 billion in innovations by 2025. During the last fiscal year, we spent no less than €438 million on research & development. This investment is paying off, as it enabled us to submit around 230 new patents in 2016. We achieved about ten percent of our total sales with products that are less than five years old.

The “fourth Industrial Revolution” will be accompanied by pioneering innovations, and the associated digital transition is also affecting the chemical industry. For us, it is not only bringing technological progress but also opening up considerable potential for new business models, new supply-chain concepts, and new sales channels. Accordingly, we have adapted our organization in a timely and interdisciplinary process in order to identify and exploit at an early stage all the opportunities that the digital transition offers to Evonik.

But in spite of all this enthusiasm for innovation, outside of our daily business activities we have held fast to something that is very dear to us—our social commitment. For example, as we celebrate the tenth year of our existence, the Evonik Foundation will further intensify its diverse activities as a promoter of education, science, culture, and sports.

We will continue to focus in particular on the education and training of refugees and underprivileged young people from Germany.

Sustainable success in business operations and socially beneficial activities can only be achieved over the long term if a company has employees who are highly qualified, committed, and open to the world. We have them at Evonik—and that makes me very optimistic about our company’s present and its future.
THE EXECUTIVE BOARD

From left:
RALPH SVEN KAUFMANN
Chief Operating Officer
CHRISTIAN KULLMANN
Deputy Chairman of the Executive Board
UTE WOLF
Chief Financial Officer
KLAUS ENGEL
Chairman of the Executive Board
THOMAS WESSEL
Chief Human Resources Officer
Connecting with the Future: Evonik Acquires Businesses

Evonik is strategically expanding its business operations in important growth markets with two trailblazing acquisitions in North America. The group is thus expanding its international scope and putting its business activities on a broader foundation.
At Evonik, the year 2016 was characterized by external growth. The Group made a major acquisition in May, when it bought the specialty additives business of the US company Air Products. At a cost of about US$3.8 billion, Evonik is taking over Air Products’ specialty additives business, which is distinguished by its steady growth and extremely attractive profit margins. This acquisition makes Evonik one of the leading global suppliers of specialty additives, not only in Europe but also in Asia and the Americas. Specialty additives are used in industrial cleaners, adhesives, and car paint, among other applications.
Evonik, whose headquarters are in Essen, also announced another acquisition at the end of 2016. For about US$630 million, it is taking over the silica business of the family-owned US company J. M. Huber. Both of these acquisitions complement Evonik’s existing portfolio perfectly. Both businesses have EBITDA margins of more than 20 percent, are expanding Evonik’s presence in important growth markets, and are enhancing the Group’s innovative strength. “These deals are giving a big boost to the future development of our growth segments Nutrition & Care and Resource Efficiency,” says Thomas Hermann, the Head of Corporate Strategy.

His team is constantly on the lookout for possible acquisition candidates in the global markets. A key criterion in the search is the candidate’s compatibility with Evonik’s strategy. Appealing regions, powerful innovation capability, and a culture that matches the Group’s creative self-image are additional requirements for capturing the attention of Hermann’s team. “A company that we buy has to fit in perfectly with Evonik’s growth strategy,” says Hermann. This growth strategy rests on three pillars: innovations, organic growth through investments, and external growth through acquisitions.

For example, in the coatings and adhesives market, Evonik is a leading supplier of crosslinkers for coatings. This market is growing by leaps and bounds. Evonik noted this trend and commissioned a plant for producing isophorone and isophorone diamine in Asia in mid-2014. The company invested over €100 million in order to be able to produce an additional 50,000 tons of these chemicals annually. The business is running well. In 2015 there was a significant increase in crosslinker sales, and this trend continued in 2016. Thanks to the acquisition of Air Products’ specialty additives business, the two teams can
now work together to exploit synergies and analyze further growth opportunities. The Americans are bringing additional know-how into these business operations. Thanks to their formulations, they are the global leaders in the epoxy hardener industry.

Another example is the global silica business. For more than five years, Evonik has systematically implemented a targeted investment program in order to expand its capacities, especially regarding precipitated silica for fuel-efficient and environmentally friendly low rolling-resistance tires. Shortly before Christmas, the Executive Board and the management laid the foundation stone for a new major production facility in southeastern USA. A few months before that, a new facility had been commissioned in Brazil. Since 2010, Evonik has expanded its production capacity by more than 40 percent for precipitated silica alone. The key driver of this expansion is the growing demand for low rolling-resistance tires. Through its planned acquisition of J. M. Huber’s silica business, Evonik now aims to expand its business with applications in the area of consumer goods. J. M. Huber’s silica business is one of the leading suppliers of silicas for toothpaste.

The acquisition of Air Products’ specialty additives business and J. M. Huber’s silica business is expected to increase Evonik’s sales by more than €1 billion. The conclusion of Evonik’s acquisition of the Air Products business at the end of 2016 marked the beginning of the integration process. In fiscal 2017, this business is expected to bring in about €250 million in earnings. The acquisition of J. M. Huber should be concluded in the course of this year. The best assurance that the integration of diverse business activities and companies into an industrial group can be quick and successful is the long corporate history of Evonik itself.
EVONIK IS TAKING ADVANTAGE OF THE OPPORTUNITIES OFFERED BY DIGITALIZATION. AN INTERNATIONAL AND INTERDISCIPLINARY TEAM IS ADDRESSING THIS THEME VIA A SEPARATE COMPANY ON BEHALF OF EVONIK—AND DEVELOPING BUSINESS MODELS FOR THE FUTURE.

Connecting with the Future: Digitalization at Evonik
What opportunities do e-commerce platforms offer to a specialty chemicals company? What market insights and opportunities are opened up by easy-to-use sensors that end customers can use to collect measuring data themselves? How can we further promote the networking of supply chains in the chemical industry? How do modern information and communication technologies influence daily work processes?

Digitalization is changing business, politics, and society. The chemical industry and its business environment are also feeling this impact. From Evonik’s perspective, digitalization is not only ushering in new technologies but also smoothing the way for new business models as well as new opportunities for cooperation in the areas of production and sales. “Digitalization is a growth driver for our company. Our goal is to open up
a market that is worth billions,” says Henrik Hahn, Evonik’s Chief Digital Officer.

Evonik regards itself as a pioneer of digitalization in the chemical industry. At the beginning of 2016 it put together its own team of specialists who will forge ahead with this theme. The approximately 20 members of this team are developing digital concepts and solutions and putting them into practice. In their work they apply their broad range of international experience, vast network, and mix of professional know-how from disciplines such as chemistry, business management, engineering, social sciences, and media sciences. “Each one of us contributes something different to our work. As a result, our interaction generates a creative mix that makes new solutions possible—outside the routine processes that have established themselves in the company,” says Hahn.

Evonik’s digitalization strategy rests on five pillars (see box) and has a holistic approach. The interplay of all these aspects is crucial for successfully preparing the company to face the challenges and opportunities of the future.

By establishing Evonik Digital GmbH in Essen at the beginning of 2016, Evonik created a formal structure in order to systematically promote digitalization. “Our team works along the lines of a startup. We’re focused and agile, and we have a lot of freedom,” Hahn explains. The new subsidiary will present the initial concrete results of its work in the course of 2017.

1 Digitalization provides the industry with valuable datasets and opens up completely new business opportunities.
2 Glass fiber cables enable the fast transmission of huge volumes of data.
3 High-powered computers play an important role in the storage and processing of data.
4 Work processes can be more effectively controlled by means of the processed data.
Evonik’s digitalization strategy in detail

CLOSE CONTACT WITH CUSTOMERS: Evonik is forging ahead with the development of customer-specific digital services with a high degree of user-friendliness. This development is based on the sharing of information across business units and professional groups, and thus on close contact with the company’s target groups. Only people who are familiar with the target groups’ questions and problems can develop the appropriate solutions.

SPEED AND AGILITY: Speed and flexibility are the keys to implementing digital solutions, services, and business models. As a result, new ideas can be tested quickly with the help of prototypes. That’s why Evonik can respond promptly to new market and customer demands.

A NETWORK OF PARTNERS: Bringing in external know-how in targeted ways helps the team members to gain different perspectives on its own work and develop new digital approaches. In order to receive these impulses from outside, Evonik is in close contact with startups and specialized partners. It is systematically expanding this network.

BUILDING SKILLS: By expanding and consolidating its digital skills, Evonik is creating the foundation for the sound evaluation of digital technologies and services and for the development of digital pilot projects.

DIGITAL CULTURE: Evonik promotes the development of a work culture that supports the company as it moves into the digital age. This culture is characterized by an attitude that creates space for quick and pragmatic solutions, presses ahead with implementation, builds on the knowledge of many people, and regards errors as an incentive to further development.
Connecting with the Future: Good Bacteria in Animal Feed

THE WORLD HEALTH ORGANIZATION HIGHLIGHTS A CONNECTION BETWEEN THE USE OF ANTIBIOTICS IN LIVESTOCK BREEDING AND THE INCIDENCE OF DANGEROUS MULTIRESISTANT BACTERIA IN HUMAN BEINGS. PROBIOTICS FROM EVONIK SHOULD HELP TO REDUCE THE USE OF ANTIBIOTIC GROWTH PROMOTERS IN AGRICULTURE.
The interior of a poultry pen is a scene of turbulence created by thousands of broiler chickens milling about. Nonetheless, when a chicken farm supervisor makes his rounds, he can see very quickly whether or not the animals are healthy. If he observes unusual behavior or discovers any sick animals, he has to call in a veterinarian. In cases of bacterial infections, antibiotics are used to prevent the infection from spreading.

Some illnesses develop without any conspicuous symptoms and are therefore easily overlooked. One example is the widespread “subclinical necrotic enteritis,” which is caused by Clostridium perfringens bacteria. If these bacteria overrun a chicken’s digestive system, they damage its intestinal wall. The sick chicken then continues to feed but stops growing normally—and infects other animals. This carries considerable risks for
the breeder, because chickens’ feed utilization is one of the most important factors in the profitability of his business. Experts estimate that this illness does several billion dollars’ worth of damage to worldwide poultry breeding every year.

As a result, from the 1950s onward poultry breeders customarily put antibiotics into their poultry feed to act as “growth promoters” and protect their animals from illnesses such as subclinical necrotic enteritis. Today scientists say that this practice is partly responsible for the increased incidence of multiresistant bacteria in human beings. The infections caused by these bacteria are almost impossible to treat with existing antibiotics. Consequently, the use of antibiotic growth promoters has been banned in the European Union since 2006. As part of its global action plan against antibiotic resistance, the World Health Organization is calling for a cautious use of antibiotics for animals. The retail trade and the hospitality industry are also reacting. In the USA, many supermarkets and restaurant chains are now advertising the fact that they offer meat from animals that have not been given any antibiotics.

However, this does not prevent the proliferation of undetected illnesses in poultry pens, with all of their dire consequences. One way to prevent such illnesses is to use bacteria called probiotics, which stabilize the intestinal flora. Probiotics are living microorganisms that are fed to livestock such as chickens as a feed additive and form colonies in the animals’ intestines.

According to various estimates, about $1 billion was spent globally on probiotics for animal feed in 2016. Experts predict that sales of probiotics will grow between six and ten percent annually. Evonik aims to play a leading role in this market in the future. “Thanks to our experience with amino acids, we are thoroughly familiar with the nutritional needs of farm animals. The animal feed industry appreciates us as an expert partner,” says Christoph Kobler, who is responsible for sustainable healthy nutrition at Evonik’s Animal Nutrition Business Line. “We want to offer our customers excellent products and to support them with tailor-made services and our comprehensive knowledge.” Thanks to increasing prosperity, more and more people all over the world can afford to include meat in their diets. In 2015 alone, about 320 million tons of meat were produced globally, with about 115 million tons coming from poultry. And the demand is growing.

In the summer of 2016, Evonik acquired the probiotics business of the Spanish company NOREL, which, among other things, manufactures products for chicken and piglet farms as well as for aquaculture. A marketing authorization application has been filed for the aquaculture products; the two other product groups are already available on the European market. In addition, through its in-house research Evonik has developed a new product for chicken feed that it will begin marketing in the USA and China in 2017 under the name GutCare® PY1. This product contains spores of a special strain of bacteria called Bacillus subtilis, which inhibit the growth of the pathogen that causes subclinical necrotic enteritis.

Other products are set to follow. As Evonik develops them, it is making good use of its research expertise. So far, scientists have only begun to understand exactly how probiotics work. Evonik aims to be the world’s first company to offer its customers a new generation of probiotics of proven effectiveness that have been customized to meet the customers’ needs. Evonik scientists are working on an innovative intestine simulation model at the company’s facility in Halle-Künsebeck, Germany. The model aims to biochemically
mimic the digestive process in a chicken’s entire gastrointestinal tract and demonstrate the effects of feed additives. The project is part of the innovation alliance “Good Bacteria and Bioactives in Industry” (GOBI), which is supported by the German Federal Ministry of Education and Research.

“A chicken’s intestinal tract is home to more than 100 billion bacteria. As a result, the mechanisms that take place here are extremely complex,” explains Peter Freisler, who is responsible for the business with products for maintaining the intestinal health of livestock. “The aim of the Evonik model is to use a laboratory setting to find out how probiotics work and how they influence the health of farm animals. These findings will make it easier to use our products optimally later on.”

For Evonik, entering the probiotics market is an initial step. “We are now looking at the health of farm animals comprehensively and from every possible perspective,” explains Kobler. “Our goal is to find solutions that make animal nutrition, and thus meat production, healthy and sustainable.”

This will benefit animal breeders and consumers—and also the chicken in the pens.

* The subproject “Good Bacteria and Bioactives in Industry – GOBI-FEED” is supported under the funding code 031B0074C by the German Federal Ministry of Education and Research as part of the funding program “Innovation Initiative for Industrial Biotechnology.”

1 Probiotics from Evonik help to stabilize the intestinal flora of chickens.
2 Probiotics from Evonik are also used in pig farming.
3 Salmon farming off the coast of Iceland—a possible area of application for probiotics from Evonik.
Connecting with the Future: New Materials from the Printer

FROM A TECHNOLOGICAL GIMMICK TO SERIAL PRINTING: 3D PRINTING IS CHANGING INDUSTRIAL PRODUCTION FROM THE GROUND UP. POLYMER POWDERS AND ADDITIVES FROM EVONIK ARE MAKING THIS CHANGE POSSIBLE.
The implantation of an artificial knee joint is one of the most frequently performed orthopedic operations. In Germany alone, approximately 165,000 operations of this kind are performed every year. They are challenging for surgeons, because every individual is different. As a result, implanting a prosthesis requires precise customization. To make sure a new knee joint fits perfectly, surgeons use a whole array of tools, including small plastic guides for directing a surgical drill. Thanks to these guides, the surgeon can place with extreme precision the holes for the screws that connect the artificial knee joint with the patient’s bones. Today these drilling aids are more and more frequently coming from a 3D printer.
“Industrial production is undergoing a radical change. Medical technology is one of the first markets where 3D printing is being used to produce large batch sizes. That’s because this is an area where the new technology can fully exploit its strengths,” says Sylvia Monsheimer, an expert on the new 3D printing technologies at Evonik. 3D printing is clean, fast, and innovative. What’s more, if the result is not optimal, the data set is simply changed and the piece is printed out again. In the field of medical technology, this is a huge advantage. Evonik offers several polymers and additives for a variety of 3D printing processes.

Market researchers expect the global market for 3D printing to grow by 25 percent annually in the period until 2020. In 2016 the sales for 3D printing totaled about $7 billion, but in just the next four years it may grow to as much as $17 billion. This development is being driven by technological progress: 3D printers are becoming increasingly powerful and capable of processing gigantic data volumes. In addition, the range of materials that are suitable for 3D printing is growing. “We are supporting the growth of the market for 3D printing by expanding our capacities, developing new products, and forming partnerships,” says Matthias Kottenhahn, who heads the High Performance Polymers Business Line at Evonik.

Medical technology, aerospace, automobile production—all of these industries use components made of high-quality plastics. Usually the raw material, such as a plastic granulate, is first melted and then poured or pressed into a mold with a predetermined shape. It is then reworked with the help of special tools.

In 3D printing, this final step is not necessary. The process doesn’t require the use of tools. On the basis of a digital three-dimensional construction plan, the plastic is poured layer by layer onto a surface area. The experts call 3D printing an “additive process.” Within a short period of time, the process creates a three-dimensional object that precisely corresponds to the digital specifications—and can be used right away.

Evonik’s polyamide 12 (PA 12) makes the Group one of the leading global suppliers of powders for 3D printing. These powders, which Evonik sells under the name VESTOSINT®, are perfectly
adapted to the various 3D printing technologies. They are produced at the company’s location in Marl, Germany, by means of a special process that was developed in-house at Evonik. The Group is currently expanding its production capacity for VESTOSINT® by 50 percent annually. Plans call for the new production line to go into operation at the end of this year. In addition, Evonik is systematically expanding its product range for 3D printing by adding new materials and types of powder.

And since the summer of 2016 Evonik is also participating in the open development platform for new 3D printing materials that was created by the IT company HP Inc. in the USA. Evonik expects that this participation will result in a further wave of development for additive production technologies. In the second quarter of 2017, Evonik will be the first materials producer to launch a certified product for innovative 3D printing technology in the program.
Connecting with the Future: Clear Views Ahead

Evonik will make possible much bigger windows in airplanes and helicopters—so that passengers and pilots can see just as much as people in a convertible. For that reason, it’s building the world’s most modern stretching and polishing plant for polymethyl methacrylate in Weiterstadt, Germany.
Spectacular sunrises over the African savanna, millions of lights illuminating New York City at night, white clouds piled up like luscious towers of cotton candy—today only the passengers who are sitting next to an airplane’s window can enjoy breathtaking sights like these. Their neighbors sitting along the aisles can only do their best to imagine these spectacular views. That’s because normal airplane windows are only 29 centimeters high.

Airplane manufacturers now aim to change that very soon. In their concept studies of the airplane of the future, all the passengers will have an unobstructed view over the clouds. In their technical visions, the designers are already seeing fully glassed-in planes flying through the air. From inside, the passengers and pilots can observe their surroundings unhindered through gigantic panoramic windows. However, it will still take some years for these visions to be
realized. “Today there’s already a definite trend toward bigger cabin windows in passenger planes,” says Martin Krämer, who heads the Acrylic Products Business Line at Evonik. For example, Boeing has enlarged the windows of the current model of the Dreamliner by two thirds—to a height of 48 centimeters. And that’s only the beginning.

Outstanding mechanical and optical properties, low weight, and easy processing: The materials used in the aerospace industry must withstand extremely high levels of stress. That’s why a special kind of PLEXIGLAS® sold under the ACRYLITE® trademark in the Americas is often used for the windows of airplanes and helicopters—and this has been the case for decades. In simple terms, these windows are made of cast PLEXIGLAS®, which is elongated in a time-consuming and very complex process. The technical term for this is “stretching.” Evonik is one of the leading producers of the necessary intermediate product.

In the future, Evonik will also take over the stretching and polishing process, thus making much larger windows possible. That’s yet another example of the smart way the Group is organizing its PLEXIGLAS® business. In Weiterstadt, Germany, Evonik is investing double-digit millions of euros in a new stretching and polishing facility for PLEXIGLAS® materials for aircraft. Production is scheduled to begin in early 2018.

At the moment, the industry has reached its limits regarding the size of large airplane windows. Currently, the biggest available stretched polymethyl methacrylate (PMMA) panels measure only 2.5 by 2.5 meters. Each of these panels is cut into several windows for passenger airplanes. However, this format is too small for producing large panorama windows or heavy-duty cockpit windshields in a single piece.
Evonik will soon become the first and only company in the world to market panels that are double this size—up to 3.7 by 5.4 meters—and deliver them directly to airplane window producers. As a specialty chemicals manufacturer, it will thus create a key prerequisite for the production of panorama windows for aircraft.

What’s more, the larger panel format will enable manufacturers of conventional aircraft windows to produce almost twice as many windows from a single panel. That makes economic sense. “We are rounding out our product portfolio as a full-service supplier of cast and stretched PMMA panels for the aerospace industry and positioning ourselves as a leading producer of polymer materials and intermediate products,” explains Roland Mickal, who heads the Transportation market segment in Evonik’s Acrylic Products Business Line.

The current aerospace-industry growth rates are attractive for Evonik. According to estimates, the four biggest producers of passenger aircraft, taken alone, will deliver approximately 30,000 new airplanes to their customers by 2031. That’s because more and more people all over the world can afford to fly away on vacation or are flying on business trips.

In the stretching process, the blocks of PLEXIGLAS® are first heated up and then stretched out with the help of clamps. This expands one square meter of PLEXIGLAS® into a panel measuring three square meters. Subsequently the cooled-off material is cut and polished. “The new facility will be the most modern one of its kind in the whole world. Thanks to our technology leadership, we will be able to offer our customers optimized products in the future,” says the Evonik expert Roland Mickal.

In addition, the stretched PLEXIGLAS® panels from Evonik will be extremely uniform. According to the experts, their thickness tolerance will be greatly improved. This is a value that indicates the extent to which a material’s thickness deviates from a desired target value. The smaller the deviations and the more constant this value remains, the more uniform are the technical properties of the material. There’s also another factor regarding airplane windows in particular: The lower the thickness tolerance is, the more lightweight are the windows and thus the entire airplane—and the less kerosene is consumed. That makes flying in a panorama jet not only more fun but also more environmentally friendly.

*Two brands, one product: Evonik is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.*